Supplemental materials

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Study protocol

Background

Knee replacement, or total knee arthroplasty (TKA), is among the most common orthopedic procedures. TKA aims to relieve pain, improve quality of life, and improve or maintain knee function.[1]

In the United States, about 4 million adults have had a TKA, representing 4.2% of the population exceeding fifty years of age. Over half of adults in the U.S. diagnosed with knee osteoarthritis will eventually have a total knee replacement. The prevalence of TKA among older adults in the U.S. far exceeds that of rheumatoid arthritis, and is almost as prevalent as congestive heart failure.[2] Nearly 700,000 TKA procedures are performed annually in the US. This number is expected to increase to 3.5 million procedures per year by 2030.[3]

Inadequate postoperative analgesia impairs rehabilitation, prolongs hospitalization, and increases the risk of adverse events including myocardial ischemia and infarction, pulmonary dysfunction, paralytic ileus, urinary retention, thromboembolism, impaired immune functions, and anxiety.[4] Importantly, inadequate postoperative pain control is strongly associated with development of persistent postsurgical pain.[4] Postoperative pain may also worsen postoperative blood loss after TKA.[5]

Chang and Cho[6] conducted a survey to evaluate various analgesic approaches to TKA, comparing pain intensity and analgesic efficacy in 424 patients who had a TKA in 14 hospitals. They found that pain management protocols and pain intensity varied greatly, particularly during the initial two postoperative days. Differences in pain intensity were greatest the first postoperative night, with mean visual analog scores ranging from 17 to 94 mm on a 100-mm scale. Combined use of periarticular infiltration and femoral nerve blocks provided better analgesia than other methods during the first two postoperative days. Furthermore, patients

who had either periarticular injection along with a femoral nerve block, or epidural analgesia, reported being most satisfied two weeks after TKA.

Perioperative management of TKA pain has evolved rapidly in recent decades. Before the1990s, nurse-administered systemic opioid was practically the only analgesic approach. Nurse-administered opioids were gradually replaced by patient-controlled opioids (PCA) in 1990s. Soon thereafter, epidural analgesia became more common. In early 21st century, peripheral nerve blocks and peri-articular local anesthetic infiltration gained popularity.[4, 7, 8] In recent decades, there has been great interest in defining the optimal peripheral nerve block and periarticular (and intra-articular) local anesthetic infiltration techniques — although the best approach remain unclear. Multimodal analgesia (that is, combining a peripheral nerve block with peri-articular local anesthetic infiltration or oral analgesia and pregabalin has also proven effective.

Options for peripheral nerves blocks include: lumber (psoas) plexus, femoral, sciatic, obturator, 3-in-1, fascia iliaca, and adductor canal. Each can be performed as a single injection or provided as a continuous infusion.[4]

A recent Cochrane review (2014) found that femoral nerve blocks (with or without concurrent treatments including PCA opioid) after TKA provided better analgesia than PCA opioid alone, similar analgesia to epidural blocks, and less nausea/vomiting than PCA alone or PCA with epidural analgesia.[9] The review also found that continuous femoral nerve blocks provided better analgesia than single-shot blocks. The authors did not found sufficient evidence to support definitive conclusions regarding the comparison between femoral nerve block and local infiltration analgesia or oral analgesia.[9]

Another 2014 pairwise meta-analysis evaluated the efficacy of local anesthetic infiltration versus placebo, no infiltration, or femoral nerve block. These investigators found significantly improved analgesia in the initial 24 postoperatrive hours in patients who given local anesthetic infiltration instead of placebo, but similar analgesia with local anesthetic infiltration and femoral nerve blocks.[10]

Another systematic review in 2014 evaluated the efficacy of high-volume multimodal wound (peri-articluar) infiltration (single dose or continuous infusion) versus no infiltration,

femoral nerve block, or epidural analgesia. They observed that better acute analgesia after wound infiltration, without definitive evidence that infiltration reduced opioid consumption, achievement of early milestones, or shortened hospitalization. The authors could not come to definitive conclusions regarding the precise role of individual agents or in the use of a percutaneous wound catheter for postoperative administration in providing pain relief.[11]

Finally, Anderson and Kehlet[12] conducted another systematic review in 2014 assessing the analgesic efficacy of local infiltration analgesia in TKA. They found, with sparse evidence, that local infiltration analgesia provided better analgesia than placebo, equal effect to femoral nerve block, and similar or better efficacy than epidural analgesia. Most of the assessed trials had a high risk of bias and did not use sufficient pain management protocol in the control group, which restrict firm conclusions.

Many surgeons and anesthesiologists avoid femoral nerve blocks for fear of associated motor weakness and consequent risk of patient falls. But whether femoral nerve blocks actually increase the risk of patient falls remains unclear. In a retrospective study of 2,197 patients, Wasserstein et al.[13] found only that a continuous femoral nerve block, but not single shot block, was an independent risk factor for falls. In another retrospective study that involved 191,570 patients from the national Premier Perspective database, Memtsoudis et al. did not found an association between femoral nerve blocks and falls.[14]

Recently, a long-acting liposomal formulation of bupivacaine (EXPERAL®) was approved by the U.S. Food and Drug Administration for single-dose injection into the surgical site.[15] While this may seem a to be an optimal drug in TKA, a recent review found insufficient evidence to support its efficacy.[4] Furthermore, a recent retrospective study showed liposomal bupivacaine provided inferior pain control than a traditional multimodal analgesic approach in patients recovering from TKA.[16]

The gold standard for postoperative analgesia remains unclear. The optimal modality should achieve effective pain control with less opioid consumption and the best rehabilitation profile.[17] There are now more than ten competing pain management strategies for TKA. It would be prohibitively expensive and impractical to conduct a randomized trial simultaneously comparing them all. We therefore propose to compare available interventional analgesic

methods using a network meta-analysis approach. The advantage of this approach is that network meta-analysis extends the concept of the traditional meta-analysis to produce pairwise comparisons and relative treatment effects across a range of interventions.[18]

Objectives

1. To assess the available interventional pain management modalities for TKA in terms of:
    a) Efficacy: analgesia, opioid consumption, and rehabilitation;
    b) Safety: side effects and duration of hospitalization.
2. To generate a clinically useful ranking of available pain management modalities according to their efficacy and safety.

Methodology

The study registered in PROSPERO 2015: CRD42015015870. Available at: http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42015015870

Criteria for considering studies for this review

Inclusion criteria:

We will only include randomized clinical trials that evaluated pain management efficacy, quality of recovery (e.g., nausea and vomiting), and rehabilitation profile after unilateral total knee arthroplasy using any of the following interventional techniques:

1) *Neuraxial analgesia*: epidural and spinal analgesia.
2) *Peripheral nerve blocks* (single dose or continuous infusion):
    a. 3-in-1 nerve block
    b. Femoral nerve
    c. Fascia iliaca compartment block
    d. Sciatic nerve
    e. Obturator nerve
    f. Lumbar plexus (psoas) block
    g. Adductor-canal-block
3) *Intra-articular and periarticular local anesthetic infiltration.* All intra-articular, subcutaneous, and peri-articular infiltration has been referred in the literature as “local anesthetic infiltration”.
4) *Auricular acupuncture;* although it is considered non-invasive, but we intended to include it as it is an interesting growing eastern pain management modality.
5) *Intravenous patient control analgesia (PCA)*
6) *Placebo* (systematic opioid will be considered placebo when not given via PCA).

Exclusion criteria:

1) Oral pain medications.
2) Retrospective studies, case reports, case series, abstracts, pilot studies, and non-randomized prospective studies.
3) Arthroscopy.
4) Studies that included both knee and hip patients, without separate presentation of the results for each.
5) Combinations of more than one intervention category: epidural with peripheral nerve block, epidural with local infiltration, or peripheral nerve block with local infiltration. The combination of more than one intervention from the same category (e.g., femoral with sciatic nerves blocks) is not an exclusion criterion.

We assume that patients who meet inclusion criteria are, in principle, equally likely to be randomized to any of the eligible interventions as a starting point. We will also explore deviations from this assumption.

Type of outcome measures:

- **Primary outcomes:** (1) acute postoperative pain (during rest and movement); (2) intra- and post-operative opioid consumption; and, (3) quality of early postoperative rehabilitation (functional assessments).
- **Secondary outcomes:** postoperative complications (e.g., nausea, vomiting, falls), duration of hospitalization, amount of blood loss, incidence of procedure failure, and patient withdrawal.

Definition of relevant outcome

1. Postoperative acute pain during hospitalization.
2. Intraoperative and postoperative opioid consumption during hospitalization.
3. Postoperative nausea and vomiting during hospitalization.
4. Duration of hospital stay; usually counted after discharge from post-anesthesia care unit (PACU).
5. Patient satisfaction

6. Blood loss
7. Complications; e.g., nausea, vomiting
8. Incidence of postoperative in-hospital falls
9. Quality of early rehabilitation which can include any of the following validated physical-performance-based measures:[19]
    a) Range of motion (ROM): these might be reported as continuous or dichotomous variables. ROM is a measure of combined flexion/extension of the operated knee, either actively or passively with assistance. Ninety degrees is considered the minimum range required to navigate steps, while 110 degrees is necessary for adequate performance of activities-of-daily-living (ASLs). Typically, range is measured with a goniometer.
    b) Quadriceps strength (QS): Strengh is typically measured with an electromechanical dynamometer, and often reported as maximum voluntary isovolumetric contraction (MVIC) in Newtons normalized to body mass index.
    c) Six-minute walk test (6MWT): the maximum distance ambulated on level ground (in meter) with standardized encouragement.
    d) Timed Up and Go (TUG): the time taken to stand up from a standard-height armchair, walk 3 meters, walk back to the chair, and sit down. It is meant to assess patient's balance and risk of falling.
    e) Stair time (ST): the time necessary to ascend and descend standard-height 20-cm steps.
    f) Self-paced walk test (SPWT): timing patients walking a 20-meter course bi-directionally.

    Since there is no currently evidence to show superiority for any of these measures over others, and we are not sure how consistent the studies are reporting them, we will ultimately use the ones most commonly reported to reflect the quality of early rehabilitation. If comparably reported, we will use ROM as the main parameter.

Reporting functional outcomes after TKA:

Choi et al. did a systematic review to assess the quality of reporting functional outcome assessment after TKA in patients underwent regional anesthesia.[19] Table 1 summarizes their findings.

Two broad categories are commonly used to assess functional outcome (rehabilitation) after TKA:[19] (1) Physical-Performance Measures which includes Range of Motion, Quadriceps Strength, Six-Minute Walk Test, Timed Up and Go, Stair Time, and Self-paced Walk Test; and, (2) Self-reported Measures which includes Western Ontario and McMaster Universities Osteoarthritis Index, Knee Outcomes Severity Score, and the Lower-Extremity Functional Scale.

Choi et al.[19] defined the appropriate duration of functional outcome evaluation into early (initial 2 weeks), intermediate (6-12 weeks), and late (6-12 months) — and recommended that specific tests to be included for each period. They identified only two studies that reported long-term functional outcomes per their specifications and will thus limit our evaluation of rehabilitation to the early period. To the extent practical, we will focus on the tests that Choi et al. recommend.

Functional Outcome	Suggested Assessment Intervals	Minimal Detectable Change	Time to Administer	Usage Restrictions	Comments
Physical-performance–based outcomes					
ROM	Preoperative, 2 and 12 wk, 6 and 12 mo	9.6 degrees	<1 min	None	• Encompasses both flexion and extension • Minimum range to navigate steps 90 degrees, ADLs 110 degrees • Measurement error 5 degrees • Maximal change ~12 wk, maximum range ~12 mo
MVIC	Preoperative, 4 wk; 3, 6, 12, 24 mo	0.33 N · m/kg	1 min	None	• Greatly reduced immediate postoperative period (~62%) • Continued dysfunction up to 2 y postoperatively
6MWT	Preoperative, 6 and 12 wk, 6 mo	61.3 m	6 min	None	• 300 m required to perform ADL • Maximal change between wk 6–9 with plateau at 26 wk
TUG	Preoperative, immediate postoperative period, 6 and 12 wk	2.5 s	<2 min	None	• Assesses balance and risk of falls • Independent <10 s, able to perform ADL <20 s, mostly dependent >30 s • Best utilized as a categorical variable
ST	Preoperative, 6 wk	5.5 s	<2 min	None	• Not routinely administered immediately postoperatively • Increases >100% at <1 wk
SPWT	Preoperative, 6 wk	4.0 s	<5 min	None	• More easily completed by patients in the immediate postoperative period than 6MWT
Self-report–based outcomes					
WOMAC	Preoperative, 6 and 12 wk, 6 and 12 mo	9.1 points	12 min	Adults	• Reported in three subsections (pain, stiffness, functional limitation) or summated with maximum total score of 96 • Available in > 90 languages • Greatest change wk 9–13 postoperatively
KOOS	Preoperative, 6 and 12 mo	10 points*	10 min	Adults	• Five subsections (pain, symptoms, ADL, sports, QOL) each with a maximum score of 100 • Incorporates WOMAC • Superior to WOMAC in young (<60 y), active patients • Available in 45 languages • Most sensitive to change between 6 and 12 mo
LEFS	Preoperative, 6 and 12 wk, 6 mo	9 points*	5 min	Adults	• Comparable validity and reliability to WOMAC • Maximal change between 4 and 12 wk • Plateaus at 6 mo

*Minimal clinically significant difference.MVIC indicates maximum voluntary isovolumetric contraction (quadriceps strength); OA, osteoarthritis; QOL, quality of life.

Table 1. Functional outcome measures validated for use after TKA. From Choi et al.[19]

Search strategy:

The search will be conducted as recommended by the (ISPOR) International Society for Pharmacoeconomics and Outcomes Research 2011 Task Force.[20]

The following databases will be searched: MEDLINE via PubMed, Embase, the Cochrane Library, and Web of Science's Core Collection (excluding MEDLINE) and SciELO Citation Index. The search will not be limited by language or date. We will search www.clinicaltrials.gov for ongoing studies and contacted the authors of the ongoing studies. We will also search the major anesthesiology and orthopedic journals for online first publications after the date of conducting the literature search.

The following search terms will be used:

PubMed:

(((((Arthroplasty, Replacement, Knee[mesh]) OR Knee replacement*) OR Knee arthroplast*))) AND (((Injections, Intra-Articular[mesh] OR Femoral Nerve[mesh] OR Nerve Block[mesh] OR Sciatic Nerve[mesh] OR Lumbosacral Plexus[mesh] OR Analgesia, Epidural[mesh] OR Analgesia, Patient-Controlled[mesh] OR Obturator Nerve[mesh] OR Acupuncture, Ear[mesh] OR Anesthesia, Local[mesh] OR Anesthetics, Local[mesh] OR Analgesics[mesh] OR Analgesia[mesh])) OR (Peri articular injection* OR Periarticular injection* OR "Local infiltration analgesia" OR "Local anesthetic infiltration analgesia" OR "Local infusion analgesia" OR "Local infiltration" OR Femoral nerve block* OR Femoral catheter* OR Adductor canal block* OR Sciatic nerve block* OR Three in one block* OR Three in one femoral nerve block* OR 3 in 1 nerve block* OR Lumbar plexus block* OR Lumbosacral plexus block* OR Lumbar plexus nerve block* OR Lumbar plexus infusion* OR Lumbar plexus catheter* OR "Epidural analgesia" OR "Patient controlled analgesia" OR Fascia iliaca compartment block* OR Obturator nerve block* OR "Auricular acupressure" OR "Auricular acupuncture" OR "Local anesthesia" OR Local anesthetic* OR Local anaesthe* OR Analgesic* OR Regional analgesia* OR "Regional analgesia/anesthesia" OR "Regional analgesia/anaesthesia" OR "Regional analgesia anesthesia" OR "Regional analgesia anaesthesia" OR Peripheral nerve block* OR Spinal anesthe* OR Spinal anaesthe* OR Opioid analgesia*)).

Cochrane Library search available at: http://onlinelibrary.wiley.com/cochranelibrary/search/advanced/shared/searches/142275716657723064 96

Web Of Science:

"Peri articular injection*" OR "Periarticular injection*" OR "Local infiltration analgesia" OR "Local anesthetic infiltration analgesia" OR "Local infusion analgesia" OR "Local infiltration" OR "Femoral

nerve block*" OR "Femoral catheter*" OR "Adductor canal block*" OR "Sciatic nerve block*" OR "Three in one block*" OR "Three in one femoral nerve block*" OR "3 in 1 nerve block*" OR "Lumbar plexus block*" OR "Lumbosacral plexus block*" OR "Lumbar plexus nerve block*" OR "Lumbar plexus infusion*" OR "Lumbar plexus catheter*" OR "Epidural analgesia" OR "Patient controlled analgesia" OR "Fascia iliaca compartment block*" OR "Obturator nerve block*" OR "Auricular acupressure" OR "Auricular acupuncture" OR "Local anesthesia" OR "Local anesthetic*" OR "Local anaesthe*" OR "Analgesic*" OR "Regional analgesia*" OR "Regional analgesia/anesthesia" OR "Regional analgesia/anaesthesia" OR "Regional analgesia anesthesia" OR "Regional analgesia anaesthesia" OR "Peripheral nerve block*" OR "Spinal anesthe*" OR "Spinal anaesthe*" OR "Opioid analgesia*"

EMBASE strategy:

MeSH headings (for PubMed)	**"translation" to EMBASE Subject Headings**
Arthroplasty, Replacement, Knee	knee arthroplasty/ or total knee replacement/
Injections, Intra-Articular [auto-explosion]	intraarticular drug administration/ or intrasynovial drug administration/
Femoral Nerve	femoral nerve/
Nerve Block [auto-explosion]	nerve block/ or brachial plexus anesthesia/ or ganglion block/ or intercostal nerve block/ or lumbar plexus block/ or paracervical block/ or retrobulbar anesthesia/ or stellate ganglion block/ or transversus abdominis plane block/
Sciatic Nerve [auto-explosion]	sciatic nerve/
Lumbosacral Plexus [auto-explosion]	lumbosacral plexus/
Analgesia, Epidural	epidural anesthesia/ or caudal anesthesia/ or continuous epidural anesthesia/ or thorax epidural anesthesia/
Analgesia, Patient-Controlled	patient controlled analgesia/
Obturator Nerve	obturator nerve/
Acupuncture, Ear	acupuncture/ or acupressure/ or acupuncture analgesia/ or catgut embedding/ or electroacupuncture/ **AND** ear/
Anesthesia, Local	local anesthesia/ or topical anesthesia/
Anesthetics, Local [auto-explosion]	local anesthetic agent/ or 1 methyl 4 phenyl 3 piperidinemethanol acetate/ or "1' [3 (diethylamino)propyl] 3,4 dihydrospiro[naphthalene 1(2h),3' pyrrolidine] 2',5' dione"/ or "3 phenyl 8 azabicyclo[3.2.1]octane 2 carboxylic acid methyl ester"/ or adrenalin hydrogen tartrate plus articaine/ or adrenalin hydrogen tartrate plus bupivacaine/ or adrenalin hydrogen tartrate plus etidocaine/ or adrenalin hydrogen tartrate plus lidocaine/ or adrenalin hydrogen tartrate plus prilocaine/ or adrenalin plus bupivacaine/ or adrenalin plus butethamine plus procaine/ or adrenalin plus lidocaine/ or adrenalin plus metabutethamine/ or adrenalin plus procaine/ or adrenalin plus pyrrocaine/ or allantoin plus benzocaine plus sulfadiazine/ or aluminum hydroxide plus magnesium trisilicate plus oxetacaine/ or amydricaine/ or amylocaine/ or articaine/ or articainic acid/ or aslavital/ or bacitracin zinc plus benzalkonium chloride plus benzocaine plus neomycin plus polymyxin b/ or bacitracin zinc plus benzocaine plus neomycin plus polymyxin b/ or bacitracin zinc plus lidocaine plus neomycin plus polymyxin b/ or benzocaine/ or benzocaine plus

	butylcaine plus tetracaine/ or benzocaine plus camphor plus methapyrilene plus zinc oxide/ or benzocaine plus cetrimide plus hexachlorophene plus mepyramine maleate/ or benzocaine plus domiphen bromide/ or benzocaine plus erythromycin glucoheptonate plus polymyxin b/ or benzocaine plus gramicidin plus neomycin/ or benzocaine plus gramicidin plus neomycin plus polymyxin b/ or benzocaine plus oxytetracycline plus polymyxin b/ or benzocaine plus phenazone plus phenylephrine/ or benzocaine plus tetracaine/ or benzocaine plus zirconium oxide/ or benzofurocaine/ or benzoxiquine plus diperodon/ or benzyl alcohol/ or benzyl alcohol plus cetylpyridinium salt/ or bucricaine/ or bumecaine/ or bupivacaine/ or bupivacaine plus glucose/ or bupivacaine plus lidocaine/ or butacaine/ or butanilicaine/ or butethamine/ or butoxycaine/ or butylcaine/ or calamine plus chlorcyclizine plus pramocaine plus zinc oxide/ or camphor plus eucalyptus oil plus gum benzoin plus menthol plus polidocanol/ or carbisocaine/ or carcainium chloride/ or ceftriaxone plus lidocaine/ or centbucridine/ or cetacaine/ or chloroprocaine/ or chloroxylenol plus hydrocortisone plus pramocaine/ or cinchocaine/ or cocaine/ or cyclomethycaine/ or cyclomethycaine plus methapyrilene/ or dexamethasone sodium phosphate plus lidocaine/ or dihydroergotamine mesilate plus heparin plus lidocaine/ or dimethocaine/ or diperodon/ or diperodon plus gramicidin plus neomycin/ or diperodon plus hydrocortisone plus neomycin plus polymyxin b/ or diperodon plus pramocaine/ or dyclonine/ or emla/ or etidocaine/ or eugenol/ or euprocin/ or euprocin plus zolamine/ or fluorescein sodium plus oxybuprocaine/ or fluorescein sodium plus proxymetacaine/ or fluress/ or fomocaine/ or gramicidin plus neomycin plus propylcaine/ or guafecainol/ or heptacaine/ or hexacycline plus lidocaine/ or hexathricin/ or hexylcaine/ or hydrocortisone acetate plus neomycin plus polymyxin b plus pramocaine/ or hydrocortisone acetate plus pramocaine/ or instillagel/ or ipravacaine/ or isobutamben/ or ketocaine/ or levobupivacaine/ or lidamidine/ or lidocaine/ or lidocaine ethobromide/ or lidocaine plus neomycin/ or lidocaine plus oxytetracycline/ or lidocaine plus polymyxin b/ or lidocaine plus rolitetracycline/ or lidocaine plus tetracaine/ or mepivacaine/ or mepivacaine plus neocobefrin/ or meprylcaine/ or metabutethamine/ or methoxamine plus procaine/ or myrtecaine/ or "n [(2,6 dimethylphenyl)carbamoylmethyl]trimethylammonium"/ or "n methyl n [2 (1 pyrrolidinyl)cyclohexyl]benzo[b]thiophene 4 acetamide"/ or neocobefrin plus procaine plus propoxycaine/ or neocobefrin plus procaine plus tetracaine/ or noradrenalin bitartrate plus procaine plus propoxycaine/ or noradrenalin plus procaine plus propoxycaine/ or noradrenalin plus procaine plus tetracaine/ or oxetacaine/ or oxybuprocaine/ or oxytetracycline plus procaine/ or oxytetracycline plus tetracaine/ or pentacaine/ or pentobarbital plus procaine/ or phenacaine/ or phenol/ or piperocaine/ or polidocanol/ or pramocaine/ or prilocaine/ or procaine/ or procaine isobutyrate/ or procaine plus tetracycline/ or propanocaine/ or propipocaine/ or propoxycaine/ or propylcaine/ or propylcaine plus tyrothricin/ or proxymetacaine/ or pseudococaine/ or pseudotropine benzoate/ or pyrrocaine/ or quinisocaine/ or ropivacaine/ or tanax/ or tetracaine/ or tolycaine/ or tricaine/ or trimecaine/ or xyloproct/ or zolamine/
Analgesics [auto-explosion]	analgesic agent/ or "(5 tert butyl 2,3 dihydro 1h inden 1 yl) 3 (1h indazol 4 yl)urea"/ or "1 (2 bromophenyl) 3 [1 (5

	trifluoromethyl 2 pyridinyl) 3 pyrrolidinyl]urea"/ or "1 (2,3 dichlorobenzoyl) 5 methoxy 2 methyl 3 (2 morpholinoethyl)indole"/ or "1 (3 cyclohexylpropionyl) 4 (2 ethoxyphenyl)piperazine"/ or "1 (3 pyridinyl) 3 pyrrolidinamine"/ or "1 [2 (3,3 dimethylbutyl) 4 (trifluoromethyl)benzyl] 3 (1 methyl 4 indazolyl)urea"/ or "2 [5 (4 dimethylsulfamoylphenyl) 6,7,8,9 tetrahydro 8 methyl 2 oxo 1h pyrrolo[3,2 h]isoquinolin 3 yliminoxy] 4 hydroxybutyric acid"/ or "2 amino 6 (4 fluorobenzylamino) 3 pyridinecarbamic acid allyl ester"/ or "3 (2 bromophenyl)octahydroindolizine"/ or "3 (difluoromethyl) 1 (4 methoxyphenyl) 5 [4 (methylsulfinyl)phenyl]pyrazole"/ or "3 [[5 (2,3 dichlorophenyl) 1h tetrazol 1 yl]methyl]pyridine"/ or "4 amino 5 (3 bromophenyl) 7 (6 morpholino 3 pyridinyl)pyrido[2,3 d]pyrimidine"/ or "4 chloro n (3 methoxyphenyl)cinnamamide"/ or "5 [[(3 phenoxybenzyl)(1,2,3,4 tetrahydro 1 naphthyl)amino]carbonyl]trimellitic acid"/ or "8 chloro n2 [3 (furfurylthio)propionyl]dibenz[b,f][1,4]oxazepine 10(11h) carbohydrazide"/ or ajulemic acid/ or anbesol/ or anpirtoline/ or antinociceptive agent/ or antipyretic analgesic agent/ or antrafenine/ or auralgan/ or axomadol/ or befiradol/ or bicifadine/ or brivaracetam/ or bromadoline/ or bromadoline maleate/ or capsaicin/ or cebranopadol/ or cis capsaicin/ or cizolirtine/ or crobenetine/ or dasolampanel/ or davasaicin/ or desensitizing agent/ or dimiracetam/ or dizatrifone/ or doxpicomine/ or drinidene/ or ecopladib/ or edronocaine/ or efipladib/ or embelate potassium/ or epibatidine/ or equagesic/ or ethoheptazine/ or fadolmidine/ or fasinumab/ or floctafenic acid/ or floctafenine/ or flunixin/ or flunixin meglumine/ or flupirtine/ or frakefamide/ or fulranumab/ or funapide/ or gabapentin/ or gabapentin enacarbil/ or giripladib/ or glafenic acid/ or glafenine/ or gw 493838/ or gw 842166/ or harkoseride/ or hasamal/ or ibudilast/ or indantadol/ or lappaconitine/ or letimide/ or lexanopadol/ or mavatrep/ or "n (1,4 benzodioxan 6 yl) 3 (4 tert butylphenyl)acrylamide"/ or "n (4 isopropylphenyl) 2 (1,2,3,6 tetrahydro 1,3 dimethyl 2,6 dioxo 7h purin 7 yl)acetamide"/ or n deacetyllappaconitine/ or narcotic analgesic agent/ or nefopam/ or neurotropin/ or nuvanil/ or olvanil/ or omega conotoxin cvid/ or omega conotoxin mviia/ or panidex/ or pf 3557156/ or pf 4136309/ or pf 4480682/ or pf 592379/ or pf 738502/ or pravadoline/ or pregabalin/ or ralfinamide/ or retigabine/ or ruzadolane/ or sampirtine/ or senrebotase/ or short acting analgesic agent/ or strascogesic/ or tanezumab/ or tazadolene/ or tazadolene succinate/ or tebanicline/ or traxoprodil/ or tylox/ or vedaclidine/ or xen 402/
Analgesia [auto-explosion]	analgesia/ or acupuncture analgesia/ or antinociception/ or diffuse noxious inhibitory control/ or electroanalgesia/ or hypoalgesia/ or interpleural analgesia/ or neuroleptanalgesia/ or obstetric analgesia/ or patient controlled analgesia/ or postoperative analgesia/

ClinicalTrials.gov search available at:

https://clinicaltrials.gov/ct2/results?term=Knee+Arthroplasty&cond=pain

Selection of studies: Two independent authors will screen the resultant search for eligible studies. The studies selections and the data collections will be done after multiple calibration exercises.

Assessment for risk of bias

Two independent authors will assess the risk of bias for each study using the Cochrane Collaboration's risk of bias assessment tool.[21] A third reviewer will adjudicate disagreements.

The areas that will be evaluated are:

- *Random sequence generation*: Was there adequate sequence generation (selection bias)?
- *Allocation concealment*: Was allocation adequately concealed (selection bias)?
- *Blinding*: Was knowledge of the allocated intervention adequately prevented during the study (detection bias)?
    - Participants and personnel
    - Outcome assessors
- *Incomplete outcome data*: Were incomplete outcome data adequately addressed (attrition bias)?
- *Selective outcome reporting*: Are reports of the study free of possible selective outcome reporting (reporting bias)?

We will evaluate the aforementioned items within each study, and in each pairwise comparison. We will classify each piece of direct evidence in the network as having low, moderate, or high risk of bias. If significant discrepancies are found between treatment comparisons, we will illustrate these assessments in the network plot for the primary outcome with colored edges according to the risk of bias.[22] We will also produce the contribution matrix which gives the percentage contribution of each direct estimate to the network meta-analysis estimates.[23] This will help to delineate the contribution of direct and indirect evidence to each network meta-analysis estimate.

Data collection

Data extraction and management

Using a standardized data collection form, four researchers will review and extract data from the filtered articles. We will collect the following data: first author; year of publication; study title; journal; study country and language; randomization (e.g., parallel, or crossover); type of intervention with details on each group; number of patients in each group; demographic characteristics of each group; whether patients on chronic opioid use were included or not and their number; anesthesia, analgesia, and anti-emetic protocol used; technique of surgery; pain scores at rest and movement; intraoperative and postoperative opioid consumption; in-hospital rehabilitation profile; incidence of fall, nausea, and vomiting; duration of hospital stay; and Cochrane Collaboration's risk of bias assessment.

Data extraction:

A team from four investigators will extract the data independently. Two investigators will extract data from each article, independently, and a third investigator will confirm the extracted data.

Pain scores are usually presented in a numeric rating scale (NRS), ranging from 0 to 10, but it may, less frequently, presented as visual analogue scale (VAS), ranging from 0 to 100, in this situation we will convert the VAS to NRS by dividing the results by 10.

Opioids will be converted to morphine equivalent in mg using a standardized conversion calculator http://clincalc.com/Opioids/.

If the pain scores and opioid consumptions are not reported numerically, they will be estimated from manual measurements of the corresponding figures.

For studies in which incidences of nausea and/or vomiting is not reported separately, but reported as incidences of postoperative nausea and vomiting (PONV), we will consider PONV to represent the nausea incidence since nausea is about ten times as common as vomiting, and vomiting without concomitant nausea is rare. In studies in which the number of anti-emetics used is reported instead of incidences of nausea and/or vomiting, we will use that as the incidences of vomiting.

Data analysis

Measures of treatment effect

We will estimate the pairwise relative treatment effects of the competing interventions using standardized mean differences (SMD) for continuous outcomes and odds ratios (OR) for dichotomous outcomes. Effect sizes will always be accompanied by 95% confidence intervals.

Results from NMA will be presented as summary relative effect sizes (SMD or OR) for each possible pair of treatments. We will interpret the results and place confidence in the output of the network meta analysis using the methods suggested by Salanti et al.[24] that are based on the methodology developed by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group for pairwise meta-analyses.

Relative treatment ranking

We will estimate the ranking probabilities for all treatments of being at each possible rank for each intervention using the *network* command in STATA.[25] We will obtain a hierarchy of the competing interventions using rankograms.[26] We use the surface under the cumulative ranking curve (SUCRA) and mean ranks to obtain a treatment hierarchy.[22] We will produce the relevant plots using the suite of STATA commands by Chaimani et al.[22]

Unit of analysis issues

We expect that some studies will not report mean values and standard deviations (SD) but instead report quintiles or similar measures. If a study reports the median, minimum, and maximum values, we will use the methodology from Hozo et al.[27] to estimate the respective mean and SD of the study population. We will include also studies that report the median and the interquartile range (IQR), assuming that data are normally distributed and the standard deviation would be SD=IQR/1.35 with the mean equaling the median. However, reporting of medians and IQRs usually indicates a non-normal data distribution.[28] We will therefore repeat the analysis excluding these studies as a sensitivity analysis for the main network.
If we find studies reporting effect sizes but not standard deviation, we estimate the unreported standard deviation, if possible, using the methods found in the Cochrane Handbook.[28]
Similarly, if means and sample sizes are reported in each arm, but not the standard deviations,

we will estimate the standard deviations, if possible, using the methodology described in the Cochrane handbook.[28]

Studies with multiple treatment groups

We will take into account the correlations between effect sizes measured within a single trial.

Assessment of reporting biases

For each pairwise comparison that includes at least 10 trials, we will draw contour-enhanced funnel plots and compute Egger's test to test visually and statistically for small-study effects.[29] For these comparisons we will draw contour-enhanced funnel plots to distinguish small study effects from publication bias.[30] We will also draw a comparison-adjusted funnel plot to explore for small study effects assuming that small study effects favor the novel treatment.[22]

Dealing with missing data

Missing data and dropouts will be assessed in all included studies. Details and characteristics of dropouts will be investigated and reported. We will explore if reasons for missing data are related to the actual outcome and if missing data are balanced in the intervention arms. If it appears that data may not be missing-at-random, we will use pattern mixture models to allow for uncertainty in the summary estimate due to missing data.[31]

Assessment of clinical and methodological heterogeneity within treatment comparisons

There are three different types of heterogeneity, namely clinical, methodological, and statistical.[32] To evaluate the presence of clinical heterogeneity we will generate descriptive statistics for trial and study population characteristics across all eligible trials that compare each pair of interventions. We will assess the presence of clinical heterogeneity within each pairwise comparison by comparing these characteristics (mentioned in details on the "Investigation of heterogeneity and inconsistency via subgroup analysis and meta-regressions" section). We will assess methodological heterogeneity by evaluating the design of the studies. Statistical heterogeneity refers to differences in true effect sizes.

Assessment of transitivity across treatment comparisons

Although participants are randomized within a study, treatment strategy comparisons are not randomized across studies. We assume that an intervention is missing from a trial for reasons not associated with its relative effectiveness and any patient that meets the inclusion criteria is, in principle, equally likely to be randomized to any of the eligible interventions.[33] This is a key assumption in network meta-analysis called transitivity. It states that we can genuinely learn about the relative effectiveness between two treatments via an indirect route.

If, for example, the treatments “femoral nerve block” and “peri-articular infiltration” are both directly compared to “epidural analgesia”, then we can assess “femoral nerve block” vs. “peri-articular infiltration” indirectly through “epidural analgesia”. This assumption is that “epidural analgesia” is similar when it appears in “epidural analgesia” vs. “femoral nerve block” and “epidural analgesia” vs. “peri-articular infiltration” trials, and also that the distribution of effect modifiers is similar in “epidural analgesia” vs. “femoral nerve block” and “epidural analgesia” vs. “peri-articular infiltration” trials.

The assumption of transitivity will be evaluated for all treatment comparisons. Specifically, we will assess the transitivity assumption by comparing the distribution of the potential effect modifiers across various pairwise comparisons. We suspect that year of study publication and sample size of the trial will be effect modifiers, and we will explore whether the distribution of these potential modifiers differs across treatment comparisons. We will assume that the most common treatment (epidural analgesia, in this example) used for indirect comparisons is itself similar when it appears in different trials.

Data synthesis

Methods for direct treatment comparisons

We will conduct pairwise meta-analyses in STATA, using random effects models[34] for each treatment comparison with at least two studies.

Methods for indirect and mixed comparisons

We will use network meta-analysis to compare various pain management interventions for TKA. Network meta-analysis synthesizes both direct and indirect evidence, estimates the relative effectiveness amongst pairs of interventions, even if specific interventions have never

been compared directly in RCT's, and provides a ranking of interventions.[35-38] For example, femoral nerve block vs. epidural analgesia, direct evidence would be provided by trials directly comparing these two interventions whereas indirect evidence would be provided by an indirect path linking these two treatments.

By combining direct and indirect evidence we obtain estimates with increased precision. We will perform network meta-analysis in STATA using the *network* command[25] and self-programmed STATA routines available at http://www.mtm.uoi.gr/index.php/stata-routines-for-network-meta-analysis.[22]

Assessment of statistical heterogeneity

Assumptions when estimating heterogeneity

In standard pairwise meta-analyses, we assume different heterogeneity estimates for different comparisons. In network meta-analysis we assume that heterogeneity is the same for all treatment comparisons. We estimate heterogeneity using restricted maximum likelihood both in pairwise and network meta-analysis.

Measures and tests for heterogeneity

We will assess statistical heterogeneity visually by inspecting the forest plot for each pairwise comparison. We will compute the I^2 index and the chi-square statistic within each pairwise comparison.[39] Both these two measures can be unreliable and the chi-square statistic has low power to detect heterogeneity. For dichotomous outcomes, we will compare the estimated values for heterogeneity to their empirical distribution derived by Turner et al.[40]

Assessment of statistical inconsistency

Local approaches for evaluating inconsistency

To evaluate the presence of inconsistency locally [i.e., within a specific closed loop of evidence (e.g. if there are studies comparing A vs B, B vs C and A vs C then treatments A, B and C form a closed loop of evidence)] we will use the loop-specific approach.[41] This method evaluates the

consistency assumption in each closed loop of the network separately as the difference between direct and indirect estimates for a specific comparison in the loop (inconsistency factor). Then, the magnitude of the inconsistency factors and their uncertainty expressed by 95% confidence intervals are used to infer about the presence of inconsistency in each loop. We will assume a common heterogeneity estimate within each loop.[42] We will present the results of this approach graphically in a forest plot using the *ifplot* command in STATA.[22] We will use the node-splitting approach to evaluate if there is a difference, particular comparison, between 'direct' and 'indirect' evidence.[43]

Global approaches for evaluating inconsistency

We will use the 'design-by-treatment' model as described by Higgins and colleagues to check the assumption of inconsistency in the entire network for each outcome.[44] This method accounts for different source of inconsistency that can occur when studies with different designs (two-arm trials vs. three-arm trials) give different results as well as disagreement between direct and indirect evidence. The design-by-treatment model will be performed in STATA using the *mvmeta* command.

Investigation of heterogeneity and inconsistency via subgroup analysis and meta-regressions

If we find important heterogeneity or/and inconsistency, we will explore possible sources. If sufficient studies are available, we will perform meta-regression or subgroup analyses for the primary outcome by using the following effect modifiers as possible sources of inconsistency and or heterogeneity:

1. Year of publication: older studies were done at the time where more invasive surgical techniques were used.
2. Patients age
3. Patients gender
4. Surgical technique (minimal invasive versus standard): minimally invasive surgery (MIS) total knee arthroplasty (TKA) approaches were introduced as an alternative approaches than the standard TKA approach. These include; the limited

parapatellar, limited midvastus, limited subvastus, and quadriceps-sparing approaches.[45]

5. Whether the study was funded or not, and whether it was founded by a pharmaceutical company.
6. Duration of hospitalization, which might be shorter in hospitals with fast-track discharge protocols.[46]
7. Variations in the drug type, dose, concentration that used
8. Whether or not non-local anesthetic drugs were used as an adjuvants in the mixture of the medications (e.g., opioids, ketamine)
9. The use of concomitant analgesic regimen (e.g., nonsteriodal anti-inflammatory drugs, acetaminophen, or gabapentin)
10. Type of anesthesia: general (total intravenous anesthesia vs. volatile anesthesia with or without nitrous oxide), and neuroaxial anesthesia (spinal vs. epidural).
11. Preoperative chronic pain treated chronically with opioids.
12. Whether the procedure is for the first or second knee in staged bilateral total knee arthroplasty. Recent study suggest that patients having staged bilateral TKA experience more postoperative pain with the second procedure, perhaps because of hyperalgesia extending beyond the initial injury site and/or central sensitization.[47]

Sensitivity analyses

For the primary outcome and the main network we will repeat the analysis excluding those studies that are at high or unclear risk of bias. If there are large missing rates and suspicions that data are missing not at random, we will apply pattern mixture models to account for missing outcome data.[31] We will also repeat the analysis including studies with bilateral one-stage total knee arthroplasy.

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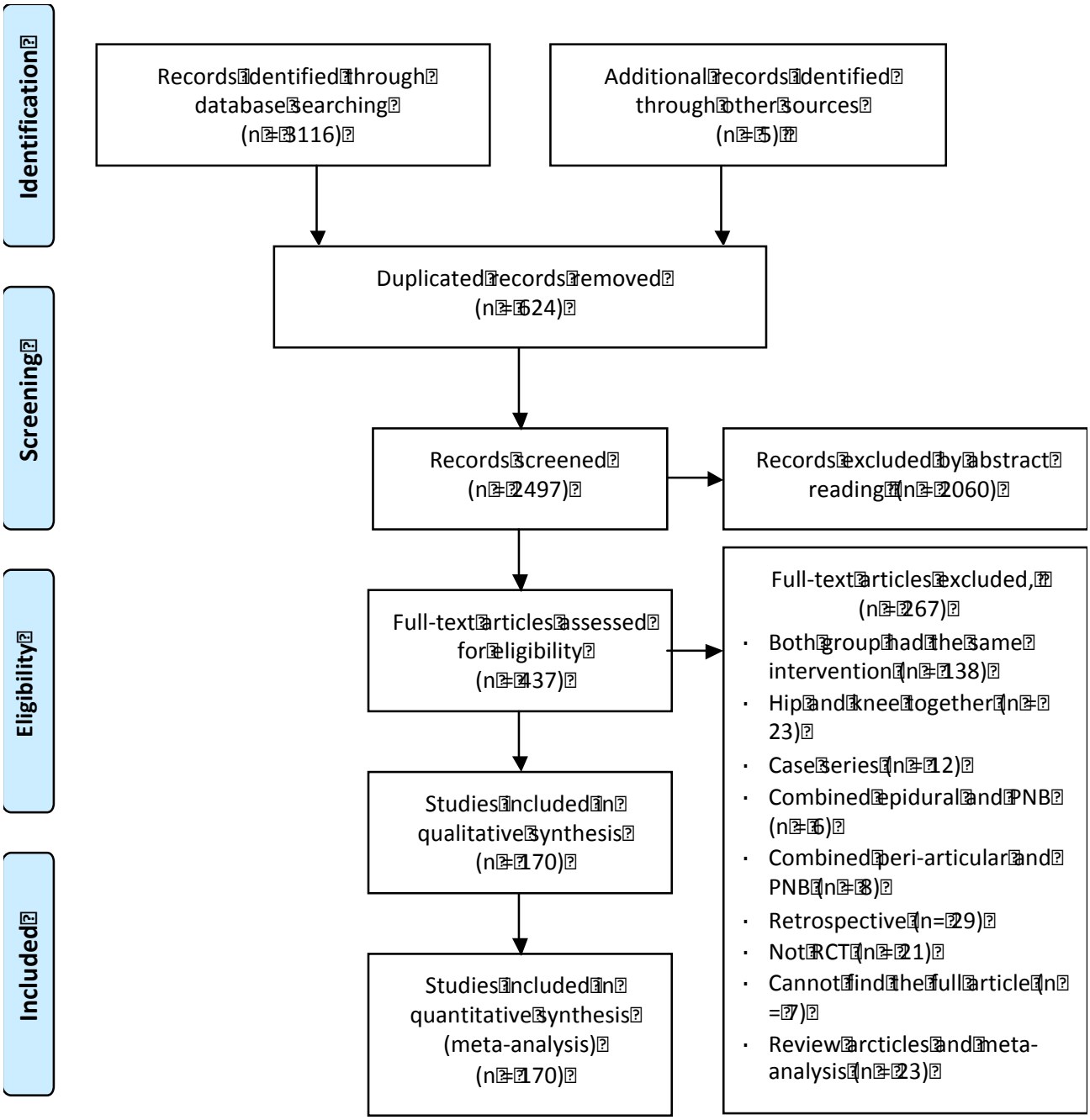
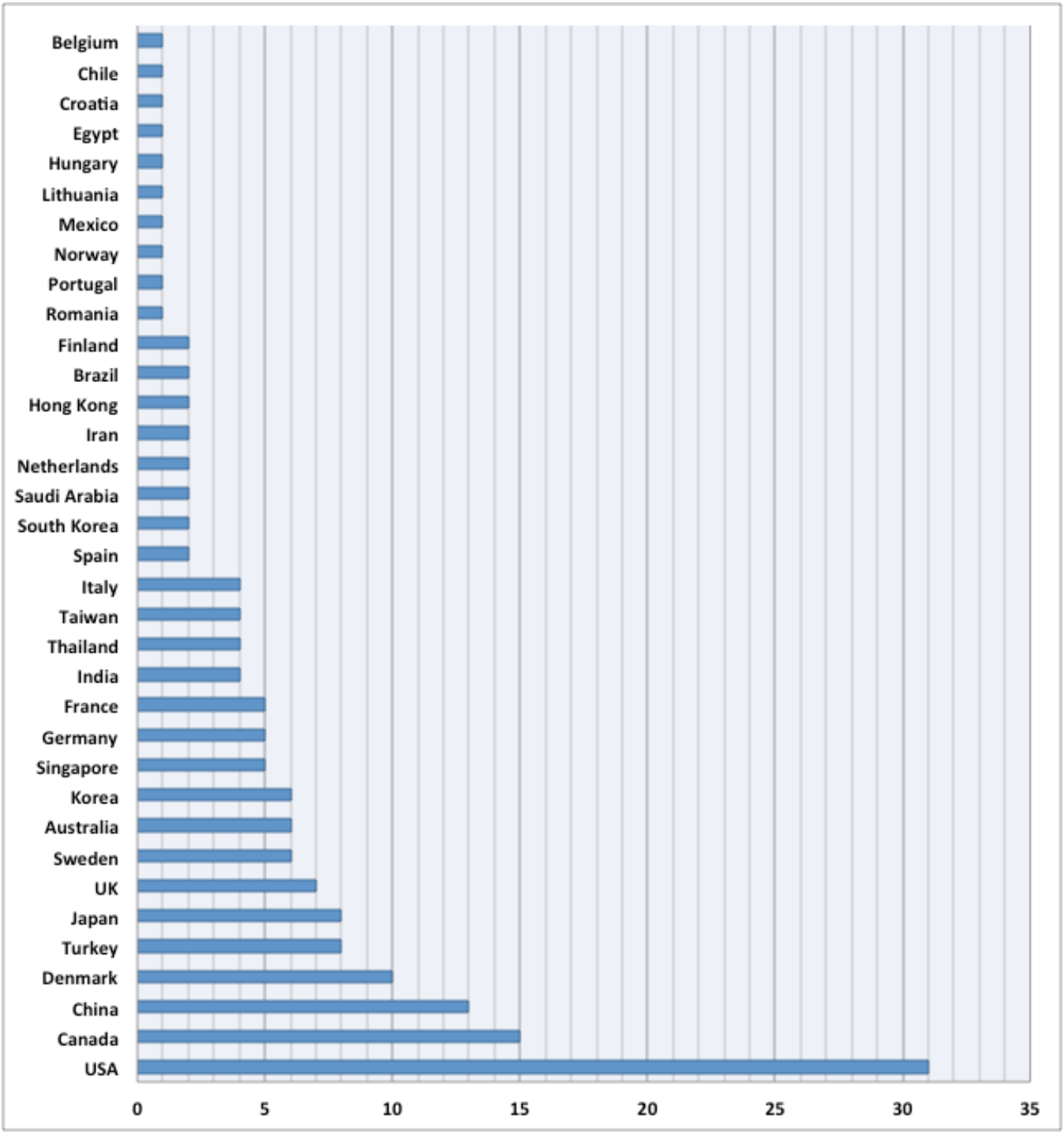
PRISMA flow diagram



Countries were studies conducted



Countries contributing to the included trials, data presented as number.

Studies characteristics: pain management description among included randomized controlled trials.						
ID	**Authors (year)**	**Management description**	**Type of Anesthesia**	**Adjuvant analgesia**		
				Opioids	**NSAIDs**	**Gabapentin / others**
1	Raj P (1987)	**Group A (15 patients):** Placebo; received conventional parenteral narcotics; morphine or meperidine **Group B (15 patients):** Epidural - started before surgery; Infusions were started with 0.25% bupivacaine at an infusion rate of 6-15 ml/hr.	GA (volatile)	Yes	No	No
2	Nielsen P (1989)	**Group A (11 patients):** Epidural - started after surgery; Mepivacain 2% with morohine (2-6mg) three times daily **Group B (11 patients):** Placebo; Systematic IM Ketobemidon (5-7.5mg four times daily and 5-7.5mg as required)	GA (volatile)	No	Yes	No
3	Pettine K (1989)	**Group A (14 patients):** Placebo; meperidine 1mg/kg + hydroxyzine HCl 25mg IM every 3 to 4 hr or Acetaminophen with codeine (Tylenol) 30mg PRN **Group B (14 patients):** Epidural; 0.125% bupivacaine at rate of 10ml/hr	Epidural Anesthesia	Yes	Yes	No
4	Mahoney O (1990)	**Group A (43 patients):** Placebo; systemic opioids **Group B (62 patients):** Epidural; boluses of 2-6 mg of morphine as needed **Group C (57 patients):** Epidural; continuous bupivacaine with duramorph	NA	Yes	NA	No
5	Serpell M (1991)	**Group A (13 patients):** Femoral nerve block using a nerve stimulator -- After the end of surgery; A dose of 0.3 ml/kg 0.5% bupivacaine with Epi was administered in 5-ml increments. Top-ups of the same dose of bupivacaine at 6-8 hour intervals during the next 48 hours. **Group B (16 patients):** PCA; Morphine in 2-mg intravenous boluses to a maximum of 12 mg/hour with a lockout interval of 9 minutes. If pain relief was inadequate, intramuscular morphine 10 mg or paracetamol 1 g orally was administered.	Spinal Anesthesia (with sedation)	Yes	Yes	No
6	Edwards N (1992)	**Group A (18 patients):** Placebo; All patients received IM papaveretum (10-20 mg every 4 h) was prescribed to be given on patient request. **Group B (19 patients):** Femoral; 3-in-1 nerve block (continuous infusion), before surgery, Initially, 30 mL of 0.25% bupivacaine was injected into the catheter to obtain a 3-in-1 block. This was immediately followed by an infusion of 0.125% bupivacaine at 6 mL/h, which was then continued into the postoperative period for 24 h.	GA (volatile + Nitrous oxide)	Yes	No	No

7	Sharrock (1994) Bilateral TKA	**Group A (26 patients):** Epidural; Bupivacaine 0.5% and Fentanyl 10 mcg/ml at 3-5 ml/hr for 36 hr, with boluses of 2 ml as needed **Group B (25 patients):** Placebo; Fentanyl 100 mcg/hr for 36 hr, with boluses of 20 to 50 as needed	Epidural Anesthesia (with sedation)	Yes - IM morphine	NA	NA
8	Badner N (1996)	**Group A (28 patients):** Periarticular; Intra-articular (single dose), before surgery, 30ml of 0.5% bupivacaine and Epi in saline solution before the skin incision was made and 30ml of plain saline solution after the wound was closed. **Group B (27 patients):** Periarticular; Intra-articular (single dose), after surgery, 30ml of plain saline solution before the incision and 30ml of 0.5% bupivacaine and Epi in saline solution after closure. **Group C (27 patients):** PCA; 30 ml plan saline before and after	GA (volatile)	Yes	No	No
9	Hirst G (1996)	**Group A (11 patients):** control group; femoral catheter normal saline infusion for 48 hr. **Group B (11 patients):** Femoral; 3-in-1 femoral nerve block, single dose, with nerve stimulator guidance with nerve stimulator guidance then catheter. 20ml of 0.5% bupivacaine with Epi then normal saline infusion for 48 hr. **Group B (11 patients):** Femoral; 3-in-1 femoral nerve block, with nerve stimulator guidance then catheter, continues infusion, 20ml of 0.5% bupivacaine with Epi followed by 0.125% bupivacaine infusion at 6 ml/hr for 48 hr	GA (volatile + Nitrous oxide)	Yes – PCA; Morphine 1.5mg, lockout interval 7min, 4-hour dose limit = 30mg	No	No
10	Williams-Russo (1996)	**Group A (81 patients):** PCA; At the first year of the study patients recieved systematic opioids then after that they had PCA in the study. **Group B (97 patients):** Epidural; Lidocaine 2% or Bupivacaine 0.75%, then infusion for 48 to 72hr. They also received systematic narcotic as needed postoperatively	GA (volatile + Nitrous oxide)	Yes	NA	NA
11	Mauerhan D (1997)	**Group A (27 patients):** PCA; 30ml Saline + PCA deliver a dose of 1 mg/mL morphine sulfate. There was a lockout time period of 5 minutes and a 4-hour limit of 30 mg/mL. Thus, the 24-hour limit was 180 mg/mL. **Group B (26 patients):** Periarticular; Morphine 5mg on 30ml saline Intra-articular injection **Group C (24 patients):** Periarticular; Bupivacaine 50mg on 30ml saline Intra-articular injection **Group D (28 patients):** Periarticular; Morphine + Bupivacaine on 30ml saline Intra-articular injection	Spinal Anesthesia	Yes - PCA	No	No
12	Allen H (1998)	**Group A (12 patients):** control group; Sham femoral (3-in-1) and sciatic block, Morphine bolus of 1 mg and a lockout interval of 10 min with no limit or background infusion. **Group B (12 patients):** Femoral block; 3-in-1 femoral nerve block, with nerve stimulator guidance with nerve stimulator guidance +	Spinal Anesthesia	Yes - PCA	Yes	No

		Sham sciatic; after surgery (single dose), Bupivacaine 0.25% 30ml with Epi. **Group C (12 patients):** 3-in-1 femoral nerve block + sciatic block, with nerve stimulator guidance with nerve stimulator guidance; after surgery, single dose. Bupivacaine 0.25% 30ml with Epi (for each block)				
13	Singelyn F (1998)	**Group A (15 patients):** PCA **Group B (15 patients):** 3-in-1 femoral block with continuous infusion, guided by nerve stimulator; before surgery. 37 mL of 0.25% bupivacaine with Epi followed by infusion of 0.125% bupivacaine with sufentanil 0.1 mcg/mL and clonidine 1 mcg/mL at the rate of 10 mL/h. **Group C (15 patients):** Epidural; Bolus of 3 mL of 0.25% bupivacaine with Epi of the same solution and 10 mcg of sufentanil were injected, followed by infusion of 0.125% bupivacaine with sufentanil 0.1 mcg/mL and clonidine 1 mcg/mL at the rate of 10 mL/h.		Yes – PCA, concentration 2 mg/mL, dose 1.5 mg, lockout 8 min	Yes	IM piritramide (DIPI), a synthetic p-agonist opioid
14	Tarkkila P (1998)	**Group A (20 patients):** spinal with intra-thecal morphine, 0.3 mg morphine **Group B (18 patients):** Femoral, infusion, nerve stimulator, 3-in-1 technique. Bupivacaine 0.25% at 0.1 mL/kg/hr until next morning	Spinal Anesthesia	NA	NA	NA
15	Capdevlla X (1999)	**Group A (19 patients):** control group; no intervention. **Group B (17 patients):** epidural; Bolus 2 mg morphine and 5-ml doses of 2% lidocaine with Epi, via the epidural catheter, until a TI0 level was determined using the pinprick method followed by infusion of 1% lidocaine, 0.03 mg/d morphine, and 2 mcg/d clonidine administered at 0.1 ml/kg/ h for 72 hr started postoperatively **Group C (20 patients):** 3-in-1 femoral nerve block, with nerve stimulator guidance then catheter. 25-ml bolus of 2% lidocaine with Epi and 2 mg morphine followed by 1% lidocaine, 0.03 mg/d morphine, and 2 mcg/d clonidine administered at 0.1 ml/kg/ h for 72 hr started postoperatively	GA (volatile + Nitrous oxide)	Yes – PCA, Morphine dose, 1 mg; lockout interval, 7 min; maximum dose, 30 mg/4 h	Yes	No
16	Ganapathy S (1999)	**Group A (20 patients):** control group; Sham femoral (3-in-1) block **Group B (20 patients):** 3-in-1 femoral nerve block, with nerve stimulator guidance then catheter; at the end of surgery. Bupivacaine 0.1% bolus of 30ml then infusion at a rate of 10 mL/h and continued for 48 h **Group C (22 patients):** 3-in-1 femoral nerve block, with nerve stimulator guidance then catheter; at the end of surgery. Bupivacaine 0.2% bolus of 30ml then infusion at a rate of 10 mL/h and continued for 48 h.	Spinal Anesthesia	Yes - PCA (Morphine dose of 1.5 mg with a lockout time of 6 min)	Yes	No
17	Klasen J (1999)	**Group A (10 patients):** control group; no intervention	Spinal	Yes – PCA Bolus	No	No

		Group B (10 patients): Epidural; Bolus of 2.5mg of morphine in 10ml then infusion with morphine **Group C (10 patients):** Intra-articular single injection, **b**olus of 1mg morphine diluted in 20ml of saline	Anesthesia	dose of 2.5mg of morphine with a lockout interval of 15min, maximum 20mg within 4 hr		
18	Ritter M (1999)	**Group A (109 patients):** Intra-articular (single dose), 10 mg of morphine (1 ml) and 9 ml of saline. **Group B (114 patients):** Intra-articular (single dose), 10 ml of bupivacaine (2.5 mg/ml) **Group C (97 patients):** control group; no intervention. **Group D (117 patients):** Intra-articular (single dose), 10 mg of morphine (1 ml) and 9 ml of bupivacaine (2.5 mg/ml)	GA (volatile)	Yes - PCA	Yes	No
19	Chelly J (2001)	**Group A (33 patients):** control group; no intervention. **Group B (29 patients):** 3-in-1 femoral (with infusion) + anterior sciatic block, both with nerve stimulator assistance; before surgery. Bolus of 15ml of 0.75% ropivacaine + 15ml of 1.5% mepivacaine then infusion with 0.2% ropivacaine at a rate of 12ml/h for 72h. **Group C (30 patients):** epidural; Bolus of 20ml of a mixture containing 2% lidocaine and 0.5% bupivacaine then infusion with 0.125% bupivacaine + 3mcg/ml of fentanyl at a rate of 10ml/h for 72 hr	GA (volatile + Nitrous oxide)	Yes – PCA 1mg doses with 5min lockout period and a maximum dose of 10mg/h	No	No
20	McNamee D (2001)	**Group A (24 patients):** control group; no intervention. **Group B (25 patients):** Femoral + Sciatic blocks with nerve stimulator guidance. 2mg/kg of bupivacaine 7.5mg/ml divided equally between the femoral and sciatic nerves. **Group C (25 patients):** Femoral + Sciatic blocks with nerve stimulator guidance. 2mg/kg of ropivacaine 7.5mg/ml divided equally between the femoral and sciatic nerves.	Spinal Anesthesia	Yes – PCA 1mg bolus of morphine with 5min lockout time	No	No
21	Tanaka N (2001)	**Group A (27 patients):** Intra-articular single injection, 5 mg morphine in 30 mL of 0.25% bupivacaine with Epi **Group B (20 patients):** control group; no intervention. **Group C (12 patients):** intra-articular injection of 5 mg morphine in 30 mL of 0.25% bupivacaine with Epi **Group D (10 patients):** control group; no intervention.	Spinal Anesthesia	Yes – PCA 1 mg/mL morphine sulfate, with a lock-out period of 6 minutes	No	No
22	Adams H (2002)	**Group A (21 patients):** 3-in-1 femoral block with nerve stimulator guidance; after surgery. Bupivacaine 0.375% solution 40ml **Group B (21 patients):** epidural; Bupivacaine 3ml 0.25% solution then bupivacaine 0.375% (1ml per 10cm body height, maximum 15ml) **Group C (21 patients):** control group; no intervention.	GA (volatile + Nitrous oxide)	Pirinitramide PCA	Yes	No
23	McNamee D (2002)	**Group A (27 patients):** Femoral + sciatic block with nerve stimulator guidance; before surgery. 15 ml ropivacaine 0.75% to each nerve.	GA (volatile + Nitrous oxide)	Yes - PCA (1 mg bolus of morphine with a 5-min lockout	No	No

		Group B (24 patients): Femoral + sciatic + obturator block with nerve stimulator guidance; before surgery. 15 ml ropivacaine 0.75% to each nerve and an obturator nerve block with 5 ml ropivacaine 0.75%		time)		
24	Wang H (2002)	**Group A (15 patients):** Femoral nerve block using a nerve stimulator, after the end of surgery. 40 mL 0.25% bupivacaine with Epi. **Group B (15 patients):** Femoral nerve block with saline and PCA.	GA (volatile + Nitrous oxide)	Yes - PCA (Morphine 1-mg doses of morphine with a 5-minute lockout period between doses)	No	No
25	Browne C (2004)	**Group A (30 patients):** Intra-articular single injection; Bupivacaine 20ml 0.5% (100mg) with Epi after capsular closure before complete wound closure. **Group B (30 patients):** Intra-articular single injection of saline		Yes - PCA and Oral		
26	Davies A (2004)	**Group A (30 patients):** Epidural at L2-3 or L3-4; before surgery. Test dose of bupivacaine 0.5%, 3 ml, a further 7 ml was administered and an infusion of bupivacaine 0.25% commenced after surgical incision **Group B (30 patients):** Single femoral (3-in-1) and sciatic blocks with nerve stimulator guidance; before surgery. 30ml bupivacaine 0.375% was used for the femoral component and 25 ml of bupivacaine 0.375% for the sciatic component.	GA (volatile + Nitrous oxide)	Yes - PCA (1 mg bolus of morphine with a lockout of 5 min)	Yes	No
27	Kaloul I (2004)	**Group A (20 patients):** control group PCA only **Group B (20 patients):** 3-in-1 femoral with nerve stimulator guidance then catheter inserted; before surgery. Bolus of 30 mL of ropivacaine 0.5% with Epi folowed by infusion of ropivacaine 0.2% at 12 mL/hr for 48 hr. **Group C (20 patients):** Lumbar plexus (Psoas) block with nerve stimulator guidance then catheter inserted; before surgery. Bolus of 30 mL of ropivacaine 0.5% with Epi followed by infusion of ropivacaine 0.2% at 12 mL/hr for 48 hr.	Spinal Anesthesia	Yes – PCA (Morphine 1 mg infused over two minutes with a five-minute lockout period) and Oral	Yes	No
28	Marcalou D (2004)	**Group A (29 patients):** 3-in-1 femoral single dose only; before surgery**.** 0.5% bupivacaine and 2% lidocaine with Epi **Group B (33 patients):** 3-in-1 Femoral + obturator single injection with nerve stimulator guidance; before surgery**.** **Group C (28 patients):** control group only PCA	GA (volatile + Nitrous oxide)	Yes – PCA (1-mg doses with a 7-min lockout period and a maximum dose of 25 mg in 4 h)	Yes	No
29	Sites B (2004)	**Group A (20 patients):** Intra-thical morphine; 250 mcg. **Group B (20 patients):** Femoral, single, ultrasound guided with nerve stimulator. 40 mL of 0.5% ropivacaine with 75 mcg of clonidine and 5 mcg/mL of Epi	Spinal Anesthesia	Yes - PCA (morphine set at a demand dose of 1 mg with a lockout interval of 6 min)	Yes	No
30	Szczukowski M (2004)	**Group A (19 patients):** Femoral block, single, with nerve stimulator guidance; before surgery. 30ml 0.5% Bupivacaine with Epi **Group B (21 patients):** Sham femoral block with saline.	GA (volatile + Nitrous oxide)	Yes - PCA (loading dose of 3 mg and the initial PCA dose of 1.5 mg, with the	Yes	No

				lockout interval of 15 minutes and a 4-hour maximum of 30 mg)		
31	Axelsson K (2005)	**Group A (15 patients):** sham epidural block **Group B (15 patients):** epidural analgesia with10-20 ml of ropivacaine (10 mg/ml) was injected incrementally followed by ropivacaine (1.25 mg/ml) + morphine 0.02 mg/ml **Group C (15 patients):** epidural analgesia with 10-20 ml of ropivacaine (10 mg/ml) was injected incrementally followed by ropivacaine 2 mg/ml + morphine 0.02 mg/ml	Epidural Anesthesia	Yes - PCA (morphine 1 mg/ml and a lockout time of 6 min)	NA	NA
32	Barrington M (2005)	**Group A (53 patients):** Femoral block with nerve stimulator guidance then catheter placed for infusion; before surgery. 25mL of bupivacaine 0.25% with Epi then infusion of bupivacaine 0.2% commenced at 0.1 mL/kg/h for 3 days **Group B (55 patients):** Combined spinal-epidural anesthetic at the L2-3 or L3-4; before surgery. Ropivacaine 0.2% plus fentanyl 4 mcg/mL commenced at 6–10 mL/h for 3 days	Spinal Anesthesia	Yes - PCA (morphine bolus of 0.05 mL/kg and a 60-min lockout period) + oral	Yes	No
33	Dang C (2005)	**Group A (14 patients):** 3-in-1 femoral block infusion; before surgery. Bolus of 15 mL ropivacaine 0.75% followed by (PCA) pump delivering ropivacaine 0.2% with a following program: 2 to 5 mL/h infusion, 10 mL bolus, and 30 minutes lock out. **Group B (14 patients):** 3-in-1 femoral + sciatic blocks with infusion; before surgery. Bolus of 15 mL ropivacaine 0.75% (for each block) followed by (PCA) pump delivering ropivacaine 0.2% with a following program: 2 to 5 mL/h infusion, 10 mL bolus, and 30 minutes lock out.	GA (volatile)	Yes - PCA	Yes	No
34	Farag E (2005)	**Group A (22 patients):** control group; received only PCA **Group B (16 patients):** Epidural analgesia; after surgery. 15 mL of 1.0% ropivacaine with Epi THEN infusion 0.2% ropivacaine at 8 up to 12 mL/h for 7 days	Spinal Anesthesia	Yes - PCA (morphine 1-mg dose, 6-minute lockout, with no basal infusion after appropriate loading)	NA	NA
35	Morin A (2005)	**Group A (30 patients):** continuous femoral nerve block; before surgery**.** Bolus of the local anesthetic solution (prilocaine 1% mixed with ropivacaine 0.75%); total of 300 mg of prilocaine 1% (30 mL) and 150 mg of ropivacaine 0.75% (20 mL) followed by a ropivacaine 0.2% infusion with 14 mL/h for 48h**.** **Group B (30 patients):** combination of continuous femoral and continuous sciatic nerve block; before surgery. Bolus of the local anesthetic solution (prilocaine 1% mixed with ropivacaine 0.75%); total of 200 mg prilocaine 1% (20 mL) and 75 mg ropivacaine 0.75% (10 mL) through each catheter followed by ropivacaine 0.2% infusion at rate of 7ml/h in each catheter for 48h **Group C (29 patients):** continuous psoas compartment block;	GA (volatile + Nitrous oxide)	Yes - PCA	Yes	No

		before surgery. Bolus of the local anesthetic solution (prilocaine 1% mixed with ropivacaine 0.75%); total of 300 mg of prilocaine 1% (30 mL) and 150 mg of ropivacaine 0.75% (20 mL) followed by a ropivacaine 0.2% infusion with 14 mL/h for 48h.				
36	Nechleba J (2005)	**Group A (16 patients):** control group; Intra-articular injection followed by infusion of saline. **Group B (14 patients):** Intra-articular injection followed by infusion; 40ml bolus of 0.25% bupivacaine Then infusion rate of 4.16 cc/hr.	NA	Yes - PCA	Yes	No
37	Busch C (2006)	**Group A (32 patients):** Peri-articulat injection (20ml into posterior aspect of the capsule and the medial and lateral collateral ligaments + 20ml into the quadriceps mechanism and the retinacular tissues + 60ml into the fat and subcuticular tissues). 400 mg of ropivacaine, 30 mg of Toradol (ketorolac), 5 mg of epimorphine, and 0.6 mL of epinephrine (1:1000) mixed with sterile normal saline solution to make up a combined volume of 100 mL **Group B (32 patients):** control group; no intervention.	Spinal Anesthesia	Yes - PCA (morphine bolus of 1.5 mg, a lock-out of six minutes, and a maximum of 15 mg/hr)		No
38	Mistraletti G (2006)	**Group A (8 patients):** control group; only PCA **Group B (8 patients):** epidural analgesia; Infusion of bupivacaine 0.1% with fentanyl 3 mcg/mL starting at the rate of 10 mL/h and adjusted if the VAS at rest was 3 or VAS at knee flexion was 4. **Group C (8 patients):** femoral and sciatic blocks with stimulating catheters; before surgery. Loading dose of lidocaine 2% with epinephrine 2.5 mcg/mL, 0.25 mL/kg, was injected in both the femoral and sciatic catheters followed by infusion ropivacaine 0.2% was administered for 48 hours; the infusion rates were initially 8 mL/h in the femoral catheter and 4 mL/h in the sciatic. Subsequent dose adjustment was performed to obtain a VAS score of 4 and the least possible motor block.	Spinal Anesthesia	Yes – PCA; Morphine incremental doses of 1 mg, with a lockout of 7 minutes	Yes	No
39	Ozen M (2006)	**Group A (15 patients):** 3-in-1 femoral nerve block with nerve stimulator guidance; before surgery. 40ml of ropivacaine 0.375%. **Group B (15 patients):** control group; no intervention.	GA (volatile + Nitrous oxide)	Yes - PCA (1 mg bolus with a 15-minute lockout period)	No	No
40	Park CK (2006)	**Group A (20 patients):** control group; no intervention. **Group B (20 patients):** Continues 3-in-1 femoral.	Spinal Anesthesia			
41	Seet E (2006)	**Group A (17 patients):** 3-in-1 femoral continuous infusion (with nerve stimulator guidance); before surgery. 0.25% bupivacaine 10 ml followed by ropivacaine 0.15% at 10 ml/hr during the first 24 hours and then at 5 ml/h during the next 24 hours. **Group B (18 patients):** 3-in-1 femoral continuous infusion (with nerve stimulator guidance); before surgery. 0.25% bupivacaine 10 ml followed by ropivacaine 0.2% at 10 ml/hr during the first 24 hours and then at 5 ml/h during the next 24 hours.	Spinal Anesthesia	Yes – PCA; concentration 1 mg/ml, on-demand bolus doses of 1 mg with a lockout period of 5 minutes and a maximum dosage of 8 mg/h	Yes	No

		Group C (20 patients): control group; no intervention.				
42	Tugay N (2006)	**Group A (8 patients):** Femoral nerve block with nerve stimulator guidance just after anesthesia induction. 40ml 0.25% Bupivacaine. **Group B (7 patients):** Femoral nerve block with nerve stimulator guidance just after surgery finished. 40ml 0.25% Bupivacaine. **Group C (8 patients):** control group; no intervention.	GA (volatile + Nitrous oxide)	Yes - PCA (1 mg morphine with a lockout period of 5 minutes)	No	No
43	Vendittoli P (2006)	**Group A (22 patients):** Peri-articlular infiltration; A 16-gauge catheter that passed through the vastus lateralis muscle was inserted into the joint (for intra-articular injection on the day after the surgery). 7.5 mL of a 10-mL ropivacaine 10.0 mg/mL sterile pack, 30 mg of ketorolac, and 0.5 mL of Epi to a 100-mL ropivacaine 0.2 mg/mL sterile pack (total of 275 mg of ropivacaine); a total of 107.5 mL of the solution, were used to infiltrate the deep tissues (collateral ligaments, posterior aspect of the capsule, quadriceps tendon, patellar tendon, fat pad, periosteum, and synovium) with the mixture. Before wound closure, the subcutaneous tissues were infiltrated with 125 mg of ropivacaine (the rest of the ropivacaine 10.0 mg/mL sterile pack [2.5 mL] plus 50 mL of another 100-mL ropivacaine 0.2 mg/mL sterile pack [a total of 52.5 mL in a 60-mL syringe]). On the first postoperative day, the vacuum drain was clamped and 150 mg of ropivacaine (15 mL of 10 mg/mL ropivacaine) was injected into the knee through the catheter, and then the catheter was removed. **Group B (20 patients):** control group; no intervention.	Spinal Anesthesia	Yes - PCA and oral opioids	Yes	No
44	Zaric D (2006)	**Group A (23 patients):** epidural analgesia; Ropivacaine 7.5 mg/mL was given in 5-mL aliquots to attain a level of analgesia at Th 10 then infusion of ropivacaine 2 mg/mL and sufentanil 1 mcg/mL **Group B (26 patients):** Femoral + Sciatic (anterior approach) with nerve stimulator guidance then catheter placed infusion for 55 hr. Bolus of 30 mL of ropivacaine 7.5 mg/mL was injected to each nerve then infusion by 2 infusers, the first containing ropivacaine 2 mg/mL and sufentanil 1 mcg/ mL, was connected to the femoral nerve catheter. The second containing ropivacaine 0.5 mg/mL was connected to the sciatic nerve catheter. Infuser volume was 275 mL, and the infusion rate was 5 mL/h	GA (volatile)	Yes - PCA (bolus of 2 mL 2 mg with a lockout period of 6 min and maximum dose 20 mg/h)	Yes	No
45	Good R (2007)	**Group A (22 patients):** Femoral nerve block with nerve stimulator guidance just after anesthesia induction. 40 mL of 0.50% bupivacaine hydrochloride with Epi **Group B (20 patients):** femoral block with saline (control group).	GA (volatile)	Yes - PCA (1 mg/h, a dosage that could be increased to a maximum of 10 mg/h)	No	No
46	Han C (2007)	**Group A (30 patients):** single peri-articular infiltration in to 10 different areas. 40 mL of 300mg Ropivacaine with Epi and morphine 5 mg and remaining saline total volume 50 mL.	Combined spinal epidural	Yes - opioid and PCA	no	No

		Group B (30 patients): single peri-articular infiltration in to 10 different areas. 40 mL of 300mg Ropivacaine with Epi and remaining NS total volume 50 mL **Group C (30 patients):** single peri-articular infiltration with saline.				
47	Kardash K (2007)	**Group A (19 patients):** Femoral nerve block with nerve stimulator guidance just after surgery finished. 20 mL bupivacaine 0.5% with Epi **Group B (20 patients):** Obturator block with nerve stimulator guidance after surgery finished. 20 mL bupivacaine 0.5% with Epi **Group C (20 patients):** Sham block	Spinal Anesthesia	Yes - PCA (fentanyl 50 g/mL set to deliver 25 g every 5 min as needed)	Yes	No
48	Mejia-Terrazas (2007)	**Group A (15 patients):** Placebo; systemic IV analgesia - infusion for 24h. Morphine 300mcg/kg/day + Parecoxib 80mg/day + Ketamine 100mcg/kg/day. **Group B (15 patients):** epidural analgesia; infusion Morphine 30mcg/kg/day + Bupivacaine 50mg at rate of 2ml/h per 24hr. **Group C (15 patients):** Femoral + Sciatic nerve stimulator guided. Ropivacaine 0.25% 1-2mg/kg single dose	Spinal Anesthesia	NA	No	No
49	Ozalp G (2007)	**Group A (34 patients):** Femoral block with catheter; at the end of surgery. 40 ml of 0.25% bupivacaine and then, as patient controlled regional analgesia, 10-ml boluses of 0.125% bupivacaine, with a lockout time of 60 min over 48 h **Group B (34 patients):** Psoas block with catheter; at the end of surgery. 40 ml of 0.25% bupivacaine and then, as patient controlled regional analgesia, 10-ml boluses of 0.125% bupivacaine, with a lockout time of 60 min over 48 h	GA (volatile)	Yes - Tramadol	No	No
50	Parvataneni (2007)	**Group A (31 patients):** Periarticular infiltration; 0.5% Bupivacaine 200-400 mg, Morphine sulfate 4-10 mg, Epinephrine, Methylprednisolone acetate 40 mg, and Normal saline 22 mL **Group A (29 patients):** Femoral, after surgery.	Spinal Anesthesia	Yes	Yes	No
51	Raimer C (2007)	**Group A (21 patients):** Combined psoas and sciatic blocks with nerve stimulator guidance then catheter infusion for 48hr postoperatively. 25 mL of 0.75% ropivacaine for the psoas block and 25 mL 1% prilocaine for the sciatic block THEN continuous infusion of 0.2% ropivacaine at a rate of 8 mL/h in each catheter. **Group B (21 patients):** epidural analgesia; infusion of 0.1% ropivacaine plus 0.5 µg/mL sufentanil at a rate of 8 mL/h. **Group B (21 patients):** control group; no intervention.	Spinal Anesthesia	Yes – PCA; piritramide (1.5 mg bolus with a lockout interval of 5 min).	Yes	No
52	Rajeev S (2007)	**Group A (15 patients):** 3-in-1 femoral + sciatic with nerve stimulation guidance. Bolus of 0.4 mL/kg followed by an infusion of 0.14 mL/kg per hour of 0.25% bupivacaine through the catheters beginning after surgery, for 48 hours (divided equally between the two blocks) **Group B (15 patients):** 3-in1 femoral with nerve stimulation	Spinal Anesthesia	Yes - pethidine	Yes	No

		guidance. Bolus of 0.4 mL/kg followed by an infusion of 0.14 mL/kg per hour of 0.25% bupivacaine through the catheters beginning after surgery, for 48 hours (divided equally between the two blocks)				
53	Toftdahi K (2007)	**Group A (37 patients):** 3-in1 femoral Winnie technique, with nerve stimulator guidance and catheter insertion; before surgery. Bolus of 20 mL ropivacaine (10 mg/mL) then infusion of 10 mL/h ropivacaine (2 mg/mL) was infused for 48 h. **Group B (40 patients):** Peri- and intra-articluar injection with catheter intra-articular for postop boluses. 150ml that contain 300 mg ropivacaine, 30 mg ketorolac, and 0.5 mg epinephrine by infiltration of the knee at the end of surgery, and 2 postoperative injections of these substances through an intraarticular catheter. The first 100 mL was given after cementing of the modular prosthesis, before installing the polyethylene part: 50 mL into the posterior part of the capsule and in the intercondylar area and 50 mL into the anterior part of the capsule, the collateral ligaments, and along the femur and tibia	Spinal Anesthesia	Yes - morphine IV and Oxycodone	Yes	No
54	Zugliani A (2007)	**Group A (8 patients):** 3-in-1 femoral nerve block with catheter for subsequent boluses. 20ml of 0.5% ropivacaine without Epi In case of pain above 3, or equal or greater than moderate pain, more than 6 hours after the femoral nerve block, 20 mL of 0.5% ropivacaine was administered through the catheter to patients in both groups **Group B (9 patients):** Femoral (3-in-1) with catheter + Sciatic. 20ml of 0.5% ropivacaine without Epi for each block	Spinal Anesthesia	Yes - IM opioid	No	No
55	Bagry H (2008)	**Group A (6 patients):** control group; no intervention **Group B (6 patients):** Lumber + Sciatic blocks, with nerve stimulator guidance and catheter insertion. Bolus of lidocaine 2% with epinephrine 2.5 mcg/mL, 0.5 mL/kg, was administered half in each catheter. For continuous postoperative analgesia, ropivacaine 0.2% was administered at a rate of 8 mL/h (lumbar plexus) and 5 mL/h (sciatic nerve) for 48 hours.	Spinal Anesthesia	Yes – PCA (1 mg of morphine, with a lockout of 7 minutes and no background infusion) + oral	Yes	No
56	Campbell A (2008)	**Group A (31 patients):** epidural analgesia for 55 hr. 4mL of 0.5% levobupivacaine was injected into the epidural space followed by infusion containing a mixture of levobupivacaine 0.125% and clonidine 1.2 mcg/ml at 6ml/hr until the second postop morning **Group B (29 patients):** Lumber block with catheter insertion under nerve stimulator guidance; a standard approach using a point 4 cm lateral to the transverse process of L4 was used to advance the needle following tissue infiltration with 5mL of 1% lidocaine. Initial bolus of 30mL of 0.5% levobupivacaine followed by infusion containing a mixture of levobupivacaine 0.125% and clonidine 1.2 mcg/ml at 10 ml/hr until the second postop morning	Spinal Anesthesia	Yes - PCA (morphine) + oral	Yes	No
57	Casati A (2008)	**Group A (90 patients):** control group – PCA	Epidural	Yes – PCA; Morphine	No	No

		Group B (96 patients): epidural analgesia for 72 hr. 10 ml loading dose o f 0.125% levobupivacaine followed by a continuous infusion o f the same solution (Chirocaine 0.125%, Abbott Laboratories, Abbott Park, IL, USA). T h e infusion rate was initially set at 10 ml/h.	Anesthesia	1 mg doses with a 6-minute lockout period and a maximum allowed dose o f 24 mg/4 h.		
58	Martin F (2008)	**Group A (20 patients):** Combined sciatic (single-shot) and femoral (continuous for 48 h after surgery) both performed preoperatively. Initial 20-ml bolus of 0.75% ropivacaine for each block followed by infusion for femoral; continuous infusion of 0.2% ropivacaine, 0.15 ml/kg/hr for 48 hr. **Group B (18 patients):** control group; no intervention.	GA (volatile)	Yes - PCA (1-mg morphine bolus with a 5-min lockout time. In cases of poor pain control by the patient, the PCA bolus was increased to 2 mg)	Yes	No
59	Anderson L (2008)	**Group A (6 patients):** Peri-articular infiltration. Infiltration with 170 ml ropivacaine (0.2%) and epinephrine (10mg/ml) in one knee, and similar infiltration with 170 ml of 0.9% saline in the opposite knee then At 8 h post-operatively, an injection of 20 ml of the drug mixture [40mg ropivacaine and Epi (10 mg/ml)] At 24 h post-operatively, 50ml of the drug mixture [100mg ropivacaine with epinephrine (10mg/ml)] **Group B (6 patients):** control group; saline peri-articular infilteration.	Spinal Anesthesia	PCA (morphine 20mg/kg, lock-out set to 10 min) + oral opioid	Yes	Gabapentin
60	Bozkurt M (2009)	**Group A (20 patients):** control group; no intervention **Group B (20 patients):** epidural analgesia; Test dose 3 ml lidocaine (with Epi), tested before anesthesia, then %0.125 Bupivacaine (with 2mcg/ml fentanyl). Used bolus dose of 5 ml every 30 minutes (lock time). Then they started intraoperatively 20 minutes before the end of surgery.	GA (volatile + Nitrous oxide)	Yes – PCA; Morphine 1mg/ml, bolus 2mg, lock time 10 minutes, maximum 6mg in 1 hour	NA	NA
61	Essving P (2009)	**Group A (19 patients):** Peri-articular infiltration with intra-articular catheter. Bolus of 200 mg ropivacaine, 30 mg ketorolac, and 0.5 mg epinephrine (total volume 106 mL) were infiltrated intraoperatively into the soft tissue then 21 hours postoperatively, 150 mg ropivacain, 30 mg ketorolac, and 0.1 mg epinephrine were injected intraarticularly via a catheter **Group B (19 patients):** control group; saline infiltration.	GA (volatile)	Yes - PCA (1–mg bolus with 6–min lockout time)	Yes	No
62	Fu P (2009)	**Group A (40 patients):** Intraoperative intra-articular cocktail analgesic injection; The first 15 ml of cocktail analgesic injection was injected into the posterior aspect of the capsule and the medial, lateral collateral ligaments, just prior to implantation of the component. Before closure of the incision, the quadriceps tendon, the patella tendon and peripatella tissue were infiltrated with another 10 ml injection. Finally, the remaining 35 ml was used to infiltrate the synovium, fat pad, articular capsule, retinacular tissues, periosteum and subcuticular tissues. The cocktail	Spinal Anesthesia	Yes - PCA (25mg/100mlmorphine: a 0.5mgbolus, a 6 min lock-out, and a 5mg/h maximum) for 48 h	Yes	No

		analgesic injection contained 5 mg morphine, 30 mg bupivacaine (15 mg/1.5 ml) and 1 ml betamethasone, which were mixed with sterile normal saline solution to make up a combined volume of 60 ml. **Group B (40 patients):** control group; saline infiltration.				
63	Hunt K (2009)	**Group A (33 patients):** Femoral nerve block with nerve stimulator guidance; After induction of general anesthesia. 25 ml of study solution was then injected; 10 to 15 mL of either 0.5% bupivicaine **Group B (31 patients):** Femoral + Sciatic blocks, single shot, with nerve stimulator guidance; After induction of general anesthesia. 25ml of study solution was then injected; 10 to 15 mL of either 0.5% bupivicaine; for each nerve. **Group C (24 patients):** control group; sham blocks.	NA	Yes - PCA	No	No
64	Kadic L (2009)	**Group A (27 patients):** Femoral block with catheter, with nerve stimulator guidance. Before surgery. A bolus of 5ml lidocaine 2% (100 mg) with epinephrine 5mg/ml was given as a test dose, followed by a main dose of 20–25 ml ropivacaine 0.75%, and THEN a continuous infusion of 0.2% ropivacaine was started in the recovery room at the rate of 5ml/h and adjusted to a maximum of 10 ml/h for the next 48 hr **Group B (26 patients):** control group; no intervention	Spinal Anesthesia	Yes - PCA (1mg morphine on demand when they felt pain. The lockout period was 6 min)	Yes	No
65	Park JM (2009)	**Group A (25 patients):** epidural analgesia with peri-articular saline infiltration. 0.5% bupivacaine 8-10 mg and fentanyl and then infusion 2ml/hr **Group B (25 patients):** Peri-articular infiltration. 16 mL of 0.75% ropivacaine, 6 mg morphine,0.2 mg of epinephrine and 25 mL normal saline.	Spinal Anesthesia	Yes	Yes	No
66	Shum C (2009)	**Group A (20 patients):** control group; no intervention. **Group B (17 patients):** Continuous femoral block; with nerve stimulator guidance they used Winnie technique (i.e., 3-in-1). After surgery. Ropivacaine 0.15% (10 mL/h in the first 24 hours, followed by 5 mL/h in the next 24 hours) **Group C (18 patients):** Continuous femoral block; with nerve stimulator guidance they used Winnie technique (i.e., 3-in-1). After surgery. Ropivacaine 0.2%(10 mL/h in the first 24 hours, followed by 5 mL/h in the next 24 hours)	Spinal Anesthesia	Yes – PCA; morphine 1 mg/mL, on-demand bolus doses of 1 mg with a lockout period of 5 minutes, maximum dose of 8 mg/hr.	No	No
67	Sundarathiti P (2009)	**Group A (31 patients):** epidural analgesia; Bolus of 0.125% levobupivacaine 10 ml plus 2 mg morphine then maintained by continuous infusion of 0.125% levobupivacaine, infusion rate 8 ml/hr for 24 hr post-op and then reduced to 6 ml/hr if VAS > 3. **Group B (30 patients):** Continuous femoral block; with nerve stimulator guidance. Bolus of 20 ml of 0.25% levobupivacaine then maintained by continuous infusion of 0.125% levobupivacaine with	Spinal Anesthesia	Yes; tramadol	Yes	No

		morphine 0.0125 mg/ml, infusion rate 4 ml/hr for 24 hr post-op and then reduced to 3 ml/hr if VAS > 3.				
68	Anderson K (2010)	**Group A (19 patients):** Peri-articular infiltration followed by catheter continuous infusion. At the end of surgery wound infiltration with 150 mL ropivacaine (2 mg/mL), 1 mL ketorolac (30 mg/mL), and 0.5 mL epinephrine (1 mg/mL) (total volume 152 mL) combined with intraarticular infusion (4 mL/h) of 190 mL ropivacaine (2 mg/mL) plus 2 mL ketorolac (30 mg/mL) **Group B (21 patients):** epidural analgesia; Bolus of 7 mL ropivacaine (2 mg/mL) then infusion (4 mL/h) of 192 mL ropivacaine (2 mg/mL) combined with 6 intravenous administrations of 0.5 mL ketorolac (30 mg/mL) for 48 h	Spinal Anesthesia	Yes - PCA morphine (concentration 1 mg/mL, dose 2.5 mg, lockout 10 min) as well as Oxycodone	Yes	No
69	Bengisun Z (2010)	**Group A (20 patients):** intraoperative intra-articular bupivacaine; The first 100 ml was used after cementing of the modular prosthesis and before replacing the polyethylene insert. First, 50 ml of 100 ml was injected into the posterior part of the capsule and the intercondylar area; second, 50 ml of 100 ml was infiltrated into the anterior part of the capsule, the collateral ligaments, and along the femur and tibia. The remaining 50 ml of solution was infiltrated into the subcutaneous tissue after closure of the capsule. 150 ml solution intra-articularly, containing 200 mg bupivacaine combined with 0.5 mg Epi, at the end of the surgery **Group B (20 patients):** intraoperative intra-articular levobupivacaine. 150 ml solution intra-articularly, containing 200 mg levobupivacaine combined with 0.5 mg epinephrine, at the end of the surgery. **Group C (20 patients): control group;** saline intra-articular infiltration.	Spinal Anesthesia	Yes - PCA with tramadol after the operation as 50-mg boluses with 15-min lockout period, 4-h limit of 200 mg, for 48 hr.	Yes	No
70	Carli F (2010)	**Group A (20 patients):** Peri-articular infiltration followed by continuous infusion. First; 100 mg of ropivacaine (50 ml of ropivacaine 0.2%), 0.5 ml of ketorolac (30 mg/ml), and 0.25 ml of epinephrine (1 mg/ml) was injected into the posterior capsule of the knee. Then a second solution containing a total volume of 100 ml of ropivacaine 0.2%, 1 ml of ketorolac (30 mg/ml), and 0.5 ml of epinephrine (1 mg/ml); These solutions were injected into the remainder of the capsule, the cut quadriceps tendon, the patellar ligament and soft tissues surrounding the joint, and the subcutaneous tissues after closure of the medial parapatellar arthrotomy. Through this catheter, a third solution containing either 50 ml of ropivacaine 0.5% with ketorolac (30 mg/ml) and 0.25 ml of epinephrine (1 mg/ml) over a 2 hr period at 24 hr. **Group B (20 patients):** Femoral block with catheter insertion under nerve stimulator guidance; they also received peri-articular	Spinal Anesthesia	Yes - PCA (1 mg of morphine, with a lockout of 7 min and no background infusion), then oxycodone	Yes	No

		placebo, as well as the posterior capsular infiltration. Loading dose of 8 ml of either ropivacaine 0.2% THEN continuous infusion of either ropivacaine 0.2% at a rate of 8 ml/h for 48 hr.				
71	Essving P (2010)	**Group A (24 patients):** Peri-articular infiltration with catheter insertion for postop boluses. 400 mg ropivacaine, 30 mg ketorolac, and 0.5 mg epinephrine (total volume 166 mL) were infiltrated by the surgeon into the soft tissues peri-articularly during the operation. Before inserting the prosthesis, 40–50 mL of the solution was injected into the posterior capsule. After the prosthesis was cemented in place, the rest of the solution was injected into the deep tissues around the ligaments, the capsule incision, and the synovium. Before closing the skin, 50 mL ropivacaine (100 mg) without epinephrine or ketorolac was injected into the subcutaneous tissue. After 21 h, 200 mg ropivacaine, 30 mg ketorolac, and 0.1 mg epinephrine in total volume of 22 mL were injected intra-articularly via the catheter **Group B (23 patients):** saline peri-articular infiltration.	GA (volatile)	Yes - PCA morphine (1-mg bolus and 6-min lockout time)	Yes	No
72	Frassanito L (2010)	**Group A (26 patients):** intra-thecal morphine. **Group B (26 patients):** Femoral block with ultrasound and nerve stimulator guidance; before anesthesia. 25 mL of 0.75% ropivacaine.	Spinal Anesthesia	Yes - PCA (1-mg bolus and a 5-minute lockout period with no background infusion) for 48 hours	Yes	No
73	Fu P (2010)	**Group A (50 patients):** Peri-articular infiltration. Cocktail of 5 mg morphine, 150 mg ropivacaine (7.5:1000), 0.5 ml adrenaline (1:1000) and 1 ml betamethasone, which were mixed with sterile normal saline solution to make up a combined volume of 50 ml **Group B (50 patients):** saline peri-articular infiltration.	Spinal Anesthesia	Yes - PCA (25 mg/100 ml morphine: a 0.5 mg bolus, a 6-min lock-out and a maximum rate of 5 mg/h) for 48 h	Yes - only the treatment group	No
74	Garcia J (2010)	**Group A (25 patients):** Intra-articular single injection. 10 mg (1 mL) of morphine diluted in 19 mL of NS (total of 20 mL). **Group B (25 patients):** saline intra-articular injection.	Spinal Anesthesia	Yes – systemic morphine	No	No
75	Gomez-Cardero (2010)	**Group A (25 patients):** continuous intra-articular infusion. 300 mL ropivacaine 0.2% at a speed of 5 mL/hour for 60hr **Group B (25 patients):** saline continuous intra-articular infusion.	Spinal Anesthesia	Yes – systemic	Yes	No
76	Kazak B (2010)	**Group A (20 patients):** Peri-articular; First, 50 ml of 100 ml was injected into the posterior part of the capsule and the intercondylar area; second, 50 ml of 100 ml was infiltrated into the anterior part of the capsule, the collateral ligaments, and along the femur and tibia; catheter placed and The first 25 ml administration was at 10 h and second was at 22 hr after the operation. 150 ml solution intra-articularly, containing 200 mg bupivacaine, with Epi, at the end of surgery **Group B (20 patients): peri-articular infiltration as above.** 150	Spinal Anesthesia	Yes – PCA	Yes	No

		ml solution intra-articularly, containing 200 mg levobupivacaine, with epi, at the end of surgery. **Group C (20 patients):** saline peri-articular infiltration.				
77	McMeniman T (2010)	**Group A (47 patients):** Femoral block with catheter insertion under nerve stimulator guidance; after induction of anesthesia. Loading dose of 60 mL of 0.2% ropivacaine was given, followed by an infusion via catheter of 8 mL/h. **Group B (50 patients):** Fascia iliaca block with catheter insertion under nerve stimulator guidance; after induction of anesthesia. Loading dose of 60 mL of 0.2% ropivacaine was given, followed by an infusion via catheter of 8 mL/h.	GA (volatile)	Yes - PCA (fentanyl 10 µg/mL, with a 10 µg bolus and a 5-minute lockout period with no background) + oral tramadol + SQ morphine	Yes	No
78	Ong J (2010)	**Group A (17 patients):** control group; no intervention. **Group B (16 patients):** continuous peri-articular infiltration. Bupivacaine (4 ml of 0.25%) to the subcutaneous tissue and intra-articular space for 48 hr. **Group C (21 patients):** continuous peri-articular infiltration. Mixture of normal saline (50 ml), ketorolac (1 ml), morphine (10 mg) and bupivacaine (100 mg), followed by continuous infiltration of bupivacaine (4 ml of 0.25%) to the subcutaneous tissue and intra-articular space for 48 hr.	NA	Yes – PCA; morphine	Yes	No
79	Rosen A (2010)	**Group A (24 patients):** intra-articular single injection after closure. 100 mL of 0.2% (200 mg) ropivacaine. **Group B (24 patients):** saline intra-articular injection.	GA (volatile)	Yes - PCA	NA	NA
80	Spreng U (2010)	**Group A (33 patients):** epidural analgesia; infusion with fentanyl 2 mg/ml, epinephrine 1 mg/ml, bupivacaine 1 mg/ml. The infusion rate was programmed according to body height (<160 cm: 6 ml/h; 160–190 cm: 8 ml/h; >190 cm: 10 ml/h). Continuous epidural analgesia was maintained for 48 h after operation. **Group B (33 patients):** Peri-carticular infiltration with catheter in lateral side of knee for subsequent boluses. 150 ml of ropivacaine 150 mg and Epi added to isotonic saline + ketorolac 30 mg + morphine 5 mg were added to the infiltration mixture. 40 ml infiltrated into the posterior capsule structures. After the joint replacement, 50 ml infiltrated circular around the prosthesis. After closure of the capsule, 50 ml was infiltrated into the fascia and subcutaneous. At the end of the operation, 10 ml was injected through the knee catheter. Between 22 and 24 hr after surgery patients got injections both into the knee and intravenously. The solution which was injected into the knee (20 ml) was ropivacaine 19 ml (7.5 mg/ml) with ketorolac 1 ml (30 mg/ml). **Group C (33 patients):** Peri-carticular infiltration with catheter in lateral side of knee for subsequent boluses. 150 ml of ropivacaine 150 mg and epinephrine 0.5 mg added to isotonic saline only.	Spinal Anesthesia	Yes - PCA (morphine 2 mg bolus with 10 min lockout time)	Yes	No

		While ketorolac 30 mg + morphine 5 mg were given intravenously. Additionally, the patients in this group had intra-articular saline.				
81	Thorsell M (2010)	**Group A (34 patients):** epidural analgesia; bupivacain 5 mg/mL or ropivacain 10 mg/mL, 10-15 ml. **Group B (31 patients):** peri-articular analgesia; Bolus of ropivacain 2 mg/mL, 150 mL (300mg); adrenaline 0.1 mg/mL, 5 mL; and ketorolac 30 mg/mL, 1 mL (a total of 156 mL). Then on postoperative day 1, all patients in the local infiltration anesthesia group were given bupivacain-Epi 5 mg/mL 5g/mL, 20 mL, to which was added ketorolac 30 mg/mL, 1 mL (a total of 21 mL) through the catheter introduced intra-articularly during surgery	Spinal Anesthesia	NA	NA	NA
82	Wang H (2010)	**Group A (17 patients):** Peri-articular infiltration. Ropivacaine, morphine and Epi **Group B (19 patients):** epidural analgesia.	Spinal Anesthesia	NA	NA	NA
83	Affas F (2011)	**Group A (20 patients):** Femoral block directly after spinal anesthesia, with nerve stimulator guidance, then catheter placed. Bolus of 30 mL ropivacaine (2 mg/mL) was injected followed by 15 mL of the same concentration every 4 hours for 24 h (total dose 240 mg/24 h). **Group B (20 patients):** continuous peri-articular infiltration. Bolus of 150 mL ropivacaine (2 mg/mL), 1 ml ketorolac (30 mg/mL), and 5 ml epinephrine (0.1 mg/mL). The total dose of ropivacaine during the first 24 h postoperatively was 300 mg and the total dose of ketorolac was 30 mg.	Spinal Anesthesia	Yes - PCA (morphine (2 mg/dose) on demand with a lock-out time of 6 min and maximum dose of 35 mg over 4 h)	Yes	No
84	Baranovic S (2011)	**Group A (35 patients):** Femoral block directly after spinal anesthesia, with nerve stimulator guidance, then catheter placed. Bolus dose of 8 ml 0.25%levobupivacain, then 5–6 mL per hour of 0.25% levobupivacain via a femoral catheter. **Group B (36 patients):** control group; no intervention.	Spinal Anesthesia	Yes – PCA; Morphine (concentration 1mg/ml; basal rate 3 mg/h, bolus upon request 2 mg, with lock out interval of 8 minutes).	Yes	No
85	Essving P (2011)	**Group A (25 patients):** Intra-thecal morphine + intra-articular catheter and 2 boluses of normal saline after surgery. **Group B (25 patients):** Peri-articular infiltration with catheter placement and 2 subsequent boluses. Bolus of 400 mg ropivacaine, 30 mg ketorolac, and 0.5 mg epinephrine (total volume 116 mL) were infiltrated by the surgeon into the soft tissues periarticularly during the operation then the surgeon placed intra-articular catheter; then 22ml of 200mg ropivacaine + 30mg Ketorolac + 0.1mg epinephrine (repeated in day 1 and day 2).	Spinal Anesthesia	Yes - PCA and tramadol	No	No
86	Fetherston C (2011)	**Group A (27 patients):** Femoral block with nerve stimulator guidance, then catheter placed; post induction of anesthesia and before surgery. 20 ml 0.75% ropivacaine and 20 ml 2% lignocaine	NA	Yes – PCA; fentanyl or morphine	No	No

		was administered in the recovery room prior to commencement of continuous infusion of 0.2% ropivacaine. **Group B (25 patients):** control group; no intervention.				
87	Gallardo (2011)	**Group A (20 patients):** Fascia iliaca compartment block (infusion). Bolus 20ml Bupivacaine 0.5% then infusion bupivacaine 0.1% rate 10ml/hr for 30hr. **Group B (20 patients):** epidural analgesia; Bolus 30ml lidocaine 1% with Epi then infusion of bupivacaine 0.1% at rate of 10ml/hr and Ketoprofen with morphine 2mg every 8 hr.	Spinal Anesthesia	Yes	Yes	No
88	Wegener (2011)	**Group A (29 patients): F group;** Patients receiving patient-controlled femoral nerve block only; US-guided; stimulation femoral nerve catheter; before anesthesia. Femoral block with loading dose of 20 mL of levobupivacaine 0.375%, continuous infusion of levobupivacaine 0.125% 10 mL/h was started via the femoral nerve catheter in all groups. Postoperatively, the continuous femoral nerve infusion was changed to patient-controlled femoral nerve infusion (5-mL bolus, 30-minute lockout; basal rate, 6 mL/h in all groups **Group B (30 patients):** Like the F group combined with a single-injection sciatic nerve block; US-guided; stimulation femoral nerve catheter. Sciatic nerve block was established via a parasacral approach; before anesthesia. Femoral and sciatic block, each, with loading dose of 20 mL of levobupivacaine 0.375%, continuous infusion of levobupivacaine 0.125% 10 mL/h was started via the femoral nerve catheter in all groups. **Group C (30 patients):** Like the F group combined with a continuous sciatic nerve block; US-guided; stimulation femoral nerve catheter, Sciatic nerve block was established via a parasacral approach, a second continuous infusion of levobupivacaine 0.125% 10 mL/h was started via the sciatic catheter 45 minutes after catheter placement; before anesthesia. Femoral and sciatic block, each, with loading dose of 20 mL of levobupivacaine 0.375%, continuous infusion of levobupivacaine 0.125% 10 mL/h was started via the femoral nerve catheter in all groups.	GA (TIVA)	Yes	Yes	No
89	Zhang S (2011)	**Group A (26 patients):** control group; intra-articular catheter saline. **Group B (27 patients):** peri-articular single infiltration subcutaneous, wound, and deep tissue. Mixture of ropivacaine 150 ml (2 mg/ml) and ketorolac 1 ml (30 mg/ml) was prepared. **Group C (27 patients):** An intra-articular epidural 18-gauge catheter was inserted 5 cm proximal to the incision into the distal anterior thigh. Ropivacaine (190 ml, containing 2 mg/ml) via	GA (volatile)	Yes - PCA consisting of morphine 1 mg in boluses of 25 mg/100 ml with a 6-min lockout	Yes	No

		continuous infusion (flow rate 4 ml/hr for 48 hr) plus 2 ml ketorolac (30 mg/ml) at 1.25 mg/hr.				
90	Fajardo M (2011)	**Group A (30 patients):** intra-articular injection of an analgesic cocktail containing a combination of 7 cc of 5 mg/10 cc morphine, 7 cc of 0.5% bupivacaine with Epi, and 1 cc of 30 mg/1 cc ketorolac, and mixed with 15 cc of normal saline (total of 30 cc injected) **Group B (30 patients):** contralateral knee into the control group; received saline injection.	NA	Yes - IV dilauded	Yes	No
91	Joo JH (2011)	**Group A (134 patients):** Peri-articular infiltration. 200 mg 0.5% bupivacaine, 10 mg morphine, 40 mg methylprednisolone acetate, and 300 mcg Epi. **Group B (134 patients):** Peri-articular infiltration (saline).	Epidural Anesthesia	Yes – PCA; morphine bolus of 1.5 mg, a lockout time of 6 minutes, and a maximum of 15 mg/h, for 48 hr	Yes	No
92	Carvalho (2012)	**Group A (25 patients):** continue femoral nerve block, under nerve stimulator guidance. 10ml of ropivacaine 0.375% were injected through the needle, and 20 ml of ropivacaine 0.375% were administered through the catheter infusion of ropivacaine 0.2% was started on the femoral catheter at a rate of 8 ml/hr. **Group B (25 patients):** continues femoral + sciatic nerve blocks, under nerve stimulator guidance. 25 ml of ropivacaine 0.375% were administered when either the common peroneal or tibial nerve (dorsiflexion or plantar flexion of the foot) were identified	GA (volatile)	Yes - Tramadol	Yes	No
93	Chan M (2012)	**Group A (20 patients):** Pre-op femoral nerve block; ultrasound guided and nerve stimulator. 0.4 mL/kg 0.375% bupivacaine with Epi. **Group B (20 patients):** post-op femoral nerve block. 0.4 mL/kg 0.375% bupivacaine with Epi. **Group C (20 patients):** Pre-op femoral block with saline. **Group D (21 patients):** post-op femoral block with saline.	Spinal Anesthesia	Yes - Morphine of 1 mg, a lockout interval of 5 minutes, and a 4-hour maximum dose of 30 mg.	Yes	No
94	Chang L (2012)	**Group A (31 patients):** auricular acupressure; involved embedding the magnetic beads within skin-colored adhesive tape that was placed on the auricular acupoints and retained in situ for 3 days (Figure 2). The choice of Shenmen (TF4) and subcortex (AT4) acupoints was based on clinical reports [15–18, 21] and the TCM physician's recommendation. Acupressure then was applied by repeatedly pressing the acupoints with the fingertips for 3 minutes per point, 3 times per day (9 AM, 1 PM, 5 PM). The last treatment was given on the third day after surgery at 5 PM. **Group B (31 patients):** Sham control group with PCA	GA (volatile)	Yes - PCA; bolus of 1 mg morphine with a lockout interval of 5 minutes and a 4-hour maximum morphine dose of 10 mg	NA	No
95	Chen Y (2012)	**Group A (40 patients):** Intra-articular injection; The first 30 ml of the analgesic injection mixture or normal saline was injected into the posterior aspect of the capsule and the medial lateral collateral	Spinal Anesthesia	Yes - PCA; 25 mg/100 ml morphine: 0.5 mg bolus, 6 min	NA	No

		ligaments, just prior to implantation of the component. Care was taken to avoid excessive infiltration in the area of the common peroneal nerve. Before closure of the incision, the quadriceps tendon, the patella tendon and peripatella tissue were infiltrated with another 30-ml injection. The remaining 40 ml was used to infiltrate the synovium, fat pad, articular capsule, retinacular tissues, periosteum, subcuticular tissues and the subcutaneous tissues around the incision. Magnesium sulphate 50 mg/kg and ropivacaine 190 mg, mixed with sterile normal saline solution to make up a combined volume of 100 ml. **Group B (40 patients):** control group; saline infiltration.		lock-out, 5 mg/h maximum rate		
96	Jaeger (2012)	**Group A (21 patients):** Adductor canal block; a systematically cross-sectional anatomical survey, from proximal to distal thigh, was performed with a linear high-frequency ultrasound transducer. The adductor canal was identified approximately at the mid-thigh level, with the femoral artery, femoral vein, and the saphenous nerve deep to the sartorius muscle between the vastus medialis muscle and the adductor longus muscle. With the tip of the needle located in the adductor canal close to the saphenous nerve (if seen), 10 ml of saline was injected to distend the canal and to facilitate catheter threading. A 21-gauge catheter was inserted approximately 5 cm beyond the needle tip. (Total 60 ml) 30 ml of ropivacaine 0.75%. Following completion of the study, all patients received a bolus of 30-ml 0.75% ropivacaine through the catheter **Group B (20 patients):** control group; sham block with saline.	GA (TIVA)	Yes - PCA; morphine intravenously (bolus 2.5 mg, lock-out time 10 min, no background infusion). Also IV morphine or fentanyl PRN	Yes	No
97	Jenstrup (2012)	**Group A (34 patients):** Adductor canal block; a systematically cross-sectional anatomical survey, fromproximal to distal thigh, was performed with a linear high-frequency ultrasound transducer. The adductor canal was identified approximately at the mid-thigh level, with the femoral artery, femoral vein, and the saphenous nerve deep to the sartorius muscle between the vastus medialis muscle and the adductor longus muscle. With the tip of the needle located in the adductor canal close to the saphenous nerve (if seen), 10 ml of saline was injected to distend the canal and to facilitate catheter threading. A 21-gauge catheter was inserted approximately 5 cm beyond the needle tip. 30 ml of ropivacaine immediately post-operatively. Additional boluses of 15 ml of ropivacaine 0.75% or saline were administered at 6, 12 and 18 h post-operatively. At 24 h post-operatively, a bolus of 15 ml of ropivacaine 0.75%. **Group B (37 patients):** control group; sham block with saline.	Spinal Anesthesia	Yes - PCA; morphine intravenously (bolus 2.5 mg, lock-out time 10 min, no background infusion). Also IV morphine or fentanyl PRN	Yes	No
98	Lee J (2012)	**Group A (20 patients):** control group; no intervention. **Group B (20 patients):** Psoas block; The patients were put into	GA (volatile)	Yes - PCA; morphine 0.5 ml bolus dose	NA	NA

		the prone position. Using a C-arm the location of the 4th lumbar vertebra body was confirmed. 0.25% ropivacaine at a bolus dose of 20 ml was infused via the catheter before the surgery then using 0.2% ropivacaine at a rate of 8 ml/hr was infused for 48 hr.		and a 15 min lockout time		
99	Ng F (2012)	**Group A (30 patients):** continues femoral nerve block (nerve stimulator guided); before induction of anesthesia. Ropivacaine was infused at 0 to 10 ml per hour continuously for 3 to 4 days. **Group B (30 patients):** control group; no intervention.	NA	Yes - PCA; morphine 1 mg per bolus with a 5-minute lockout interval.	NA	NA
100	Ng F (2012)	**Group A (16 patients):** continues femoral nerve block (nerve stimulator guided); before induction of anesthesia. Single 20 mL bolus of 0.2% ropivacaine, followed by continuous infusion at 10 mL/h, starting in the recovery room and continuing for 72 hr. **Group B (16 patients):** Peri-articular infiltration. Solution included ropivacaine (300 mg in 30 mL), adrenaline (1 mg in 0.5 mL), and isotonic sodium chloride solution (70 mL). Triamcinolone acetonide (40 mg in 1 mL) was added into half of the portion of the	GA (volatile)	Yes - PCA; morphine 1 mg bolus, lockout 5 minutes, 1 hour maximum 6 mg	NA	NA
101	Shanthanna H (2012)	**Group A (19 patients):** epidural analgesia; 12 mL bolus of 0.125% bupivacaine mixed with 2 mcg/mL fentanyl. Continuous infiltration of a mixture of 0.125% bupivacaine with 2 mcg/mL of fentanyl The initial rate of infusion was set at 8 mL/h in both the groups. **Group B (19 patients):** continues femoral nerve block (ultrasound guided); after surgery. 12 mL bolus of 0.125% bupivacaine mixed with 2 mcg/mL fentanyl. Continuous infiltration of a mixture of 0.125% bupivacaine with 2 mcg/mL of fentanyl The initial rate of infusion was set at 8 mL/h in both the groups.	NA	No	Yes	No
102	Widmer (2012)	**Group A (27 patients):** Femoral nerve block with ultrasound and nerve stimulator guidance. 30ml ropivacaine 0.375% (=100mg) **Group B (27 patients):** Peri-articular infiltration; posterior, medial, lateral, and anterior capsule as well as the arthrotomy margins, subcutaneous tissue, and skin. 100 mL of ropivacaine 0.2% (200 mg) with Epi administered	GA (volatile)	Yes - PCA; 20 µg of fentanyl at 5-minute intervals on demand. Then oxycodone	Yes	No
103	Yuenyongviwat (2012)	**Group A (30 patients):** periarticular injections at the extensor mechanism (3mL), capsule (5 mL), pes anserinus (1 mL), iliotibial band (1 mL), collateral ligament (2 mL), and subcutaneous tissue (8mL) with 0.25% bupivacaine before wound closure. **Group B (30 patients):** saline injections.	Spinal Anesthesia	Yes - PCA; morphine 1mg IV bloused with 15-minute lock-out interval.	Yes	No
104	Ashraf (2013)	**Group A (22 patients):** Ultrasound guided femoral nerve block; before anesthesia. Single shot femoral nerve block contained 30 ml of 0.2% ropivacaine. **Group B (20 patients):** Peri-articular infiltration. 150 ml 0.2% ropivacaine, 1 ml 1:1000 Epi, and 30 mg ketolorac	Spinal Anesthesia	Yes - Morphine	Yes	No
105	Chan E (2013)	**Group A (66 patients):** control group; no intervention. **Group B (69 patients):** single-injection femoral verve block; prior	NA	Yes - PCA; morphine 1mg with 5min	Yes	No

		to the induction; either nerve stimulation localization or ultrasound visualization of the femoral nerve, or a combination of both. 20 ml of 0.25% bupivacaine with Epi. **Group C (65 patients):** Continuous femoral nerve block; prior to the induction. 20ml of 0.25% bupivacaine with Epi, followed by infusion of bupivacaine 0.125% 4ml/h until day 3.		lockout (maximum 10mg/h); Or fentanyl for patients with high risk of renal impairment		
106	Chaumeron (2013)	**Group A (30 patients):** Femoral nerve block with catheter infusion; with nerve stimulator guidance. With peri-articular saline infiltration; before anesthesia. Bolus of 20 mL ropivacaine 0.25% then ropivacaine 0.2% was perfused continuously infused at 8 to 10 mL/hr for 48 to 72 hr. **Group B (29 patients):** Peri-articular infiltration with catheter infusion. Infiltrated in deep tissues (collateral ligaments, posterior capsule, quadriceps tendon, patellar tendon, fat pad, periosteum, and synovial lining) with femoral sham block. Total of 108; 275 mg ropivacaine, 7.5 mL of 10.0 mg/mL Naropin, 30 mg ketorolac, and 0.5 mL adrenaline (1/1000) into a 100-mL sterile pack of 0.2 mg/mL Naropin. On Day 1 150 mg ropivacaine (15 mL of Naropin)	Spinal Anesthesia	Yes - oral and IV opioids	Yes	No
107	Dauri (2013)	**Group A (20 patients):** ultrasound-guided continuous femoral nerve block, and single shot ultrasound-guided sciatic nerve block; before surgery. Bolus of 30 ml of 5mg/ml of ropivacaine, for sciatic 20 mL of 5 mg/ml of ropivacaine. At the end of the procedure, an elastomeric pump with 2 mg/ ml of ropivacaine at 8 ml/h infusion rate was connected to the catheter of each patient of each group; **Group B (20 patients):** Psoas group; received continuous ultrasound-guided and nerve stimulator lumbar plexus block and single shot ultrasound-guided sciatic nerve block; before surgery. Bolus of 30 ml of 5mg/ml of ropivacaine, for sciatic 20 mL of 5 mg/ml of ropivacaine. At the end of the procedure, an elastomeric pump with 2 mg/ ml of ropivacaine at 8 ml/h infusion rate was connected to the catheter of each patient of each group;	GA (volatile)	Yes - PCA morphine 2 mg bolus, with 10 min lockout and a one hour limit of 8 mg morphine	NA	No
108	Goyal (2013)	**Group A (75 groups):** intra-articular saline. **Group B (75 groups):** Intra-articular catheter was placed in the joint space. 300 mL of 0.5% bupivacaine; at rate of 5 mL/hr for 2 days	Spinal Anesthesia	Yes - PRN	Yes	Pregabalin
109	He B (2013)	**Group A (45 patients):** Sham acupuncture points (sham control group received four non-acupuncture points on the helix ipsilateral to the site of surgery). **Group B (45 patients):** Four acupuncture points ipsilateral to the surgery site—knee joint, shenmen, subcortex, and sympathesis. Acupressure was applied by repeatedly pressing the acupoints with the fingertips for 3 minutes per point, four times per day, and ended 7 days after surgery. The seeds were kept in place unilaterally by	Epidural Anesthesia	Yes - PCA; fentanyl continuously deliver 3 mL/1 h of the mixture and provide a single dose of 4 mL with a 30-minute lockout period PRN	Yes	No

		applying an adhesive patch onto the acu-points. Patients were instructed by the acupuncturist on how to apply acupuncture.				
110	Ikeuchi (2013)	**Group A (20 patients):** peri-articular infiltration; before the skin incision, 40 mL of 0.5 % lidocaine with Epi was injected into the skin and joint capsule. A catheter was inserted into the knee joint before closing the wound. At the end of the surgery, 50 mg flurbiprofen and 100 lg fentanyl were administered intravenously. Analgesic drugs consist of 20 mL of 0.75 % ropivacaine, 6.6 mg of dexamethasone, and 400 mg of isepamicin. A bolus injection of 5 mL of analgesics was performed every 12 h until 48 hr. **Group B (20 patients):** control group; no intervention.	GA (TIVA)	Yes - PCA; 20 mcg fentanyl with a 15-min lock out time	Yes	No
111	Jaeger (2013)	**Group A (22 groups):** Adductor canal block with catheter infusion; immediately postoperative and before the spinal anesthesia had worn off. Ultrasound survey at the medial part of the thigh, halfway between the superior anterior iliac spine and the patella. In a short axis view, we identified the femoral artery underneath the sartorius muscle, with the vein just inferior and the saphenous nerve just lateral to the artery. The needle was introduced in-plane and 2 to 3 mL of saline was used to ensure correct placement of the needle in the vicinity of the saphenous nerve in the adductor canal. The correct spread of the ropivacaine bolus injection in a semicircular form around the artery was observed. 30 mL of ropivacaine 0.5% via the catheter initially, followed by an infusion of 0.2% ropivacaine at a rate of 8 mL/h during the next 24 hr. **Group B (26 groups):** Femoral nerve block with catheter infusion; ultrasound guided. 30 mL of ropivacaine 0.5% via the catheter initially, followed by an infusion of 0.2% ropivacaine at a rate of 8 mL/h during the next 24 hr.	Spinal Anesthesia	Yes - PCA; morphine (bolus 2.5 mg, lock-out time 10 minutes, and no background infusion)	Yes	No
112	Bing-shan L (2013)	**Group A (20 patients):** Epidural analgesia. 0.2% ropivacaine, 2 mg / L fentanyl. **Group B (20 patients):** continues femoral nerve block. 0.2% ropivacaine 4 mL, compound betamethasone Pine injection 1 mL, saline 5 mL	Epidural Anesthesia (with sedation)	Yes - IM pethedine and PO tramadol	Yes	No
113	Moghtahael (2013)	**Group A (18 patients):** femoral nerve block with nerve stimulator assistance. Single injection of 20 ml ropivacaine (10 mg/ml) **Group B (18 patients):** Peri-articular infiltration. Ropivacaine 300mg and Ketorolac 30 mg with Epi on 150 ml.	Spinal Anesthesia	Yes - IV morphine	Yes	No
114	Nakai T (2013)	**Group A (20 patients):** control group; no intervention. **Group B (21 patients):** intra-articular injection. A mixture (30 ml) containing 0.5% bupivacaine (20 ml), 10 mg of morphine hydrochloride (1 ml), 0.3 mg of epinephrine (0.3 ml), and sterile normal saline (8.7 ml). **Group C (19 patients):** Peri-articular infiltration. 50 ml of a mixture	GA (volatile)	NA	NA	NA

		containing 0.75% ropivacaine (30 ml), 10 mg of morphine hydrochloride (1 ml), 4 mg of betamethasone (1 ml), 0.25 mg of epinephrine (0.25 ml), and saline (17.75 ml) before and after implant placement.				
115	Sakai (2013)	**Group A (30 patients):** epidural analgesia; A test dose of 1% lidocaine (50 mg) was initially injected, and the sensory block was tested after 10 min by applying ice to the ipsilateral thigh. Then, two 90-mg doses of 0.3% ropivacaine were administered. Immediately after surgery, 0.15% ropivacaine infusion at 4 mL/h was initiated. **Group B (30 patients):** continuous femoral nerve block and single-injection selective tibial nerve block; ultrasound guided. A single 60-mg dose of 0.3% ropivacaine was then injected around the tibial nerve. A single 60-mg dose of 0.3% ropivacaine was then injected around the femoral nerve. Immediately after surgery, 0.15% ropivacaine infusion at 4 mL/h was initiated	GA (volatile)	No	Yes	No
116	Tammachote (2013)	**Group A (28 patients):** intra-thical morphine **Group B (29 patients):** Peri-articular infiltration. Multimodal drug injection comprised 100 mg bupivacaine (0.5%, 20 mL), 5 mg morphine sulfate (5 mL), 0.6 mg Epi, and 30 mg ketorolac. These were mixed with sterile normal saline solution to make up a combined volume of 100 mL.	Spinal Anesthesia	Yes - PCA; inject 0.6 mg in 1 mL (30 mg of ketorolac in 50 mL normal saline) when patients pressed a button with a 2-minute lockout period	Yes	No
117	Williams (2013)	**Group A (24 patients):** intra-articular infusion. Infusion of 0.5% bupivacaine instilled at 2 cc/h for 48hr. All patients received a standard intraoperative loading dose of 20 cc 0.25% bupivacaine/Epi injection, 10 cc into the medial and lateral subcutaneous tissue around the incision and 10 cc intra-articular after arthrotomy closure **Group B (25 patients):** saline intra-articular injection.	Spinal Anesthesia	Yes - PCA; morphine	Yes	Gabapentin
118	Abdallah (2014)	**Group A (17 patients):** Proximal Group (infragluteal sciatic nerve block + continuous femoral nerve block); ultrasound and nerve stimulator guided; after surgery started. 30ml of a 2:1 admixture of bupivacaine 0.5%: lidocaine 2% with Epi, delivered. Once the catheter was secured in place, all patients received 10 ml mepivacaine 2% injected through the CFNB catheter. Bolus of 20 ml of ropivacaine 0.2% with Epi injected through the CFNB catheter. An infusion of ropivacaine 0.2% was also initiated through the CFNB catheter with a baseline rate of 5 ml/h and patientcontrolled boluses of 5 ml available every 30 min. **Group B (18 patients):** Popliteal approach (popliteal sciatic nerve block + continuous femoral nerve block); ultrasound and nerve stimulator guided. Hydrolocation by injecting 0.5 to 1 ml of dextrose	Spinal Anesthesia	Yes - PCA; hydromorphone (if pain not well controlled) with PO opioids	Yes	No

		5% in water was used to localize the needle tip and advance it to the vicinity of the posterior external surface of sciatic nerve; after surgery started. Same mixture. **Group C (18 patients):** Sham sciatic block and continuous femoral nerve block. Once the catheter was secured in place, all patients received 10 ml mepivacaine 2% injected through the femoral nerve catheter. Bolus of 20 ml of ropivacaine 0.2% with Epi injected through the CFNB catheter. An infusion of ropivacaine 0.2% was also initiated through the femoral catheter with a baseline rate of 5 ml/hr and patient controlled boluses of 5 ml available every 30 min.				
119	Albrecht (2014)	**Group A (28 patients):** Femoral (continuous) + Sciatic (single) ultrasound guided; before anesthesia. Immediately after catheter placement, 10 mL mepivacaine 2% was injected through the catheter. Then in PACU a bolus of 20mLropivacaine 0.2% with Epi into the femoral catheter followed by ropivacaine 0.2% at a rate of 5 mL/h with patient-controlled boluses of 5mL available every 30minutes. Sciatic block with 30 mL ropivacaine 0.2%. **Group B (32 patients):** Femoral (continuous) + Sciatic (single) ultrasound guided; before anesthesia. Immediately after catheter placement, 10 mL mepivacaine 2% was injected through the catheter. Then in PACU 20 mL ropivacaine 0.2% with Epi into the femoral catheter followed by ropivacaine 0.1%at a rate of 10 mL/h with patient-controlled boluses of 10 mL available every 30 minutes. Sciatic block with 30 mL ropivacaine 0.2%. **Group C (33 patients):** Single injection of femoral and sciatic block then saline infusion. Saline; a bolus of 30 mL ropivacaine 0.375% with Epi into the femoral catheter followed by normal saline at a rate of 1 mL/h with patient-controlled boluses of 1 mL available every 30 minutes.	Spinal Anesthesia	Yes - oral opioids with or without PCA morphine	Yes	Gabapentin
120	Anastase D (2014)	**Group A (48 patients):** epidural analgesia; 5 ml of 0.2% ropivacaine and the PCA was performed through the epidural catheter. The hourly rate was of 3 ml, bolus administration of 5 ml, and a lock-out period of 30 minutes **Group B (52 patients):** femoral and sciatic block; ultrasound guided; after anesthesia and before surgery. 5 ml bolus 0.2% ropivacaine, femoral catheter, PCA was performed with an hourly rate of 5 ml, bolus administration of 5 ml by the patient and the lock-out interval of 20 minutes; in patients with a sciatic catheter, the rate of perfusion was 5 ml/h to a maximum of 8 ml/h, 5 ml bolus to be administered by the patient and the lock-out interval of 20 minutes	Spinal Anesthesia	Yes - PCA; piritramide	NA	NA
121	Bedir E (2014)	**Group A (15 patients):** epidural analgesia; 120 ml prepared solution of 72 ml saline + 48 ml bupivacaine (1 ml = 5 mg). The	Spinal Anesthesia	No	Yes	No

		patient-controlled pump was prepared as a 5 cc/hour continuous infusion for 24 hr. **Group B (15 patients):** Intra-articular; over the fascia parallel to the incision line so that all the holes of the catheter remained under the skin. 120 ml solution of 72 ml saline + 48 ml bupivacaine (1ml = 5 mg) at an infusion rate of 5 ml/hour for 24 hr.				
122	Chan E (2014)	**Group A (66 patients):** control group; no intervention **Group B (69 patients):** Single-injection femoral nerve block; 20 ml of 0.25% bupivacaine with 1:400,000 adrenaline (2.5 mcg/ml) **Group C (65 patients):** continuous femoral nerve block; bupivacaine 0.125% 4 ml/hour at the PACU until postoperative day 3.	NA	Yes - PCA; bolus doses of morphine (1 mg) with 5-minute lockout (maximum 10 mg/hour), or fentanyl (20 g) dose with 5-minute lockout (maximum 240 g/hour) for patients at risk of developing renal impairment	NA	No
123	Kim D (2014)	**Group A (46 patients):** Ultrasound-guided adductor canal block; was performed at mid-thigh level, before surgery. 15 cc of 0.5% of bupivacaine with 5 µg/ml Epi. **Group B (47 patients):** Ultrasound-guided femoral nerve block; with nerve stimulator confirmation, before surgery. 30 cc of 0.25% of bupivacaine with 5 µg/ml Epi.	Combined spinal and epidural anesthesia	Yes – PCA (10 µg/ml hydromorphone, 0.06% bupivacaine) was used for postoperative days (PODs) 0 to 2. Initial settings were 4 ml/h of continuous infusion, 4-ml bolus on demand every 10 min as needed, maximum total of 20 ml/h.	Yes	No
124	Kim TW (2014)	**Group A (42 patients):** control group; saline peri-articular infiltration **Group B (43 patients):** single-dose peri-articular infiltration. Ropivacaine 180 mg (24 mL) and Epi **Group C (43 patients):** single-dose peri-articular infiltration. Ropivacaine 180 mg (24 mL), morphine sulphate 5 mg (5 mL) **Group D (43 patients):** single-dose peri-articular infiltration. Ropivacaine 180 mg (24 mL), morphine sulphate 5 mg (5 mL), ketorolac 30 mg (1 mL).	Spinal Anesthesia	Yes - PCA; Fentanyl	Yes	No
125	Lamplot J (2014)	**Group A (19 patients):** peri-articular infiltration; around the posterior capsule in the posteromedial and posterolateral soft tissues, synovium, pes anserinus and iliotibial band at Gerdy's tubercle. 30 cc 0.5% bupivacaine, 10 mg MSO4 and 15 mg	NA	Yes - PO opioids	Yes	Gabapentin

		ketorolac. **Group B (17 patients):** control group; no intervention.				
126	Leownorasate M (2014)	**Group A (21 patients):** Peri-articular infiltration; Diclofenac (75 mg) 3 ml, levobupivacaine (5 mg/ml) 20 ml, 5 mg of morphine, and 1 ml of Epi in saline total volume 100 ml. **Group B (21 patients):** control group; no intervention.	Spinal Anesthesia	Yes - PCA; morphine bolus of 1 mg with a lock-out of six minutes, and a maximum of 15 mg/hr	No	No
127	Liu J (2014)	**Group A (108 patients):** Posterior approach to lumbar plexus block + sciatic nerve block; nerve stimulator guidance. 25–30 mL of 0.35% ropivacaine was injected in divided doses, and 15–25 mL of 0.35% ropivacaine for the sciatic block **Group B (105 patients):** control group; no intervention.	GA (TIVA)	Yes - PCA; sufentanil 1.25 μg/hour as background dose and 1.25 μg bolus with an 8-minute lockout time	Yes	NA
128	Mangar D (2014)	**Group A (20 patients):** Continuous femoral nerve block nerve stimulator technique. All patients received a single-injection sciatic nerve block preoperatively, placed via the anterior approach using the nerve stimulator, and received 10 ml 0.5 % ropivacaine; before anesthesia. Fentanyl 3 mcg/ml basal rate of 10 ml/h for 24 hr **Group B (20 patients):** continues femoral with single sciatic block; ropivacaine 0.1 % basal rate of 10 ml/h for 24 hr **Group C (20 patients):** control group; saline femoral and sciatic blocks.	GA (volatile)	Yes - fentanyl 5 mcg/ml via a patient-controlled analgesia (PCA) pump at 6 ml/h.	NA	No
129	Moghtahael M (2014)	**Group A (18 patients):** single femoral nerve injection, nerve stimulator, 20cc ropivacaine (10mg/cc); after surgery. **Group B (20 patients):** peri-articular infiltration; combination of 300mg ropivacaine, 30mg ketorolac and 0.5mg Epi diluted to a volume of 150cc and locally injected in and around the knee joint in 3 stages	Spinal Anesthesia	Yes - Opioids; morphine IV by the nurse	Yes	No
130	Niemelainen M (2014)	**Group A (27 patients):** peri-articular infiltration; a mixture of levobupivacaine (150 mg), ketorolac (30 mg), and Epi (0.5 mg) **Group B (29 patients):** control group; no intervention.	Spinal Anesthesia	Yes - PCA; oxycodone (dose: 2 mg; lock-out time: 8 min)	Yes	No
131	Peng L (2014)	**Group A (140 patients):** Continuous femoral nerve block; before the induction of anesthesia; ultrasound guidance and nerve stimulator. 10mL 2% lidocaine and 10mL 1% ropivacaine as an initial dose, 30 minutes before the end of the operation, the catheter was connected to the PCA pump; the patients received a loading dose of 5mL of 0.15% ropivacaine followed by an infusion of 0.15% ropivacaine at 5mL/h, with bolus of 5mL and lock time of 30 min. Preoperatively, a loading dose of 30mL was injected for intraoperative analgesia. **Group B (140 patients):** control group; no intervention.	GA (volatile)	Yes - Opioid; Pethidine, Tramadol	Yes	No
132	Safa B (2014)	**Group A (35 patients):** received a single-shot femoral nerve block and sham posterior articular injection using a nerve stimulator (with	Spinal Anesthesia	Yes - PCA; hydromorphone	Yes	Gabapentin

		or without ultrasound guidance). 20 cc of Ropivacaine 0.5% deposited adjacent to the femoral nerve; likewise, 20 cc of Ropivacaine 0.5% or normal saline was deposited adjacent to the sciatic nerve. **Group B (33 patients):** received a posterior articular injection and a sham femoral nerve block + single-shot SNB using a nerve stimulator (with or without ultrasound guidance). **Group C (32 patients):** control group; sham sciatic and sham posterior articular injection.		pump for 48 h and oxycodone		
133	Sahin L (2014)	**Group A (51 patients):** US-guided, and nerve stimulator, single-injection femoral nerve block, before surgery. 40 ml of 0.5% bupivacaine and Epi. **Group B (53 patients):** control group; saline femoral block.	Spinal Anesthesia	Yes - PCA; 2 mg intravenous morphine on demand with a lockout time of ten minutes for the first 48 hours after operation	Yes	No
134	Shah N (2014)	**Group A (48 patients):** continuous adductor canal block, approximately halfway between the anterior superior iliac spine and the patella, at the mid thigh level; adductor canal was visualized using a high-frequency linear ultrasound transducer. 30 cc of ropivacaine 0.75% followed by repeated boluses of ropivacaine 0.25%, 30 cc at an interval of 4 h till 8:00 am on the morning of the second day after surgery. **Group B (50 patients):** continuous femoral nerve block, nerve stimulator. Ultrasound guidance was used as needed in obese patients only to verify femoral nerve anatomy. 30 cc of ropivacaine 0.75% followed by repeated boluses of ropivacaine 0.25%, 30 cc at an interval of 4 h till 8:00 am on the morning of the second day after surgery.	Spinal Anesthesia	Yes - Tramadol	Yes	No
135	Spangehl M (2014)	**Group A (79 patients):** continuous femoral nerve with a single shot sciatic block (nerve stimulator or ultrasound; not standardized), before surgery. Bolus of 30 mL 0.5% ropivacaine without epinephrine for femoral nerve and 10 mL 0.5% ropivacaine without epinephrine for sciatic nerve. After the knee arthroplasty, a 0.2% plain ropivacaine infusion was started through the femoral catheter. The infusion range was 6 mL to 12 mL/hour, typically starting at 6 at 8 mL/hour and increased or decreased by 1 mL every hour as needed. The infusion was discontinued on the morning of postoperative day 2. **Group B (81 patients):** peri-articular infiltration; cocktail, based on three weight categories, of ropivacaine, epinephrine, ketorolac, and morphine sulphate with normal saline added to bring the volume to 120 mL.	GA (volatile)	Yes - Oxycodone and Morphine	Yes	Gabapentin

136	Surdam J (2014)	**Group A (40 patients):** Single shot femoral block performed under ultrasound, nerve stimulator, before surgery. 40 ml of 0.5% ropivacaine with 1:200,000 epinephrine, plus 30 mg of 1% tetracaine. **Group B (40 patients):** Exparel group; periarticular infiltration. 266 mg of the liposomal bupivacaine in the operating room. The 20 ml vial of 1.3% liposomal bupivacaine (1 vial; 266 mg) was first mixed with 40 ml of injectable saline to make up a combined total volume of 60 ml to be injected into the periarticular tissues.	Spinal Anesthesia	Yes - Oxycodone and hydrocodone	Yes	NA
137	Tsukada S (2014)	**Group A (61 patients):** epidural analgesia; continuous infusion (a flow rate of 4 mL/h for 24 hr) of 100 mL of 2 mg/mL of ropivacaine (8 mg/h), and 0.8 mL of 10 mg/mL of morphine hydrochloride hydrate. **Group B (50 patients):** peri-articular infiltration; 60-mL cocktail (7.5 mg/mL of ropivacaine [40 mL], 10 mg/mL of morphine hydrochloride hydrate [0.8 mL], Epi [0.3 mL], methylprednisolone [40mg] [1 mL], ketoprofen [50mg] [2.5 mL], and 15.4 mL of normal saline solution) was prepared in three 20-mL syringes.	Spinal Anesthesia	No	Yes	No
138	Uesugi K (2014)	**Group A (100 patients):** peri-articular infiltration; A mixture of 20 ml of 0.75% ropivacaine (Anapeine injection 7.5 mg/mL), physiological saline 20 mL, Epi, morphine hydrochloride (men 10 mg, women 5 mg), and dexamethasone 3.3 mg. **Group B (100 patients):** femoral and sciatic nerves block after surgery; nerve stimulator only. 20 mL of 0.75% ropivacaine was injected for femoral and 10 for sciatic (same)	Spinal Anesthesia	No	Yes	No
139	Wu J (2014)	**Group A (30 patients):** Femoral nerve block with catheter, nerve stimulator and US guidance; before anesthesia. Bolus of 15 mL 0.5% levobupivacaine, continuous infusion of 8 to 12 mL/h of 0.08% levobupivacaine postoperatively in the recovery area till POD 3. **Group B (30 patients):** control group; no intervention.	Epidural Anesthesia	Yes; morphine, tramadol, PCA only in the PCA group	Yes	No
140	Jæger P (2014)	**Group A (14 patients):** Adductor canal block was performed after the end of surgery, US guidance. Linear ultrasound transducer was placed on the medial part of the thigh, halfway between the superior anterior iliac spine and the patella with the leg slightly externally rotated. The femoral artery was identified in short axis in the adductor canal, underneath the sartorius muscle. The needle tip was placed underneath the sartorius muscle, just lateral to the artery and saphenous nerve, using 2–3 ml of saline to ensure correct placement. 30 ml 0.75% ropivacaine followed by another bolus of 15 ml 6 hours later. Immediately after the second bolus, infusion of 0.2% ropivacaine at a rate of 8 ml/hr. **Group B (16 patients):** control group; saline adductor canal block.	GA (TIVA)	Yes - Morphine bolus 2.5 mg, lock-out time 10 minutes, no background infusion	Yes	No

141	Zhang W (2014)	**Group A (30 patients):** adductor canal block, after surgery, ultrasound guidance; locate the adductor canal (approximately 8–12 cm below the inguinal crease). 20 ml of 0.33% ropivacaine, then 0.2% ropivacaine through the catheter, continuous dose being 5 ml/hr, and the bolus dose being 5 ml, with a lock time of 30 minutes for 48 hr. **Group B (30 patients):** femoral nerve block, after surgery, with nerve stimulator. 20 ml of 0.33% ropivacaine, then 0.2% ropivacaine through the catheter, continuous dose being 5 ml/h, and the bolus dose being 5 ml, with a lock time of 30 minutes for 48 hr.	Combined spinal and epidural anesthesia	Yes - Meperidine	Yes	No
142	Zinkus J (2014)	**Group A (18 patients):** epidural analgesia; Bupivacaine 0.125% and fentanyl 5 mcg/ml at rate of 3-5 ml/hr. **Group B (18 patients):** Lumber plexure block; Bupivacaine 0.125% and fentanyl 5 mcg/ml at rate of 5-12 ml/hr	Spinal Anesthesia	Yes	Yes	No
143	Chen C (2015)	**Group A (30 patients):** Acupuncture; knee, scalp, and auricular acupuncture (AA). Patients assigned to the study group received 1 session of acupuncture and AA under general anesthesia. Each session of acupuncture lasted 20 minutes. Ear needles were embedded in ear acupoints and firmly fixed with 3 layers of adhesive tape during the 3 days after surgery. Disposable 1-time-use acupuncture needles and AA needles were used in this study. The acupoints were chosen according to the theory of traditional Chinese medicine to treat knee arthralgia and included the following body acupoints: SP10, ST34, BL40, LR7, ST36, sensory area of the scalp acupuncture, GV20, and GV24; and Chinese auricular acupoints: ear Shen men (shemen, TF4), knee point (xi, AH4), sympathesis point (jiaogan, AH6a), and subcortex point (pizhixia, AT4). **Group B (30 patients):** control group; sham punctures.	GA (volatile + Nitrous oxide)	Yes - PCA; fentanyl 0.2 μg/kg per hour and a bolus of 10 μg with a 5 minute lockout period for 48 hours	Yes	No
144	Al-Zahrani T (2015)	**Group A (25 patients):** epidural analgesia; Infused with 0.0625% bupivacaine + fentanyl (2 mcg/ml) with rate 5–10 ml/hour was started after initial bolus of 10 ml of 0.25% bupivacaine + 50 mcg fentanyl preoperatively. **Group B (25 patients):** ultrasound-guided continues femoral with single sciatic blocks; at a rate of 5 ml/hour 0.2% bupivacaine after initial bolus of 10 ml 0.25% bupivacaine + single shot sciatic nerve block with 15 ml of 0.25% bupivacaine.	GA (volatile)	Yes - PCA morphine 1 mg of morphine sulfate with a lockout of 8 minutes without background infusion	Yes	No
145	Wang F (2015)	**Group A (23 patients):** continues femoral nerve block, ultrasound and nerve stimulator guided. After surgery, 0.2% ropivacaine (20 mL) was injected via the catheterfor analgesia. 0.2%ropivacaine was injected at a rate of 8 mL/h, the pulse dose of 5 mL and lock-out time of 30 min.	GA (volatile)	NA	NA	NA

		Group B (22 patients): epidural analgesia; after surgery, 0.2% ropivacaine (20 mL) was injected via the catheter for analgesia. 0.2% ropivacaine was injected at a rate of 5 mL/h, pulse dose of 2 mL and lock-out time of 30 min.				
146	Song MH (2015)	**Group A (40 patients):** control group; no intervention. **Group B (40 patients):** peri-articular infiltration; 300 mg of ropivacaine (0.75 %), 30 mg of ketorolac, 10 mg of morphine, 0.5 mg of Epi and 40 mg of triamcinolone. These were mixed with normal saline solution to a total volume of 100 ml	Spinal Anesthesia	Yes – PCA;	Yes	Pregabalin
147	Ren L (2015)	**Group A (109 patients):** continues femoral nerve block; before surgery, ultrasound-guided and nerve stimulator for 3 days. 0.2% ropivacaine dubbed in 300 ml. Analgesia pump parameters: a loading dose of 5 ml; background infusion rate 5 ml / h; single dose 5 ml; safety lock time 30 min. **Group B (102 patients):** control group; no intervention.	GA (volatile)	Yes - tramadol, meperidine and PCA a loading dose of 5 ml; background infusion rate 1 ml / h (adjustment range: 0.5 ~ 1.5 ml / h); single dose 2 ml; safety lock time 15 min.	Yes	No
148	Shen SJ (2015)	**Group A (16 patients):** control group; saline infiltration. **Group B (20 patients):** intra-articular injection; After the closure of the surgical wound, an intra-articular injection of 0.5% bupivacaine 60mL (300mg).	GA (volatile)	Yes - Meperidine	Yes	No
149	Kutzner KP (2015)	**Group A (60 patients):** intra-articular continues infusion; 200 ml of ropivacaine (7.5 mg / ml) 2 ml of morphine (10 mg / ml) and 148 ml of saline and contains a continuous Infusion rate of 8 ml / hr for guaranteed a total of about 44 hours. Also patients periarticular infiltration the capsule, the retinaculum and subcutaneous soft tissue with a mixture of 15 ml of ropivacaine (7.5 mg / ml) and 10 ml of saline. **Group B (60 patients):** continues femoral block; robivacaine 8 ml/hr (2 mg/ml).	GA (volatile)	Yes - oxycodone	Yes	No
150	Sayed A (2015)	**Group A (30 patients):** Continues Femoral; nerves stimulator and ultrasound, before surgery. 20 ml of 0.25% levobupivacaine was injected through the perineural catheter. At the conclusion of the surgery, 5 ml bolus of 0.125% levobupivacaine was injected through the perineural catheter followed by a basal continuous infusion at a rate of 5 ml/h same late concentration. **Group B (30 patients):** Continues Psoas block: nerve stimulator and ultrasound, before surgery. 20 ml of 0.25% levobupivacaine was injected through the perineural catheter. At the conclusion of the surgery, 5 ml bolus of 0.125% levobupivacaine was injected through the perineural catheter followed by a basal	GA (volatile)	Yes - IV morphine	Yes	No

		continuous infusion at a rate of 5 ml/h same late concentration.				
151	Kurosaka K (2015)	**Group A (21 patients):** Peri-articular infiltration; (single dose) half of the collateral ligaments just prior to cementing the implants. The remaining solution was solution was injected into the posterior part of the capsule, the intercondylar area, and around injected into the anterior part of the capsule and the subcutaneous tissue after implantation. Containing 7.5 mg/mL of ropivacaine, (40 ml) 20 mg/mL of ketoprofen (5 ml), 1 mg/mL of epinephrine (0.5 ml), and 40 mL of saline. **Group B (21 patients):** Continues femoral block; ultrasound-guided, following induction of general anesthesia. A total of 20 mL of 2.0 mg/mL of ropivacaine was injected around the femoral nerve as an initial block. Postoperatively, 1.5 mg/mL of ropivacaine was continuously infused at the rate of 5 mL per hour for 48 hours through the catheter.	GA (volatile)	Yes - PCA morphine (1 mg/dose) on demand with a lock-out time of five minutes and no background infusion, for 24 hr	Yes	No
152	Milani P (2015)	**Group A (32 patients):** control group; saline infiltration. **Group B (32 patients):** peri-articular injections; The solution was injected into posteromedial and posterolateral corners, posterior capsule, quadriceps and wound margins. Ropivacaine 1% 20 mL 200 mg.	Spinal Anesthesia	Yes - Oxycodone	Yes - Ketorolac	No
153	Mulford J (2015)	**Group A (25 patients):** control group; peri-articular saline infiltration. **Group B (25 patients):** Peri-articular infiltration; injection was performed just prior to the implantation of the prosthesis with catheter placement. Two doses (intra-op and in the first day): composed of 300 mg of ropivacaine (2 mg/ mL), 30 mg of ketorolac and 0.5 mg of adrenaline to a total volume of 150 mL THE second dose was 100 mL	GA (volatile)	Yes - PCA morphine	Yes	No
154	Hegazy N (2015)	**Group A (53 patients):** adductor canal block, ultrasound guided; after spinal anesthesia; Saphenous nerve was localized at medial side of the mid-thigh just deep to the sartorius muscle, usually lateral to the femoral artery, as a hyperechoic structure. ropivacaine 0.5% 20 ml. **Group B (54 patients):** Femoral block; ultrasound guided; after spinal anesthesia. ropivacaine 0.5% 20 ml.	GA (TIVA)	Yes - PCA morphine	Yes	Gabapentin
155	Kasture S (2015)	**Group A (35 patients):** epidural analgesia; 300 ml of 0.125% bupivacaine with 300 mcg fentanyl injection for 48 hr. **Group B (40 patients):** peri-articular infiltration; 300 ml of 0.125% bupivacaine with 5 ml ketorolac injection for 48 hours at 5 ml/hr for 48 hr	Spinal Anesthesia	Yes - Tramadol	Yes	No
156	Tsukada S (2015)	**Group A (37 patients):** peri-articular infiltration; 40 mL of ropivacaine (Anapeine, 7.5 mg/mL), 1.0 mL of morphine hydrochloride hydrate (10 mg/mL), 0.6 mL of Epi (1.0 mg/mL), 80	Spinal Anesthesia	No	Yes	No

		mg of methylprednisolone, and 50mg of ketoprofen. These agents were mixed with normal saline solution to a combined volume of 120 mL, and 60mL of the mixture was injected into each knee with use of the injection technique proposed by Busch et al **Group B (33 patients):** epidural analgesia; continuous infusion (flow rate, 4 mL/hr) of 100 mL of 2-mg/mL ropivacaine (8 mg/hr) plus 1.0 mL of 10-mg/mL morphine hydrochloride hydrate (0.4 mg/hr).				
157	Memtsoudis SG (2015) **bilateral TKA**	**Group A (30 patients):** Adductor canal block, US-guided, 15 ml bupivacaine 0.25 %. **Group B (29 patients):** Femoral, US-guided, 30 ml of bupivacaine 0.25 %.	Epidural Anesthesia (with sedation)	Yes	NA	No
158	Olive DJ (2015)	**Group A (28 patients):** Femoral, nerve stimulator guided, before surgery, infusion. A loading dose of 20 ml of 0.75% ropivacaine with Epi, followed by 0.2% ropivacaine at 12 ml/hr until the morning of postoperative day (POD) two. **Group B (27 patients):** Spinal; intra-thecal morphine.	Spinal Anesthesia	Yes - PCA morphine	Yes	No
159	Barrington JW (2016)	**Group A (40 patients):** liposomal bupivacaine (Exparel); 20 mL of 1.3% liposomal bupivacaine with 25 mL of 0.5% bupivacaine, 30 mg ketorolac, 1 mg of 1:1000 epinephrine, in Normal saline to make 60 mL total **Group B (38 patients):** Periarticular infiltration; 50 mL of 0.5% ropivacaine, 30 mg ketorolac, 1 mg of 1:1000 epinephrine, in Normal saline to make 60 mL total	Spinal Anesthesia	Yes	Yes	No
160	Beausang DH (2016)	**Group A (50 patients):** ACB, after surgery, infusion, US-guided. "15 cc of 0.5% ropivacaine, infusion of 0.2% ropivacaine at 10cc/h via the On-Q system for a maximum of 48 hours" **Group B (46 patients):** Periarticular infiltration, infusion; infusion of 0.5% bupivacaine via the On-Q system for 48 hours	Spinal Anesthesia	Yes	Yes	Pregabalin
161	Elkassabany NM (2016)	**Group A (31 patients):** ACB, before surgery, US-guided, infusion; A bolus of 20 mL ropivacaine 0.5% was injected in increments of 5 mL. A bolus of 20 mL ropivacaine 0.5% was injected in increments of 5 mL until the morning of postoperative day (POD)1 **Group B (31 patients):** Femoral, before surgery, US-guided, infusion; A bolus of 20 mL ropivacaine 0.5% was injected in increments of 5 mL. A bolus of 20 mL ropivacaine 0.5% was injected in increments of 5 mL until the morning of postoperative day (POD)1	Spinal or General	"Yes - intermittent IV boluses of hydromorphone or fentanyl & oxycodone"	Yes	Gabapentin
162	Henshaw D (2016)	**Group A (74 patients):** single-injection ultrasound-guided adductor canal block + sham lumber plexus; before anesthesia. 15 mL 0.25% bupivacaine with 5 µg/mL Epi and 1.67 µg/mL clonidine. **Group B (74 patients):** single-injection nerve stimulator–guided	Spinal Anesthesia	No	Yes	Pregabalin

		lumber plexus + sham adductor canal; before anesthesia. 25 mL 0.25% bupivacaine with 5 µg/mL epinephrine and 1.67 µg/mL clonidine.				
163	Wiesmann T (2016)	**Group A (21 patients):** adductor canal block with Sciatic block; ultrasound + nerve stimulator. The initial bolus volume of 15 ml of ropivacaine 0.375 % was injected via the catheter. The PCA pump filled with ropivacaine 0.2 % was connected afterwards with a continuous flow rate of 6 ml/h and a bolus function of 6 ml. Same for sciatic block. **Group B (21 patients):** Femoral with sciatic block; ultrasound + nerve stimulator. The initial bolus volume of 15 ml of ropivacaine 0.375 % was injected via the catheter. The PCA pump filled with ropivacaine 0.2 % was connected afterwards with a continuous flow rate of 6 ml/h and a bolus function of 6 ml. Same for sciatic block.	GA (volatile)	Yes	Yes	No
164	Vaishya R (2016)	**Group A (40 patients):** peri-articular infiltration; 75 mL of bupivacaine 0.25% 20 mL, morphine 15mg, ketorlac 30mg, and Epi **Group B (40 patients):** control group; saline infiltration.	Spinal Anesthesia	Yes – PCA	Yes	No
165	Fan L (2016)	**Group A (78 patients):** Femoral block; before anesthesia, with ultrasound and nerve stimulator. 20mL of ropivacaine 0.5% **Group B (79 patients):** peri-articular infiltration; 50 mL of cocktail mixture containing morphine (1 mL: 10 mg), ropivacaine (10 mL: 100 mg), and diprospan (1 mL: 5 mg betamethasone dipropionate and 2 mg betamethasone sodium phosphate).	NA	Yes – PCA	Yes	No
166	Schwarzkopf R (2016)	**Group A (20 patients):** liposomal bupivacaine (Exparel); 20cc mixed with 60cc saline, and 20cc 0.25% Marcaine injected with a different syringe. **Group B (18 patients):** peri-articular infiltration; 49.25cc 0.5% Ropivacaine, 0.8cc 100mg/ml Clonidine, 1cc 30mg/ml ketorolac, 0.5cc 1mg/ml Epi, and 48cc saline	Spinal anesthesia	Yes	Yes	Gabapentin
167	Jain RK (2016)	**Group A (82 patients):** Intra-articular injection; 30 mL of 0.25% bupivacaine with epinephrine and 10 mg of morphine **Group B (62 patients):** Periarticular infiltration, single; 30 mL of 0.25% bupivacaine with epinephrine and 10 mg of morphine **Group C (63 patients):** liposomal bupivacaine (Exparel); 60 mL for injection	Spinal Anesthesia	Yes - (oxycodone, hydrocodone, or hydromorphone)	Yes	No
168	Runge C (2016)	**Group A (23 patients):** Obturator and femoral block, US-guided, single; 10 mL and contained 46 mg of bupivacaine, 0.05 mg of epinephrine, 0.0375 mg of clonidine, and 2 mg of dexamethasone. **Group B (26 patients):** Femoral, US-guided, single; 10 mL and contained 46 mg of bupivacaine, 0.05 mg of epinephrine, 0.0375 mg of clonidine, and 2 mg of dexamethasone. **Group C (26 patients):** Periarticular infiltration; mixture consisted	Spinal Anesthesia	Yes	Yes	Gabapentin

		of 150 mL and contained 300 mg of ropivacaine, 0.75 mg of epinephrine, and 45 mg of ketorolac				
169	Sawhney M (2016)	**Group A (46 patients):** ACB, before surgery, US-guided, single; 30 mL of 0.5% ropivacaine **Group B (49 patients):** Periarticular infiltration, single; 110-mL normal saline solution containing 300 mg ropivacaine, 10 mg morphine, and 30 mg ketorolac or 110 mL saline 0.9%.	Spinal Anesthesia	Yes - hydromorphone PCA (0.2 mg bolus, 5-minute lockout, and a 4-hour maximum of 6 mg)	Yes	Gabapentin
170	Youm YS (2016)	**Group A (30 patients):** Femoral, nerve stimulator, before surgery; 10 mL of 0.375% ropivacaine **Group B (30 patients):** Peri-articular infiltration; 50 mL of solution, including 40 mL of 0.75% ropivacaine, 7.5-mg morphine sulfate, 0.3-mg epinephrine, 40-mg methyl prednisolone, 30-mg ketorolac, 500-mg cefoxitin, and additional normal saline	NA	Yes - PCA (1600-mg fentanyl + 80-mg nefopam)	Yes	Pregabalin
TIVA = total intravenous anesthesia, PCA = patient controlled analgesia, IV = intravenous, PO = per oral, GA = general anesthesia, NA = not available, Epi = epinephrine, POD = postoperative day						

Risk of bias assessment using Cochrane tool.

ID	Authors	Year	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias		Overall risk
1	Raj P	1987	H	H	H	H	H	U	H		H
2	Nielsen P	1989	H	L	H	U	U	U	H		H
3	Pettine K	1989	U	U	H	U	U	L	U		
4	Mahoney O	1990	U	H	H	H	U	U	H		
5	Serpell M	1991	U	U	H	U	U	L	U		
6	Edwards N	1992	U	U	H	U	U	L	U		H
7	Sharrock	1994	U	U	H	H	U	L	U		H
8	Badner N	1996	L	U	L	U	L	H	U		
9	Hirst G	1996	U	U	U	L	U	L	U		
10	Williams-Russo	1996	L	U	H	U	U	U	U		
11	Mauerhan D	1997	L	L	L	L	L	L	L		
12	Allen H	1998	U	U	L	L	L	L	U		
13	Singelyn F	1998	L	U	H	U	U	L	U		
14	Tarkkila P	1998	U	H	H	U	U	L	H		H
15	Capdevlla X	1999	U	U	H	L	L	L	L		H
16	Ganapathy S	1999	U	U	L	L	U	H	U		H

17	Klasen J	1999	L	L	H	L	U	U	H		
18	Ritter M	1999	L	U	L	U	L	L	H		
19	Chelly J	2001	U	L	H	L	U	L	U		
20	McNamee D	2001	U	U	H	L	U	U	U		
21	Tanaka N	2001	U	U	L	L	U	U	U		
22	Adams H	2002	U	U	H	U	U	L	U		H
23	McNamee D	2002	U	U	H	U	U	L	U		H
24	Wang H	2002	U	L	L	L	U	H	U		
25	Browne C	2004	U	U	L	L	U	H	H		
26	Davies A	2004	L	L	H	L	L	U	L		
27	Kaloul I	2004	L	L	H	U	L	U	L		
28	Marcalou D	2004	L	L	H	L	L	L	U		H
29	Sites B	2004	L	L	H	U	L	U	U		
30	Szczukowski M	2004	L	L	L	L	U	H	L		
31	Axelsson K	2005	L	L	L	L	L	L	U		
32	Barrington M	2005	L	L	H	U	L	L	U		
33	Dang C	2005	L	U	H	U	L	L	U		
34	Farag E	2005	L	L	H	U	U	U	U		H
35	Morin A	2005	L	L	H	U	L	L	L		
36	Nechleba J	2005	L	U	L	U	L	U	H		
37	Busch C	2006	L	U	H	U	L	L	U		H
38	Mistraletti G	2006	L	L	H	U	L	L	L		
39	Ozen M	2006	L	L	H	H	U	L	U		
40	Park CK	2006	U	U	H	U	U	L	U		
41	Seet E	2006	U	U	H	U	L	L	U		
42	Tugay N	2006	U	U	H	U	U	U	U		
43	Vendittoli P	2006	L	U	H	U	U	L	U		
44	Zaric D	2006	L	L	H	U	L	L	L		
45	Good R	2007	L	U	L	L	L	L	U		
46	Han C	2007	L	U	L	L	L	L	L		H
47	Kardash K	2007	L	U	H	L	L	L	L		
48	Mejia-Terrazas	2007	U	U	H	L	H	L	H		
49	Ozalp G	2007	U	U	H	U	L	L	U		
50	Raimer C	2007	H	H	H	U	L	L	U		
51	Rajeev S	2007	L	U	H	U	L	U	U		H
52	Toftdahi K	2007	U	U	H	U	L	L	L		H
53	Zugliani A	2007	U	U	H	U	H	U	H		

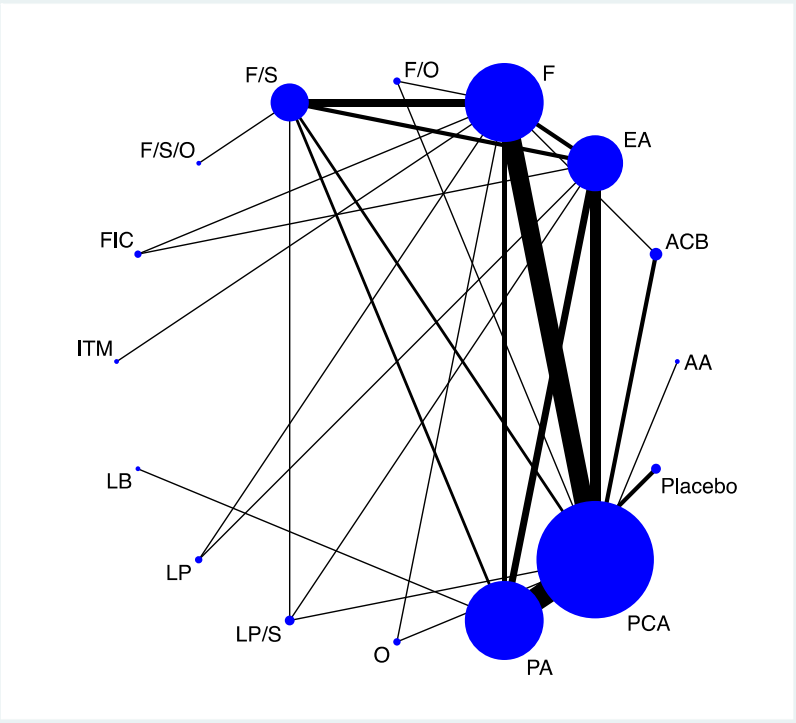
54	Parvataneni	2007	L	U	H	H	L	U	H		H
55	Bagry H	2008	U	U	H	U	U	H	H		
56	Campbell A	2008	L	U	H	U	L	U	U		H
57	Casati A	2008	L	L	H	U	U	L	H		H
58	Martin F	2008	U	U	H	U	L	L	U		
59	Anderson L	2008	L	L	L	U	H	H	H		
60	Bozkurt M	2009	H	H	H	H	L	L	H		H
61	Essving P	2009	L	L	H	L	L	L	L		
62	Fu P	2009	L	L	L	L	L	L	U		H
63	Hunt K	2009	H	U	H	L	L	L	H		
64	Kadic L	2009	L	L	H	U	L	L	U		
65	Park JM	2009	U	U	H	U	U	U	H		
66	Shum C	2009	U	U	H	U	U	L	U		H
67	Sundarathiti P	2009	L	U	H	U	U	L	U		
68	Anderson K	2010	L	L	H	U	L	U	U		
69	Bengisun Z	2010	L	L	L	U	U	H	U		
70	Carli F	2010	L	L	L	L	L	L	L		H
71	Essving P	2010	L	L	U	L	L	L	L		H
72	Frassanito L	2010	L	L	H	L	U	U	U		H
73	Fu P	2010	L	L	U	L	L	U	H		
74	Garcia J	2010	L	L	L	U	H	U	H		H
75	Gomez-Cardero	2010	L	L	L	L	H	U	H		H
76	Kazak B	2010	L	U	L	L	L	U	U		
77	McMeniman T	2010	L	L	H	L	H	U	U		
78	Ong J	2010	U	U	H	U	U	L	H		H
79	Rosen A	2010	L	L	L	U	U	U	U		H
80	Spreng U	2010	L	L	L	L	L	L	L		
81	Thorsell M	2010	U	H	H	H	H	H	H		H
82	Wang H	2010	L	L	H	L	U	L	H		
83	Affas F	2011	L	L	H	U	U	L	U		H
84	Baranovic S	2011	U	U	H	U	H	U	H		H
85	Essving P	2011	L	L	H	L	L	L	L		
86	Fetherston C	2011	H	H	H	H	U	U	H		
87	Gallardo	2011	L	U	L	H	L	L	U		H
88	Wegener	2011	L	L	H	U	L	L	U		H
89	Zhang S	2011	L	L	L	L	L	L	L		
90	Fajardo M	2011	U	U	L	U	U	L	H		

91	Joo JH	2011	L	L	L	L	H	U	H		
92	Carvalho	2012	L	L	H	L	U	L	U		
93	Chan M	2012	L	L	H	L	U	L	U		
94	Chang L	2012	L	U	H	L	U	L	U		
95	Chen Y	2012	L	L	U	L	U	L	U		H
96	Jaeger	2012	L	L	L	L	U	U	U		H
97	Jenstrup	2012	L	L	L	L	U	U	U		H
98	Lee J	2012	U	U	H	H	U	L	H		H
99	Ng F	2012	H	H	H	H	H	U	H		
100	Ng F	2012	L	U	H	L	U	H	U		
101	Shanthanna H	2012	L	U	H	U	U	H	U		H
102	Widmer	2012	L	U	H	L	L	U	U		
103	Yuenyongviwat	2012	L	L	L	L	U	L	U		
104	Ashraf	2013	U	L	H	L	H	H	U		
105	Chan E	2013	L	L	H	U	U	L	U		
106	Chaumeron	2013	L	L	L	L	L	L	L		
107	Dauri	2013	L	U	L	L	U	L	U		
108	Goyal	2013	L	U	L	L	U	L	U		
109	He B	2013	U	L	H	L	L	L	U		H
110	Ikeuchi	2013	U	U	H	U	U	L	U		H
111	Jaeger	2013	L	L	U	L	L	L	L		H
112	Bing-shan L	2013	U	U	H	H	U	L	U		H
113	Moghtahael	2013	U	U	H	U	U	U	H		
114	Nakai T	2013	U	H	H	H	H	U	H		
115	Sakai	2013	L	U	H	H	L	L	L		
116	Tammachote	2013	L	L	H	L	L	U	L		H
117	Williams	2013	L	U	L	L	L	L	U		H
118	Abdallah	2014	L	L	L	L	L	L	U		H
119	Albrecht	2014	L	L	L	L	L	H	U		
120	Anastase D	2014	U	U	H	U	H	H	H		H
121	Bedir E	2014	U	U	H	U	U	U	H		
122	Chan E	2014	U	U	H	U	L	L	U		H
123	Kim D	2014	L	L	H	L	L	L	H		H
124	Kim TW	2014	U	U	L	L	L	L	U		
125	Lamplot J	2014	U	L	H	U	L	L	H		
126	Leownorasate M	2014	U	H	H	H	U	L	U		H
127	Liu J	2014	L	L	H	L	U	L	U		

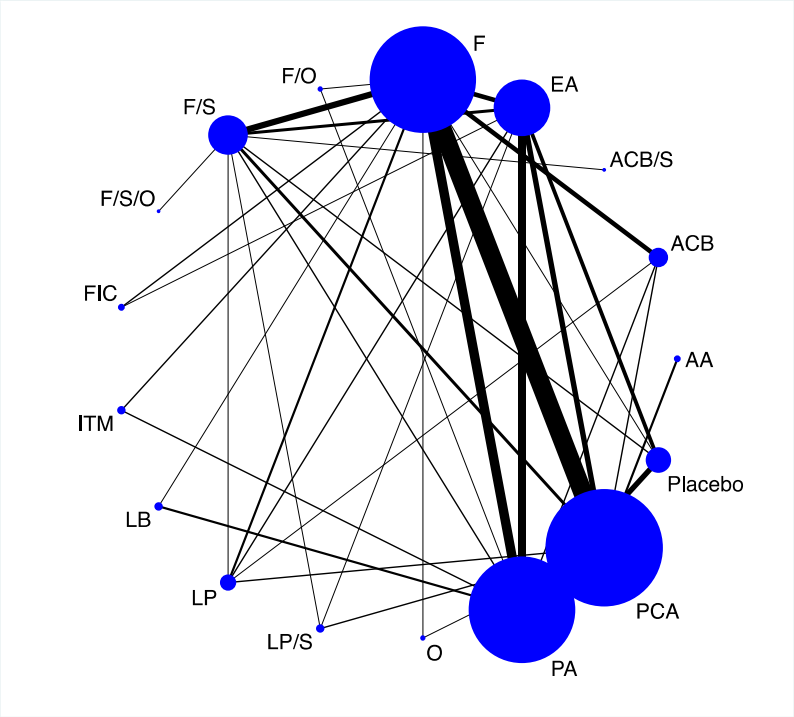
128	Mangar D	2014	L	U	L	L	L	L	L		
129	Moghtahael M	2014	L	H	H	L	U	L	H		
130	Niemelainen M	2014	L	L	L	L	L	L	L		
131	Peng L	2014	L	L	H	U	L	L	L		H
132	Safa B	2014	L	L	L	L	U	L	U		
133	Sahin L	2014	L	U	L	L	L	L	U		
134	Shah N	2014	L	U	H	L	L	L	H		H
135	Spangehl M	2014	L	L	H	L	L	L	L		H
136	Surdam J	2014	L	L	H	U	U	L	U		H
137	Tsukada S	2014	L	L	H	H	L	L	U		
138	Uesugi K	2014	L	L	H	U	L	H	U		H
139	Wu J	2014	L	L	H	H	U	U	U		H
140	Jæger P	2014	L	L	L	L	L	L	U		
141	Zhang W	2014	U	U	H	H	U	L	H		
142	Zinkus J	2014	U	H	H	H	U	U	H		H
143	Chen C	2015	L	L	H	U	L	L	U		
144	Al-Zahrani T	2015	L	L	H	L	L	L	L		
145	Wang F	2015	U	H	H	U	H	U	H		H
146	Song MH	2015	U	U	H	U	U	L	U		H
147	Ren L	2015	L	U	H	L	L	L	U		
148	Shen SJ	2015	L	U	L	L	U	U	H		H
149	Kutzner KP	2015	U	L	H	U	L	U	H		
150	Sayed A	2015	L	U	H	U	U	U	U		
151	Kurosaka K	2015	L	L	H	H	U	L	U		H
152	Milani P	2015	L	L	L	L	U	L	U		H
153	Mulford J	2015	L	L	L	U	U	U	U		
154	Hegazy N	2015	L	L	H	U	U	H	U		H
155	Kasture S	2015	H	H	H	H	U	U	H		
156	Tsukada S	2015	L	U	H	L	L	L	L		
157	Olive DJ	2015	L	L	H	L	L	L	U		
158	Memtsoudis SG	2015	L	L	H	L	L	U	H		H
159	Henshaw D	2016	L	L	H	L	L	H	L		
160	Wiesmann T	2016	L	L	H	L	L	L	L		
161	Vaishya R	2016	L	L	L	L	L	L	U		H
162	Fan L	2016	L	L	H	L	L	L	U		H
163	Schwarzkopf R	2016	L	L	L	L	L	L	H		H
164	Youm YS	2016	L	U	H	U	L	L	U		

165	Elkassabany	2016	L	L	U	L	L	L	L			
166	Sawhney M	2016	L	L	U	L	L	H	L			H
167	Beausang DH	2016	L	U	H	U	L	L	H			H
168	Jain RK	2016	L	H	H	L	U	L	U			H
169	Runge C	2016	L	L	L	L	L	L	U			
170	Barrington JW	2016	L	L	H	L	U	L	U			H
L = low risk					U = unknown				H = high risk			

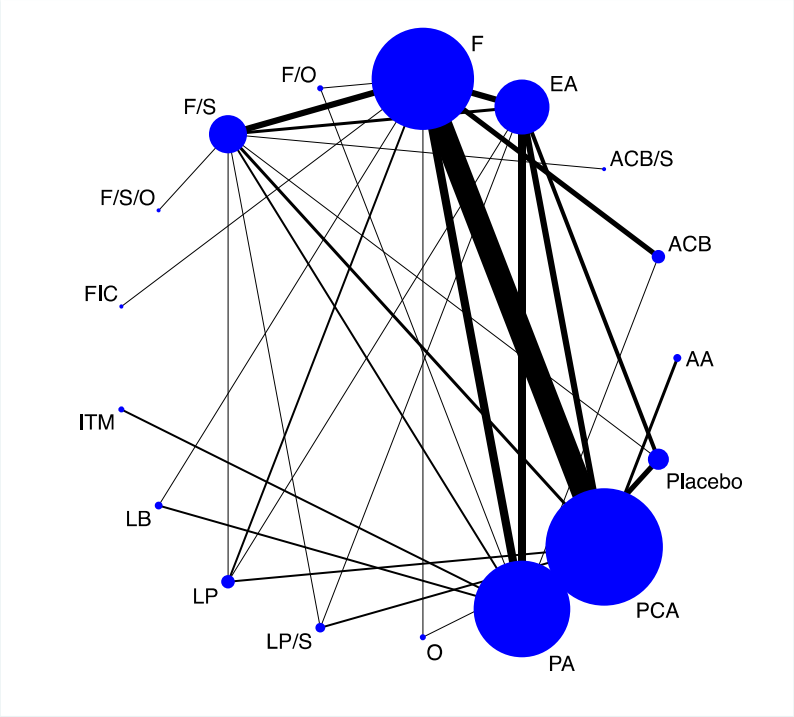
Network geometries (network plots)



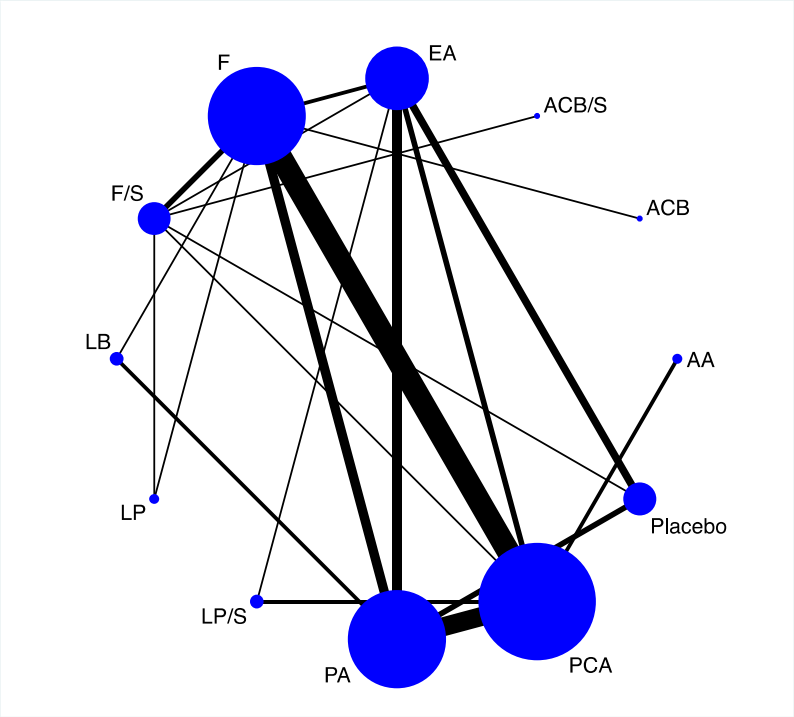
Pain at rest – 2 hr



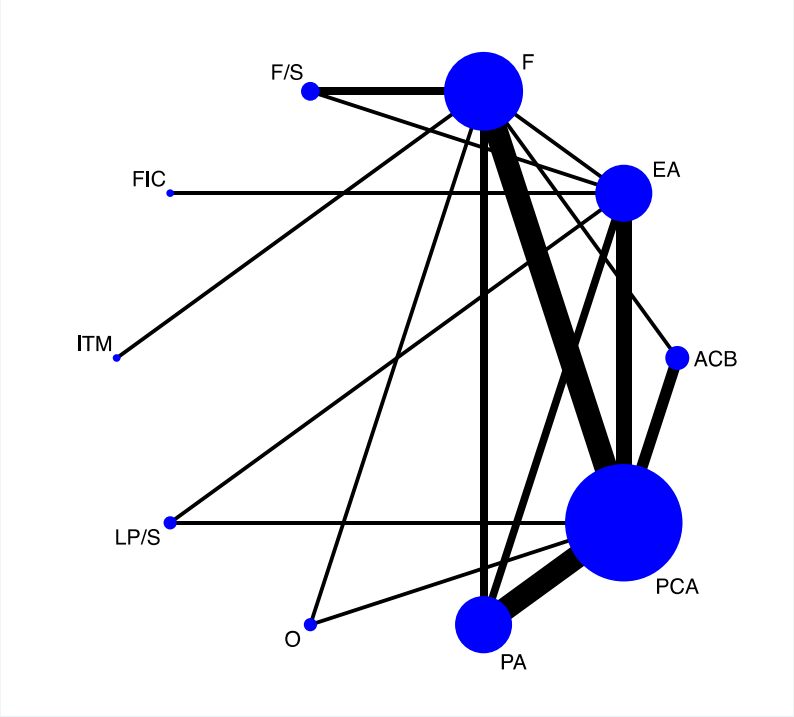
Pain at rest – 24 hr



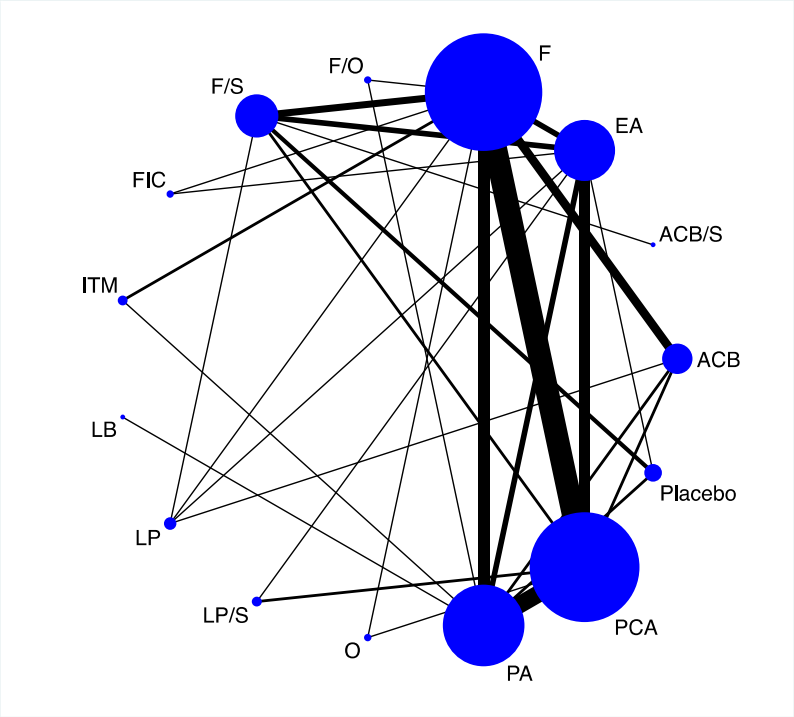
Pain at rest – 48 hr



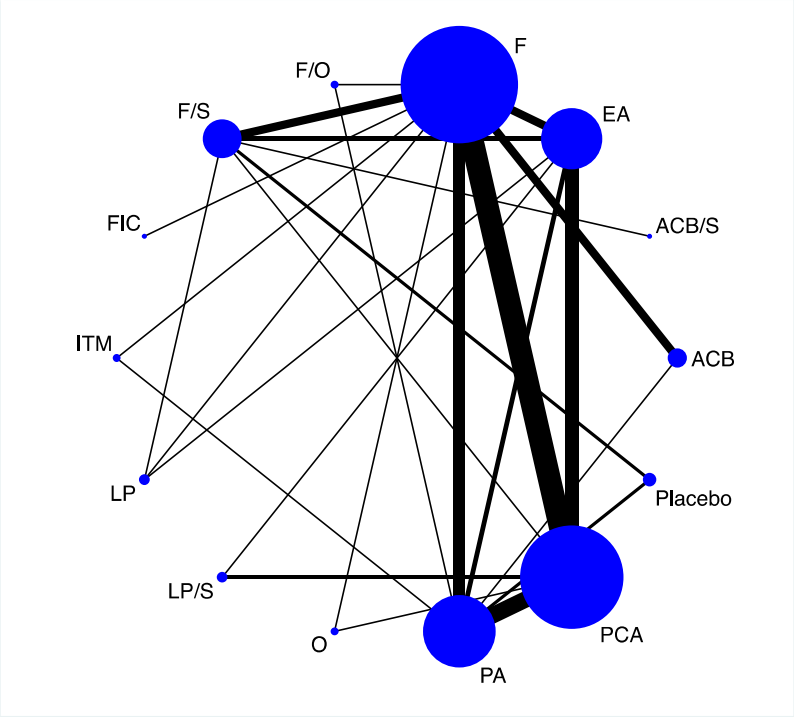
Pain at rest – 72 hr



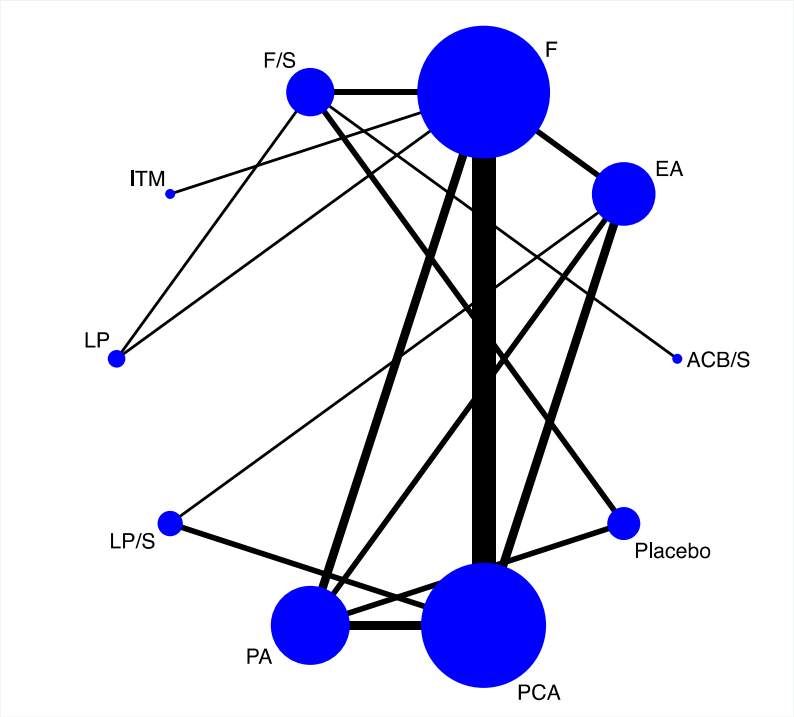
Pain at movement – 2 hr



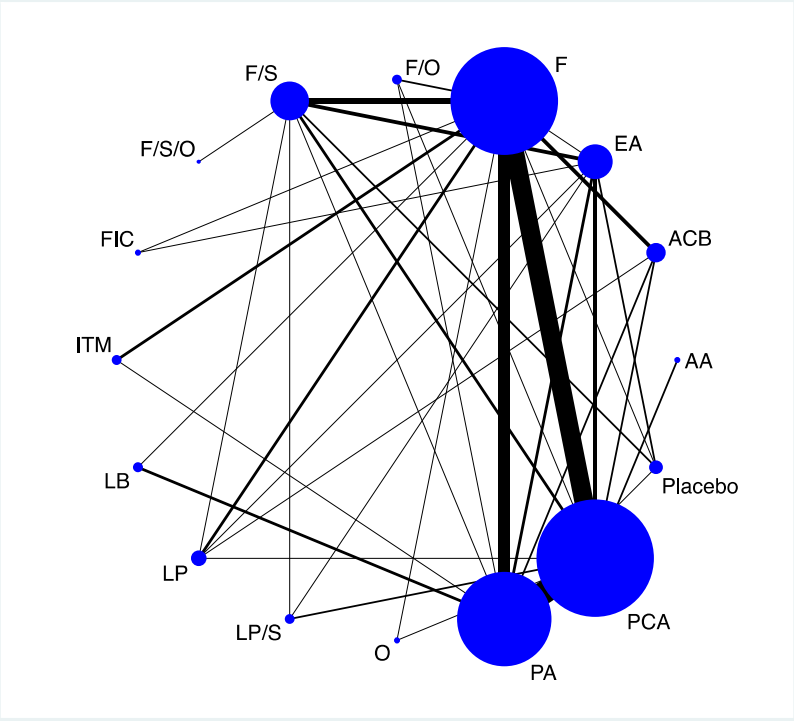
Pain at movement – 24 hr



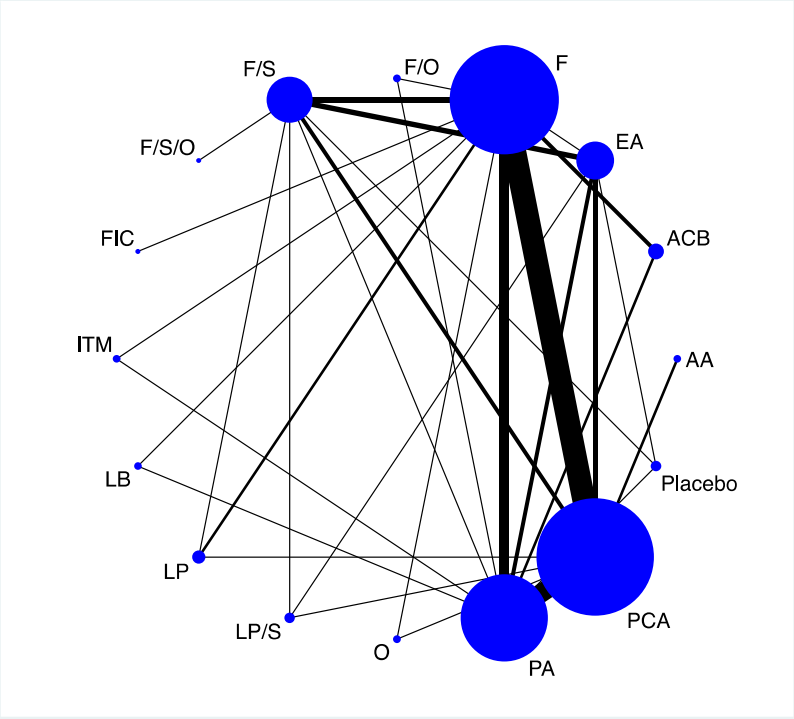
Pain at movement – 48 hr



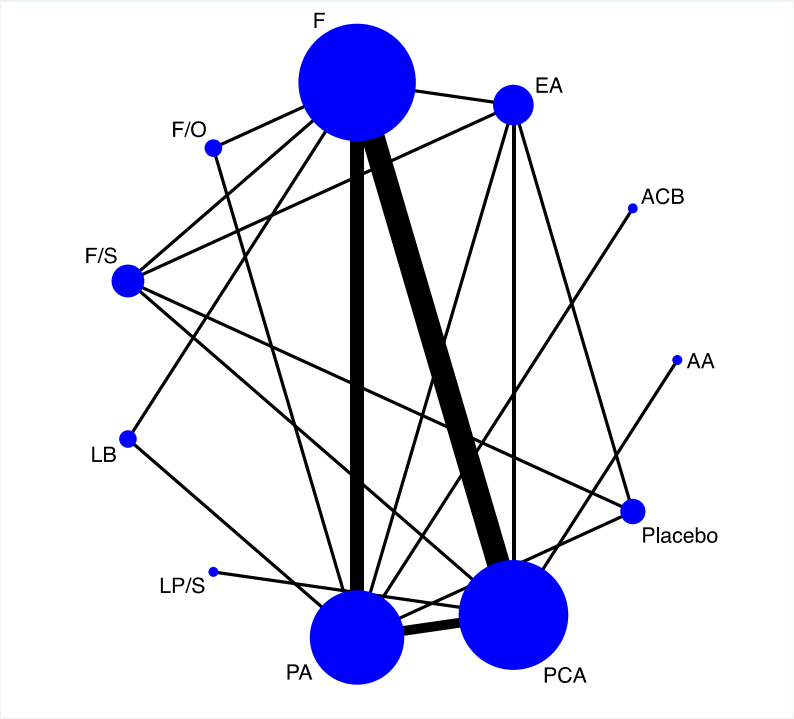
Pain at movement – 72 hr



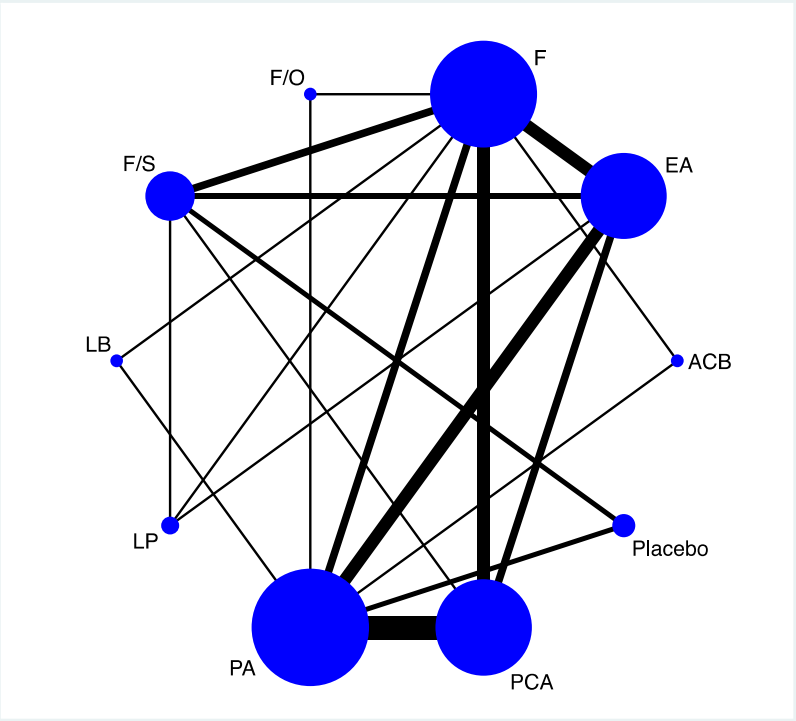
Opioid consumption – 24 hr



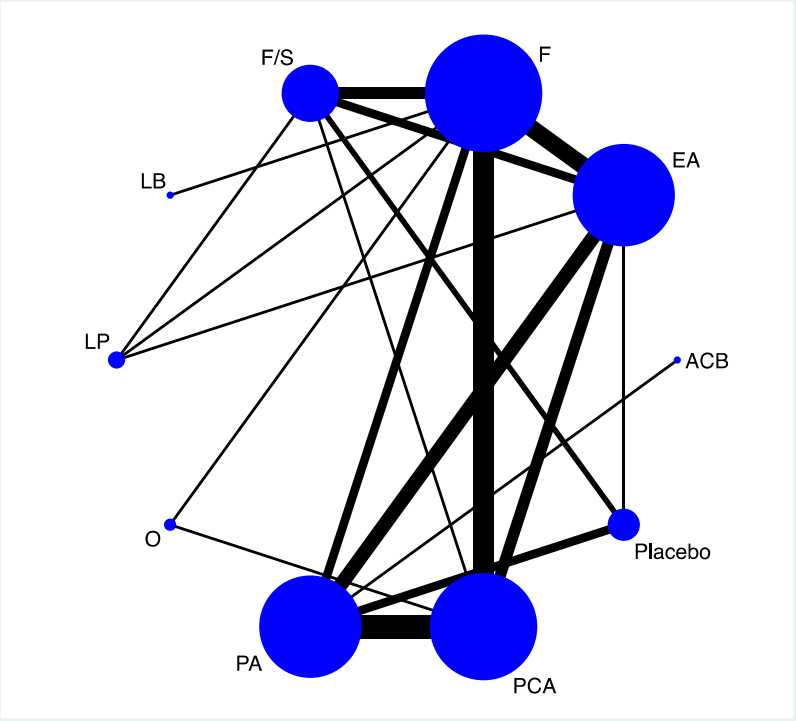
Opioid consumption – 48 hr



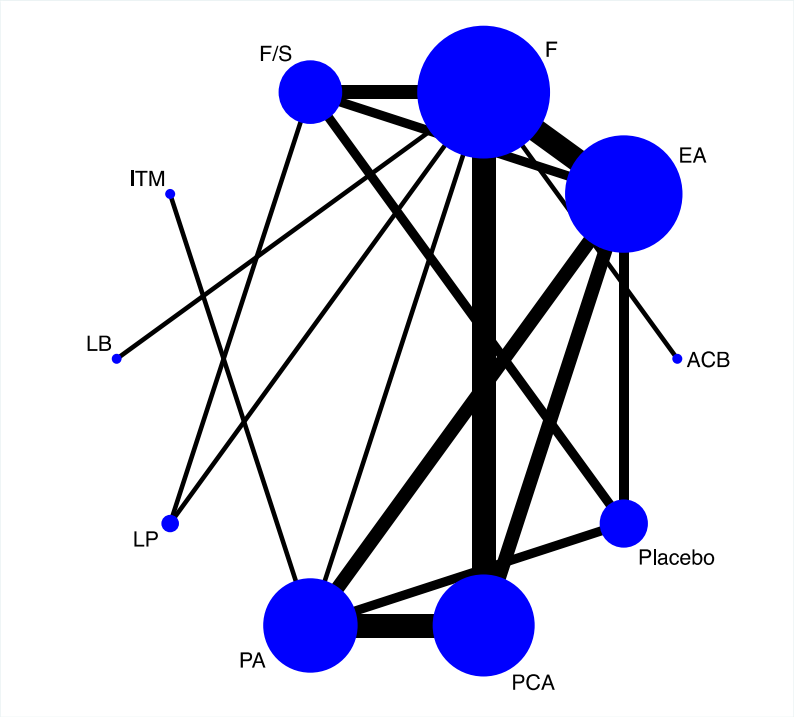
Opioid consumption – 72 hr



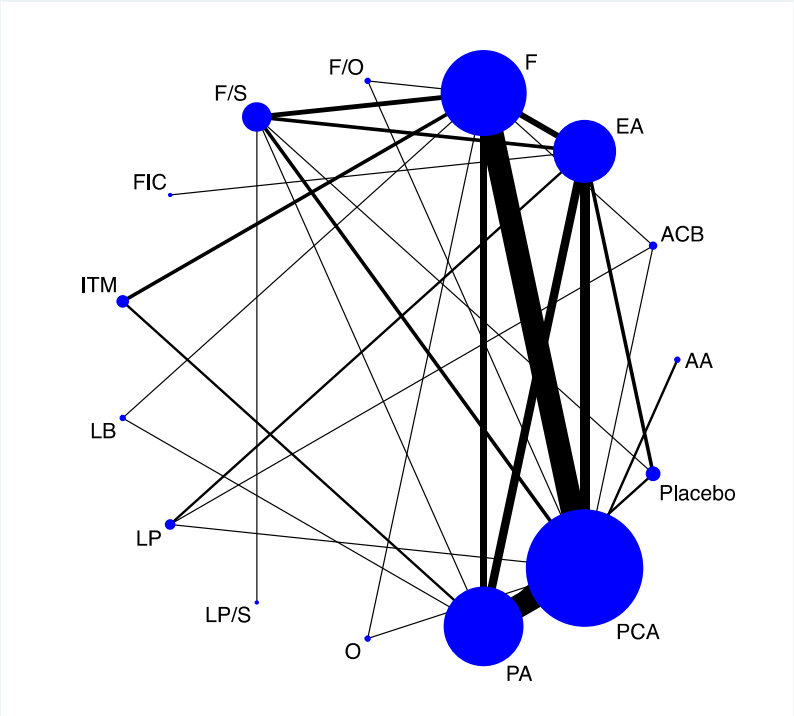
Range of motion and degree of flexion – 24 hr



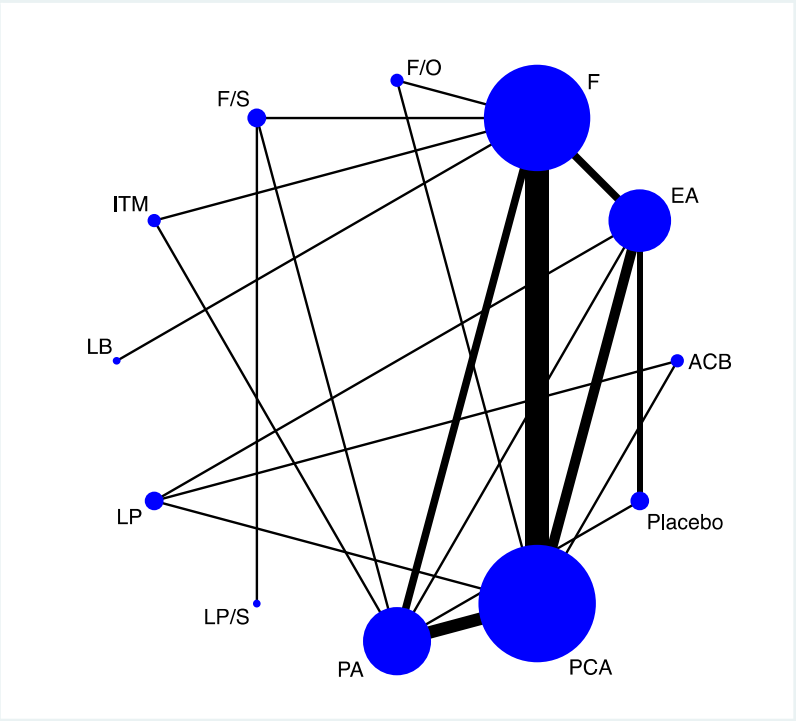
Range of motion and degree of flexion – 48 hr



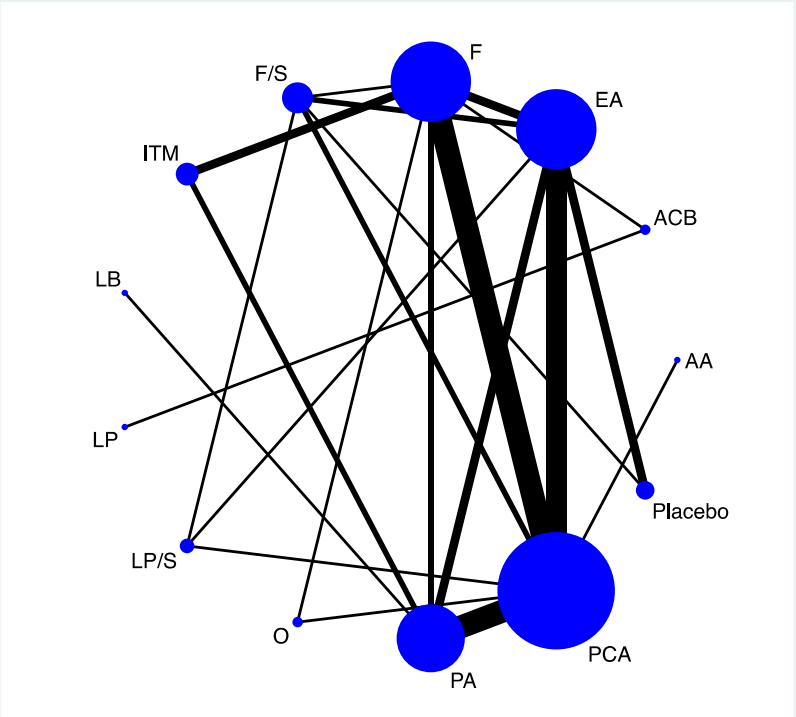
Range of motion and degree of flexion – 72 hr



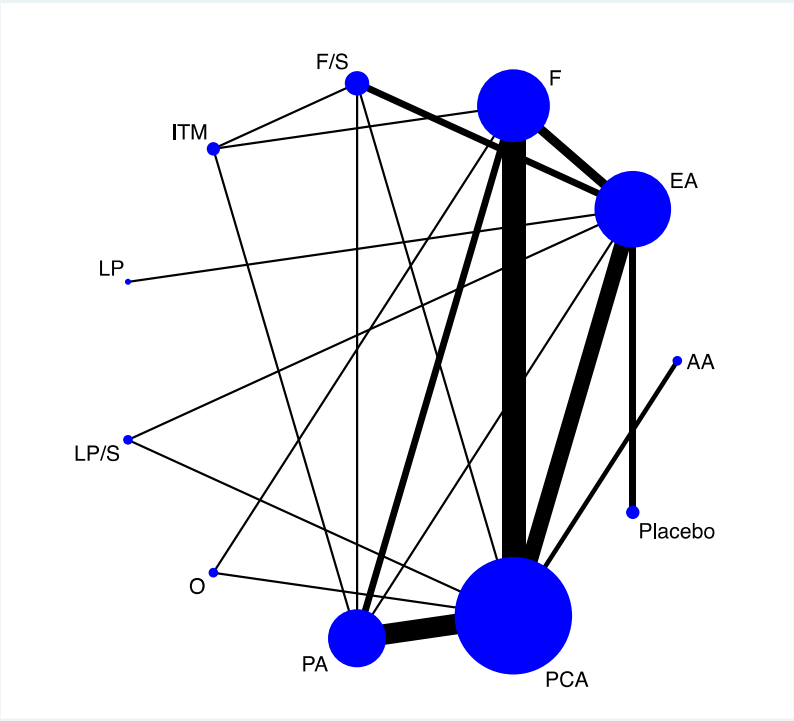
Incidence of nausea



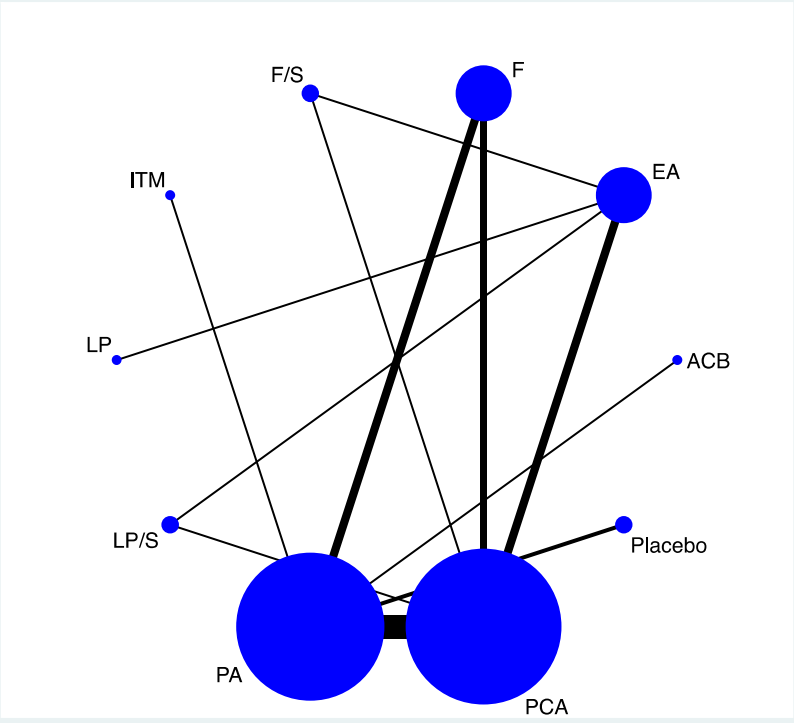
Incidence of vomiting



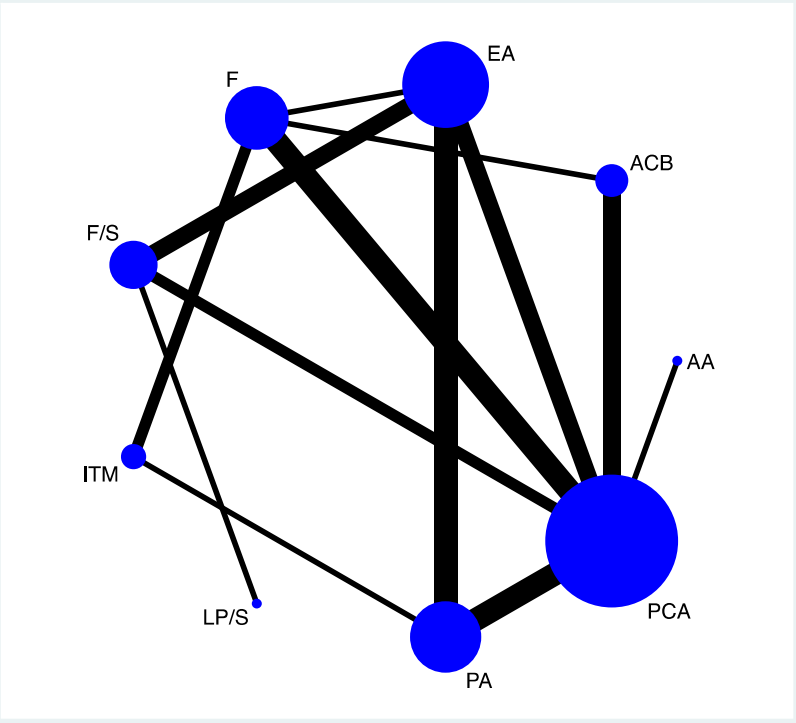
Incidence of pruritus



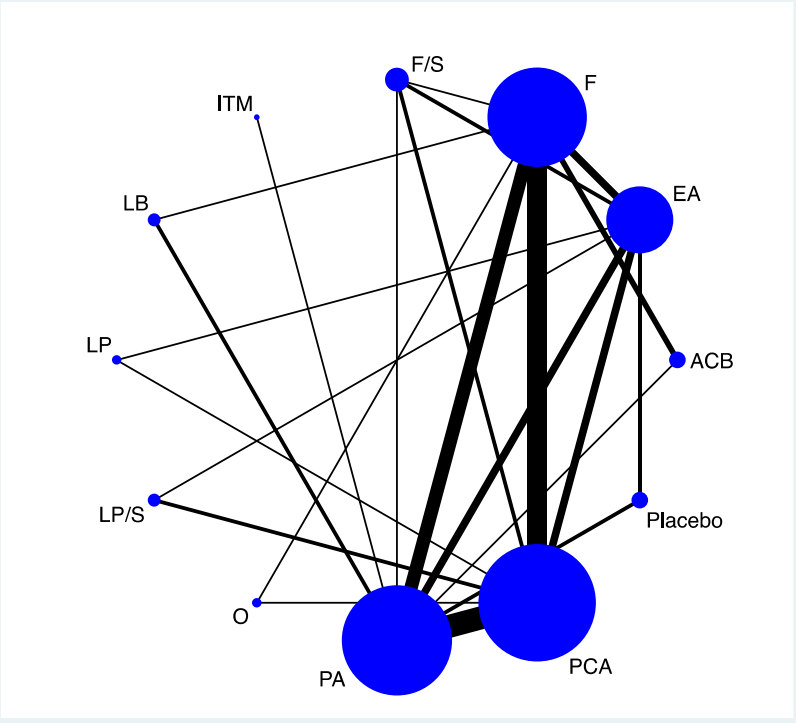
Incidence of urinary retention



Incidence of deep vein thrombosis



Estimated blood loss



Length of hospital stay

Treatments efficacy (league) tables

Comparisons between treatments should be read from left to right, and the estimate is in the cell in common between the column defining treatment and the row defining treatment. A negative sign (red cell) favors the treatment mentioned in the column over the one in the row while a positive sign (green cell) favors the treatment mentioned in the row, except for the range of motion where the opposite is true, and thus the colored are switched. Data presented as standard mean differences (SMDs) with 95% CI for all continues measures (e.g., pain, opioid, the range of motion and length of stay) and on OR with 95% CI for dichotomous measures (e.g., the incidence of nausea, vomiting, pruritus, urinary retention, DVT).

PCA															
-1.00 (-2.11,0.11)	**Placebo**														
0.78 (0.41,1.15)	1.78 (0.73,2.82)	**PA**													
0.46 (-1.05,1.98)	1.46 (-0.41,3.33)	-0.32 (-1.87,1.23)	**O**												
1.17 (-0.01,2.35)	2.16 (0.57,3.76)	0.39 (-0.81,1.59)	0.70 (-1.20,2.61)	**LP/S**											
1.00 (-0.27,2.27)	2.00 (0.34,3.66)	0.22 (-1.07,1.51)	0.54 (-1.41,2.49)	-0.17 (-1.85,1.52)	**LP**										
0.57 (-1.15,2.29)	1.57 (-0.41,3.55)	-0.21 (-1.89,1.48)	0.11 (-2.18,2.40)	-0.59 (-2.66,1.47)	-0.43 (-2.54,1.69)	**LB**									
0.57 (-1.21,2.35)	1.57 (-0.51,3.65)	-0.21 (-2.00,1.59)	0.11 (-2.20,2.41)	-0.60 (-2.71,1.51)	-0.43 (-2.56,1.71)	-0.00 (-2.46,2.46)	**ITM**								
0.54 (-0.72,1.80)	1.54 (-0.12,3.19)	-0.24 (-1.52,1.04)	0.08 (-1.87,2.02)	-0.63 (-2.31,1.05)	-0.46 (-2.18,1.26)	-0.03 (-2.14,2.08)	-0.03 (-2.16,2.10)	**FIC**							
1.86 (0.06,3.66)	2.86 (0.76,4.95)	1.08 (-0.73,2.89)	1.40 (-0.94,3.74)	0.69 (-1.39,2.77)	0.86 (-1.31,3.03)	1.29 (-1.19,3.76)	1.29 (-1.21,3.79)	1.32 (-0.84,3.48)	**F/S/O**						
1.49 (0.92,2.05)	2.48 (1.28,3.69)	0.71 (0.11,1.30)	1.02 (-0.57,2.62)	0.32 (-0.86,1.49)	0.49 (-0.84,1.81)	0.91 (-0.87,2.69)	0.91 (-0.91,2.74)	0.94 (-0.38,2.26)	-0.37 (-2.09,1.34)	**F/S**					
1.22 (-0.27,2.71)	2.22 (0.37,4.07)	0.44 (-1.08,1.96)	0.76 (-1.35,2.86)	0.05 (-1.83,1.94)	0.22 (-1.71,2.15)	0.65 (-1.62,2.91)	0.65 (-1.64,2.94)	0.68 (-1.24,2.60)	-0.64 (-2.96,1.68)	-0.26 (-1.83,1.30)	**F/O**				
0.46 (0.06,0.85)	1.45 (0.31,2.60)	-0.32 (-0.79,0.15)	-0.01 (-1.52,1.51)	-0.71 (-1.91,0.49)	-0.54 (-1.79,0.70)	-0.12 (-1.86,1.63)	-0.11 (-1.85,1.62)	-0.08 (-1.32,1.15)	-1.40 (-3.20,0.40)	-1.03 (-1.59,-0.47)	-0.76 (-2.25,0.72)	**F**			
0.96 (0.48,1.44)	1.96 (0.79,3.12)	0.18 (-0.32,0.69)	0.50 (-1.07,2.07)	-0.21 (-1.39,0.98)	-0.04 (-1.28,1.21)	0.39 (-1.37,2.14)	0.39 (-1.42,2.20)	0.42 (-0.82,1.66)	-0.90 (-2.72,0.92)	-0.52 (-1.13,0.09)	-0.26 (-1.80,1.29)	0.50 (-0.02,1.03)	**EA**		
0.35 (-0.52,1.22)	1.35 (-0.06,2.75)	-0.43 (-1.36,0.51)	-0.11 (-1.85,1.63)	-0.82 (-2.27,0.64)	-0.65 (-2.17,0.87)	-0.22 (-2.15,1.70)	-0.22 (-2.18,1.74)	-0.19 (-1.71,1.32)	-1.51 (-3.50,0.48)	-1.13 (-2.15,-0.12)	-0.87 (-2.58,0.84)	-0.11 (-1.02,0.81)	-0.61 (-1.59,0.37)	**ACB**	
0.69 (-1.01,2.39)	1.69 (-0.35,3.72)	-0.09 (-1.83,1.65)	0.23 (-2.05,2.51)	-0.48 (-2.55,1.59)	-0.31 (-2.43,1.81)	0.12 (-2.30,2.54)	0.12 (-2.34,2.58)	0.15 (-1.97,2.27)	-1.17 (-3.65,1.31)	-0.80 (-2.59,1.00)	-0.53 (-2.79,1.73)	0.23 (-1.52,1.98)	-0.27 (-2.04,1.50)	0.34 (-1.57,2.25)	**AA**

Pain at rest – 2 hr

PCA																
-0.30 (-0.75,0.14)	**Placebo**															
0.77 (0.55,0.99)	1.07 (0.66,1.49)	**PA**														
0.51 (-0.77,1.78)	0.81 (-0.53,2.15)	-0.26 (-1.55,1.02)	**O**													
0.92 (0.06,1.77)	1.22 (0.28,2.16)	0.14 (-0.72,1.01)	0.41 (-1.12,1.94)	**LP/S**												
0.77 (0.22,1.31)	1.07 (0.40,1.73)	-0.01 (-0.56,0.55)	0.26 (-1.12,1.64)	-0.15 (-1.15,0.85)	**LP**											
0.81 (0.09,1.54)	1.12 (0.30,1.93)	0.04 (-0.66,0.75)	0.31 (-1.15,1.77)	-0.10 (-1.21,1.01)	0.05 (-0.84,0.94)	**LB**										
0.07 (-0.67,0.82)	0.38 (-0.46,1.21)	-0.70 (-1.43,0.04)	-0.43 (-1.90,1.03)	-0.84 (-1.97,0.28)	-0.69 (-1.59,0.21)	-0.74 (-1.75,0.27)	**ITM**									
0.86 (0.02,1.71)	1.17 (0.24,2.09)	0.09 (-0.76,0.94)	0.36 (-1.16,1.87)	-0.05 (-1.24,1.13)	0.10 (-0.88,1.07)	0.05 (-1.04,1.14)	0.79 (-0.31,1.89)	**FIC**								
0.77 (-0.71,2.25)	1.07 (-0.45,2.59)	-0.00 (-1.49,1.48)	0.26 (-1.69,2.21)	-0.15 (-1.83,1.53)	0.00 (-1.56,1.56)	-0.04 (-1.68,1.59)	0.70 (-0.95,2.34)	-0.09 (-1.78,1.59)	**F/S/O**							
0.87 (0.50,1.24)	1.18 (0.67,1.68)	0.10 (-0.27,0.48)	0.37 (-0.95,1.68)	-0.04 (-0.92,0.83)	0.11 (-0.50,0.72)	0.06 (-0.73,0.85)	0.80 (-0.00,1.60)	0.01 (-0.88,0.90)	0.11 (-1.33,1.54)	**F/S**						
1.24 (-0.03,2.50)	1.54 (0.22,2.86)	0.47 (-0.79,1.73)	0.73 (-1.06,2.52)	0.32 (-1.20,1.84)	0.47 (-0.89,1.83)	0.42 (-1.01,1.86)	1.16 (-0.28,2.61)	0.37 (-1.13,1.88)	0.47 (-1.47,2.41)	0.36 (-0.94,1.66)	**F/O**					
0.66 (0.44,0.89)	0.97 (0.52,1.41)	-0.11 (-0.35,0.13)	0.16 (-1.12,1.43)	-0.25 (-1.12,0.62)	-0.10 (-0.64,0.44)	-0.15 (-0.88,0.58)	0.59 (-0.14,1.32)	-0.20 (-1.02,0.63)	-0.11 (-1.59,1.37)	-0.21 (-0.57,0.15)	-0.57 (-1.83,0.68)	**F**				
0.56 (0.25,0.87)	0.86 (0.42,1.30)	-0.21 (-0.52,0.09)	0.05 (-1.25,1.35)	-0.36 (-1.23,0.51)	-0.21 (-0.77,0.35)	-0.26 (-1.02,0.50)	0.48 (-0.29,1.26)	-0.31 (-1.15,0.54)	-0.21 (-1.70,1.28)	-0.32 (-0.72,0.08)	-0.68 (-1.97,0.60)	-0.11 (-0.42,0.20)	**EA**			
0.50 (-1.01,2.01)	0.80 (-0.74,2.35)	-0.27 (-1.78,1.24)	-0.01 (-1.97,1.96)	-0.42 (-2.12,1.29)	-0.27 (-1.85,1.32)	-0.31 (-1.97,1.35)	0.43 (-1.24,2.09)	-0.36 (-2.07,1.35)	-0.27 (-2.32,1.78)	-0.37 (-1.83,1.09)	-0.74 (-2.69,1.22)	-0.16 (-1.67,1.34)	-0.06 (-1.57,1.46)	**ACB/S**		
0.72 (0.26,1.17)	1.02 (0.42,1.62)	-0.05 (-0.52,0.41)	0.21 (-1.13,1.55)	-0.20 (-1.16,0.76)	-0.05 (-0.69,0.59)	-0.10 (-0.93,0.73)	0.64 (-0.20,1.49)	-0.15 (-1.08,0.78)	-0.05 (-1.59,1.48)	-0.16 (-0.70,0.39)	-0.52 (-1.85,0.80)	0.05 (-0.38,0.49)	0.16 (-0.35,0.67)	0.22 (-1.34,1.78)	**ACB**	
0.17 (-0.64,0.99)	0.48 (-0.45,1.41)	-0.60 (-1.44,0.25)	-0.33 (-1.84,1.18)	-0.74 (-1.92,0.44)	-0.59 (-1.57,0.39)	-0.64 (-1.73,0.45)	0.10 (-1.00,1.21)	-0.69 (-1.86,0.48)	-0.60 (-2.29,1.10)	-0.70 (-1.59,0.19)	-1.06 (-2.57,0.44)	-0.49 (-1.33,0.36)	-0.38 (-1.25,0.49)	-0.33 (-2.04,1.39)	-0.54 (-1.48,0.39)	**AA**

Pain at rest – 24 hr.

PCA																
-0.01 (-0.52,0.50)	Placebo															
0.65 (0.40,0.89)	0.65 (0.17,1.13)	PA														
0.42 (-0.83,1.66)	0.42 (-0.91,1.75)	-0.23 (-1.49,1.02)	O													
0.96 (0.10,1.81)	0.96 (-0.00,1.93)	0.31 (-0.56,1.18)	0.54 (-0.96,2.04)	LP/S												
0.30 (-0.36,0.97)	0.31 (-0.50,1.12)	-0.34 (-1.03,0.34)	-0.11 (-1.51,1.29)	-0.65 (-1.72,0.41)	LP											
0.72 (-0.10,1.54)	0.73 (-0.20,1.66)	0.07 (-0.73,0.88)	0.30 (-1.17,1.78)	-0.24 (-1.41,0.94)	0.42 (-0.62,1.46)	LB										
0.50 (-0.51,1.51)	0.51 (-0.59,1.60)	-0.15 (-1.13,0.83)	0.08 (-1.51,1.68)	-0.46 (-1.77,0.85)	0.20 (-1.00,1.39)	-0.22 (-1.49,1.05)	ITM									
0.63 (-0.76,2.02)	0.64 (-0.83,2.10)	-0.02 (-1.41,1.38)	0.21 (-1.63,2.06)	-0.33 (-1.95,1.29)	0.32 (-1.20,1.85)	-0.09 (-1.68,1.50)	0.13 (-1.58,1.84)	FIC								
0.79 (-0.66,2.24)	0.80 (-0.71,2.30)	0.14 (-1.31,1.60)	0.37 (-1.53,2.27)	-0.17 (-1.81,1.48)	0.49 (-1.09,2.06)	0.07 (-1.58,1.72)	0.29 (-1.47,2.05)	0.16 (-1.83,2.15)	F/S/O							
0.55 (0.14,0.95)	0.56 (-0.02,1.13)	-0.10 (-0.51,0.31)	0.13 (-1.16,1.43)	-0.41 (-1.28,0.47)	0.25 (-0.48,0.97)	-0.17 (-1.06,0.71)	0.05 (-1.01,1.12)	-0.08 (-1.50,1.34)	-0.24 (-1.63,1.16)	F/S						
0.74 (-0.49,1.97)	0.75 (-0.56,2.06)	0.10 (-1.13,1.32)	0.33 (-1.41,2.06)	-0.21 (-1.70,1.27)	0.44 (-0.94,1.82)	0.02 (-1.43,1.48)	0.24 (-1.32,1.81)	0.11 (-1.72,1.95)	-0.05 (-1.93,1.84)	0.19 (-1.08,1.47)	F/O					
0.48 (0.23,0.72)	0.48 (-0.04,1.00)	-0.17 (-0.44,0.11)	0.06 (-1.18,1.30)	-0.48 (-1.35,0.39)	0.17 (-0.50,0.84)	-0.24 (-1.06,0.57)	-0.02 (-1.04,1.00)	-0.15 (-1.52,1.22)	-0.31 (-1.76,1.14)	-0.07 (-0.47,0.32)	-0.27 (-1.49,0.96)	F				
0.28 (-0.05,0.61)	0.29 (-0.22,0.80)	-0.36 (-0.69,-0.04)	-0.13 (-1.41,1.14)	-0.67 (-1.55,0.20)	-0.02 (-0.71,0.67)	-0.44 (-1.29,0.41)	-0.22 (-1.25,0.82)	-0.35 (-1.75,1.06)	-0.51 (-1.97,0.96)	-0.27 (-0.70,0.17)	-0.46 (-1.71,0.79)	-0.19 (-0.53,0.14)	EA			
0.33 (-1.15,1.80)	0.34 (-1.20,1.87)	-0.32 (-1.79,1.16)	-0.09 (-2.01,1.83)	-0.63 (-2.29,1.04)	0.02 (-1.57,1.62)	-0.39 (-2.06,1.28)	-0.17 (-1.94,1.60)	-0.30 (-2.31,1.71)	-0.46 (-2.45,1.53)	-0.22 (-1.64,1.20)	-0.41 (-2.32,1.49)	-0.15 (-1.62,1.32)	0.05 (-1.44,1.53)	ACB/S		
0.55 (-0.04,1.15)	0.56 (-0.19,1.31)	-0.09 (-0.69,0.51)	0.14 (-1.22,1.50)	-0.40 (-1.43,0.62)	0.25 (-0.62,1.12)	-0.17 (-1.15,0.81)	0.05 (-1.10,1.21)	-0.07 (-1.55,1.40)	-0.24 (-1.79,1.32)	0.00 (-0.67,0.68)	-0.19 (-1.53,1.15)	0.08 (-0.48,0.63)	0.27 (-0.37,0.91)	0.22 (-1.35,1.80)	ACB	
0.11 (-0.68,0.90)	0.12 (-0.82,1.06)	-0.54 (-1.36,0.29)	-0.31 (-1.78,1.16)	-0.85 (-2.01,0.32)	-0.19 (-1.23,0.84)	-0.61 (-1.75,0.53)	-0.39 (-1.67,0.89)	-0.52 (-2.12,1.08)	-0.68 (-2.33,0.97)	-0.44 (-1.33,0.45)	-0.63 (-2.10,0.83)	-0.37 (-1.19,0.46)	-0.17 (-1.03,0.68)	-0.22 (-1.89,1.45)	-0.44 (-1.43,0.55)	AA

Pain at rest – 48 hr.

PCA											
0.03 (-0.67,0.73)	**Placebo**										
0.38 (-0.02,0.78)	0.35 (-0.29,0.99)	**PA**									
0.43 (-0.71,1.57)	0.40 (-0.90,1.69)	0.05 (-1.13,1.23)	**LP/S**								
-0.09 (-1.54,1.36)	-0.12 (-1.66,1.42)	-0.47 (-1.93,0.99)	-0.52 (-2.35,1.31)	**LP**							
0.44 (-0.53,1.42)	0.41 (-0.70,1.52)	0.06 (-0.86,0.99)	0.01 (-1.47,1.50)	0.53 (-1.16,2.23)	**LB**						
0.02 (-0.74,0.77)	-0.01 (-0.87,0.84)	-0.36 (-1.13,0.40)	-0.41 (-1.75,0.93)	0.11 (-1.31,1.52)	-0.43 (-1.59,0.74)	**F/S**					
0.33 (-0.05,0.72)	0.30 (-0.41,1.01)	-0.04 (-0.48,0.39)	-0.09 (-1.28,1.09)	0.43 (-0.99,1.84)	-0.11 (-1.07,0.85)	0.32 (-0.40,1.04)	**F**				
0.23 (-0.28,0.75)	0.20 (-0.43,0.84)	-0.14 (-0.63,0.34)	-0.20 (-1.38,0.99)	0.32 (-1.16,1.81)	-0.21 (-1.23,0.81)	0.22 (-0.56,1.00)	-0.10 (-0.64,0.44)	**EA**			
0.46 (-1.33,2.24)	0.43 (-1.40,2.26)	0.08 (-1.71,1.87)	0.03 (-2.07,2.13)	0.55 (-1.60,2.70)	0.01 (-1.98,2.01)	0.44 (-1.18,2.06)	0.12 (-1.65,1.89)	0.22 (-1.57,2.02)	**ACB/S**		
0.65 (-0.95,2.24)	0.62 (-1.09,2.32)	0.27 (-1.34,1.88)	0.22 (-1.73,2.17)	0.74 (-1.36,2.84)	0.20 (-1.62,2.03)	0.63 (-1.08,2.34)	0.31 (-1.24,1.86)	0.41 (-1.23,2.05)	0.19 (-2.16,2.54)	**ACB**	
0.26 (-0.85,1.36)	0.23 (-1.08,1.53)	-0.12 (-1.30,1.05)	-0.17 (-1.76,1.42)	0.35 (-1.48,2.17)	-0.19 (-1.66,1.29)	0.24 (-1.10,1.58)	-0.08 (-1.25,1.09)	0.02 (-1.20,1.24)	-0.20 (-2.30,1.90)	-0.39 (-2.33,1.55)	**AA**

Pain at rest – 72 hr.

PCA									
1.19 (0.49,1.88)	PA								
-0.26 (-2.09,1.57)	-1.44 (-3.37,0.48)	O							
0.92 (-0.92,2.75)	-0.27 (-2.19,1.65)	1.18 (-1.40,3.75)	LP/S						
0.83 (-1.35,3.01)	-0.35 (-2.59,1.88)	1.09 (-1.67,3.85)	-0.08 (-2.91,2.74)	ITM					
1.67 (-0.55,3.90)	0.49 (-1.77,2.75)	1.93 (-0.92,4.79)	0.76 (-2.00,3.52)	0.84 (-2.23,3.92)	FIC				
1.57 (0.24,2.90)	0.38 (-1.02,1.79)	1.83 (-0.35,4.01)	0.65 (-1.54,2.84)	0.74 (-1.67,3.14)	-0.11 (-2.57,2.36)	F/S			
0.83 (0.14,1.52)	-0.35 (-1.20,0.50)	1.09 (-0.74,2.92)	-0.08 (-2.01,1.84)	0.00 (-2.06,2.07)	-0.84 (-3.12,1.43)	-0.74 (-1.97,0.50)	F		
1.68 (0.84,2.51)	0.49 (-0.43,1.41)	1.93 (-0.04,3.91)	0.76 (-1.07,2.59)	0.84 (-1.43,3.12)	0.00 (-2.06,2.07)	0.11 (-1.24,1.45)	0.84 (-0.11,1.80)	EA	
0.34 (-0.71,1.38)	-0.85 (-2.08,0.38)	0.60 (-1.48,2.67)	-0.58 (-2.68,1.52)	-0.49 (-2.86,1.87)	-1.34 (-3.78,1.11)	-1.23 (-2.87,0.40)	-0.49 (-1.65,0.66)	-1.34 (-2.65,-0.03)	ACB

Pain at movement – 2 hr.

PCA														
0.35 (-0.51,1.21)	Placebo													
1.02 (0.64,1.41)	0.67 (-0.17,1.51)	PA												
0.46 (-1.10,2.03)	0.11 (-1.66,1.88)	-0.56 (-2.15,1.03)	O											
1.06 (-0.20,2.31)	0.71 (-0.80,2.21)	0.03 (-1.27,1.33)	0.59 (-1.41,2.60)	LP/S										
0.60 (-0.42,1.63)	0.25 (-1.00,1.51)	-0.42 (-1.45,0.61)	0.14 (-1.70,1.99)	-0.45 (-2.05,1.14)	LP									
1.08 (-0.67,2.84)	0.73 (-1.17,2.64)	0.06 (-1.65,1.77)	0.62 (-1.72,2.96)	0.03 (-2.12,2.17)	0.48 (-1.52,2.48)	LB								
1.59 (0.48,2.69)	1.24 (-0.11,2.58)	0.56 (-0.53,1.65)	1.12 (-0.77,3.01)	0.53 (-1.13,2.19)	0.98 (-0.47,2.43)	0.50 (-1.53,2.53)	ITM							
0.72 (-0.58,2.01)	0.37 (-1.14,1.87)	-0.31 (-1.62,1.00)	0.25 (-1.76,2.26)	-0.34 (-2.12,1.44)	0.11 (-1.48,1.70)	-0.37 (-2.52,1.78)	-0.87 (-2.53,0.79)	FIC						
1.20 (0.60,1.81)	0.85 (0.03,1.68)	0.18 (-0.44,0.80)	0.74 (-0.91,2.39)	0.15 (-1.22,1.52)	0.60 (-0.46,1.66)	0.12 (-1.70,1.94)	-0.38 (-1.58,0.82)	0.49 (-0.88,1.85)	F/S					
1.53 (-0.05,3.10)	1.18 (-0.57,2.93)	0.50 (-1.05,2.06)	1.06 (-1.13,3.26)	0.47 (-1.53,2.47)	0.92 (-0.91,2.76)	0.44 (-1.87,2.75)	-0.06 (-1.93,1.81)	0.81 (-1.19,2.81)	0.32 (-1.32,1.97)	F/O				
0.80 (0.45,1.15)	0.45 (-0.40,1.31)	-0.22 (-0.62,0.18)	0.34 (-1.22,1.91)	-0.25 (-1.54,1.04)	0.20 (-0.80,1.20)	-0.28 (-2.03,1.47)	-0.78 (-1.85,0.29)	0.09 (-1.19,1.36)	-0.40 (-0.97,0.17)	-0.72 (-2.28,0.83)	F			
0.79 (0.32,1.26)	0.44 (-0.43,1.31)	-0.23 (-0.73,0.27)	0.33 (-1.29,1.94)	-0.27 (-1.55,1.02)	0.19 (-0.83,1.20)	-0.29 (-2.07,1.49)	-0.80 (-1.95,0.36)	0.07 (-1.20,1.35)	-0.41 (-1.02,0.20)	-0.74 (-2.34,0.87)	-0.01 (-0.49,0.47)	EA		
1.38 (-0.51,3.26)	1.03 (-0.94,3.00)	0.35 (-1.54,2.25)	0.91 (-1.52,3.35)	0.32 (-1.93,2.57)	0.77 (-1.31,2.85)	0.29 (-2.26,2.84)	-0.21 (-2.36,1.94)	0.66 (-1.59,2.91)	0.17 (-1.62,1.96)	-0.15 (-2.58,2.28)	0.57 (-1.31,2.45)	0.59 (-1.30,2.48)	ACB/S	
0.69 (0.09,1.28)	0.34 (-0.65,1.32)	-0.34 (-0.95,0.27)	0.22 (-1.42,1.87)	-0.37 (-1.75,1.01)	0.08 (-0.96,1.12)	-0.40 (-2.21,1.42)	-0.90 (-2.09,0.29)	-0.03 (-1.41,1.35)	-0.52 (-1.28,0.24)	-0.84 (-2.48,0.79)	-0.12 (-0.67,0.43)	-0.10 (-0.79,0.58)	-0.69 (-2.63,1.25)	ACB

Pain at movement – 24 hr.

PCA													
0.44 (-0.47,1.34)	**Placebo**												
0.96 (0.57,1.36)	0.52 (-0.34,1.39)	**PA**											
0.22 (-1.23,1.67)	-0.22 (-1.91,1.47)	-0.74 (-2.23,0.74)	**O**										
1.06 (-0.13,2.26)	0.63 (-0.85,2.11)	0.10 (-1.14,1.35)	0.85 (-1.03,2.72)	**LP/S**									
0.11 (-1.02,1.24)	-0.33 (-1.69,1.03)	-0.85 (-1.99,0.29)	-0.11 (-1.92,1.71)	-0.95 (-2.57,0.66)	**LP**								
0.91 (-0.33,2.16)	0.47 (-1.00,1.95)	-0.05 (-1.27,1.17)	0.69 (-1.20,2.58)	-0.15 (-1.87,1.56)	0.80 (-0.83,2.44)	**ITM**							
0.76 (-0.89,2.42)	0.32 (-1.52,2.17)	-0.20 (-1.86,1.47)	0.54 (-1.63,2.72)	-0.30 (-2.33,1.73)	0.65 (-1.30,2.61)	-0.15 (-2.18,1.88)	**FIC**						
1.00 (0.38,1.62)	0.56 (-0.31,1.43)	0.04 (-0.60,0.68)	0.78 (-0.77,2.33)	-0.06 (-1.38,1.26)	0.89 (-0.25,2.03)	0.09 (-1.25,1.42)	0.24 (-1.48,1.95)	**F/S**					
1.54 (0.08,3.01)	1.11 (-0.56,2.77)	0.58 (-0.86,2.03)	1.33 (-0.72,3.37)	0.48 (-1.40,2.36)	1.43 (-0.37,3.24)	0.63 (-1.24,2.50)	0.78 (-1.39,2.95)	0.54 (-1.00,2.08)	**F/O**				
0.63 (0.27,0.98)	0.19 (-0.70,1.08)	-0.33 (-0.73,0.07)	0.41 (-1.04,1.86)	-0.44 (-1.66,0.79)	0.52 (-0.58,1.62)	-0.28 (-1.50,0.94)	-0.13 (-1.75,1.48)	-0.37 (-0.94,0.20)	-0.92 (-2.36,0.53)	**F**			
0.27 (-0.18,0.72)	-0.17 (-1.10,0.76)	-0.69 (-1.19,-0.20)	0.05 (-1.45,1.55)	-0.80 (-2.02,0.42)	0.16 (-0.94,1.26)	-0.64 (-1.92,0.64)	-0.49 (-2.17,1.18)	-0.73 (-1.35,-0.11)	-1.28 (-2.77,0.22)	-0.36 (-0.82,0.09)	**EA**		
0.60 (-1.17,2.38)	0.17 (-1.71,2.04)	-0.36 (-2.14,1.42)	0.38 (-1.89,2.66)	-0.46 (-2.58,1.66)	0.49 (-1.52,2.51)	-0.31 (-2.44,1.82)	-0.16 (-2.55,2.23)	-0.40 (-2.06,1.26)	-0.94 (-3.21,1.32)	-0.03 (-1.78,1.73)	0.33 (-1.44,2.11)	**ACB/S**	
0.74 (0.01,1.48)	0.30 (-0.79,1.39)	-0.22 (-0.96,0.52)	0.52 (-1.07,2.11)	-0.32 (-1.71,1.06)	0.63 (-0.65,1.91)	-0.17 (-1.55,1.21)	-0.02 (-1.77,1.72)	-0.26 (-1.13,0.60)	-0.80 (-2.38,0.78)	0.11 (-0.55,0.77)	0.47 (-0.32,1.26)	0.14 (-1.74,2.01)	**ACB**

Pain at movement – 48 hr.

PCA									
0.38 (-0.40,1.17)	**Placebo**								
0.39 (-0.08,0.86)	0.01 (-0.69,0.70)	**PA**							
0.26 (-0.65,1.17)	-0.12 (-1.30,1.05)	-0.13 (-1.13,0.86)	**LP/S**						
0.14 (-1.01,1.30)	-0.24 (-1.46,0.98)	-0.25 (-1.41,0.92)	-0.12 (-1.57,1.34)	**LP**					
4.74 (3.19,6.30)	4.36 (2.67,6.04)	4.35 (2.77,5.93)	4.48 (2.69,6.27)	4.60 (2.73,6.47)	**ITM**				
0.39 (-0.37,1.16)	0.01 (-0.70,0.71)	0.00 (-0.75,0.75)	0.13 (-1.04,1.30)	0.25 (-0.85,1.35)	-4.35 (-6.02,-2.68)	**F/S**			
0.31 (-0.06,0.68)	-0.07 (-0.82,0.68)	-0.08 (-0.54,0.38)	0.05 (-0.91,1.01)	0.17 (-0.93,1.27)	-4.43 (-5.94,-2.92)	-0.08 (-0.79,0.62)	**F**		
-0.36 (-0.87,0.15)	-0.75 (-1.60,0.10)	-0.75 (-1.32,-0.19)	-0.62 (-1.58,0.33)	-0.51 (-1.72,0.70)	-5.10 (-6.71,-3.50)	-0.76 (-1.60,0.09)	-0.67 (-1.20,-0.14)	**EA**	
-0.13 (-1.60,1.34)	-0.51 (-1.95,0.93)	-0.52 (-1.98,0.94)	-0.39 (-2.10,1.33)	-0.27 (-1.94,1.40)	-4.87 (-6.95,-2.78)	-0.52 (-1.77,0.73)	-0.44 (-1.88,1.00)	0.24 (-1.28,1.75)	**ACB/S**

Pain at movement – 72 hr.

PCA															
0.84 (0.08,1.60)	**Placebo**														
0.75 (0.46,1.03)	-0.09 (-0.85,0.66)	**PA**													
0.42 (-1.05,1.90)	-0.41 (-2.06,1.23)	-0.32 (-1.81,1.17)	**O**												
2.50 (1.55,3.46)	1.67 (0.51,2.83)	1.76 (0.78,2.73)	2.08 (0.33,3.83)	**LP/S**											
1.47 (0.72,2.22)	0.63 (-0.37,1.63)	0.72 (-0.04,1.49)	1.05 (-0.59,2.68)	-1.03 (-2.21,0.14)	**LP**										
0.83 (-0.03,1.69)	-0.01 (-1.11,1.10)	0.09 (-0.74,0.91)	0.41 (-1.29,2.10)	-1.67 (-2.94,-0.40)	-0.64 (-1.74,0.47)	**LB**									
0.79 (-0.09,1.67)	-0.05 (-1.17,1.08)	0.05 (-0.83,0.92)	0.37 (-1.33,2.06)	-1.71 (-2.99,-0.43)	-0.68 (-1.79,0.43)	-0.04 (-1.23,1.15)	**ITM**								
1.50 (0.28,2.72)	0.66 (-0.71,2.03)	0.75 (-0.47,1.97)	1.07 (-0.82,2.97)	-1.01 (-2.51,0.50)	0.03 (-1.35,1.41)	0.67 (-0.80,2.13)	0.71 (-0.76,2.17)	**FIC**							
2.32 (0.58,4.07)	1.48 (-0.35,3.32)	1.58 (-0.17,3.33)	1.90 (-0.38,4.17)	-0.18 (-2.12,1.76)	0.85 (-1.01,2.71)	1.49 (-0.44,3.42)	1.53 (-0.40,3.46)	0.82 (-1.27,2.92)	**F/S/O**						
1.61 (1.12,2.10)	0.77 (0.02,1.52)	0.86 (0.36,1.37)	1.18 (-0.35,2.72)	-0.90 (-1.87,0.08)	0.14 (-0.67,0.94)	0.78 (-0.17,1.73)	0.82 (-0.14,1.78)	0.11 (-1.14,1.36)	-0.71 (-2.39,0.96)	**F/S**					
2.04 (1.00,3.09)	1.21 (-0.06,2.47)	1.30 (0.25,2.35)	1.62 (-0.18,3.42)	-0.46 (-1.86,0.95)	0.57 (-0.68,1.83)	1.21 (-0.11,2.54)	1.25 (-0.08,2.59)	0.55 (-1.03,2.13)	-0.28 (-2.30,1.74)	0.44 (-0.69,1.56)	**F/O**				
0.88 (0.58,1.17)	0.04 (-0.71,0.79)	0.13 (-0.18,0.45)	0.46 (-1.02,1.93)	-1.62 (-2.60,-0.65)	-0.59 (-1.32,0.14)	0.05 (-0.81,0.90)	0.09 (-0.76,0.93)	-0.62 (-1.82,0.58)	-1.44 (-3.18,0.30)	-0.73 (-1.20,-0.25)	-1.16 (-2.20,-0.12)	**F**			
1.77 (1.25,2.29)	0.93 (0.17,1.69)	1.03 (0.50,1.56)	1.35 (-0.20,2.90)	-0.73 (-1.73,0.26)	0.30 (-0.51,1.12)	0.94 (-0.03,1.91)	0.98 (-0.00,1.96)	0.27 (-0.93,1.48)	-0.55 (-2.31,1.21)	0.16 (-0.38,0.71)	-0.27 (-1.42,0.87)	0.89 (0.36,1.42)	**EA**		
0.80 (0.22,1.39)	-0.04 (-0.95,0.88)	0.06 (-0.54,0.65)	0.38 (-1.19,1.95)	-1.70 (-2.80,-0.60)	-0.67 (-1.51,0.17)	-0.03 (-1.03,0.97)	0.01 (-1.00,1.02)	-0.70 (-2.01,0.62)	-1.52 (-3.34,0.30)	-0.81 (-1.52,-0.09)	-1.24 (-2.41,-0.07)	-0.08 (-0.65,0.49)	-0.97 (-1.71,-0.23)	**ACB**	
0.39 (-0.77,1.55)	-0.45 (-1.84,0.94)	-0.35 (-1.55,0.84)	-0.03 (-1.91,1.84)	-2.11 (-3.62,-0.61)	-1.08 (-2.46,0.30)	-0.44 (-1.89,1.00)	-0.40 (-1.86,1.06)	-1.11 (-2.79,0.58)	-1.93 (-4.03,0.17)	-1.22 (-2.48,0.04)	-1.65 (-3.22,-0.09)	-0.49 (-1.69,0.71)	-1.38 (-2.65,-0.11)	-0.41 (-1.71,0.89)	**AA**

Opioid consumption – 24 hr.

PCA														
0.59 (-0.35,1.52)	Placebo													
0.54 (0.21,0.86)	-0.05 (-0.97,0.87)	PA												
0.25 (-1.10,1.60)	-0.34 (-1.97,1.29)	-0.29 (-1.66,1.09)	O											
0.28 (-0.78,1.34)	-0.31 (-1.65,1.04)	-0.26 (-1.34,0.82)	0.03 (-1.68,1.74)	LP/S										
1.27 (0.29,2.25)	0.68 (-0.63,1.99)	0.73 (-0.27,1.73)	1.02 (-0.63,2.67)	0.99 (-0.42,2.40)	LP									
0.58 (-0.52,1.69)	-0.00 (-1.41,1.41)	0.05 (-1.04,1.14)	0.34 (-1.39,2.06)	0.30 (-1.21,1.82)	-0.68 (-2.13,0.76)	LB								
0.47 (-0.65,1.59)	-0.12 (-1.54,1.30)	-0.07 (-1.17,1.03)	0.22 (-1.51,1.95)	0.19 (-1.33,1.71)	-0.80 (-2.25,0.66)	-0.12 (-1.64,1.41)	ITM							
0.32 (-1.21,1.85)	-0.26 (-2.03,1.51)	-0.21 (-1.75,1.33)	0.08 (-1.94,2.09)	0.04 (-1.80,1.89)	-0.94 (-2.72,0.84)	-0.26 (-2.11,1.59)	-0.14 (-2.00,1.71)	FIC						
1.73 (0.13,3.34)	1.15 (-0.64,2.93)	1.20 (-0.41,2.81)	1.49 (-0.60,3.57)	1.45 (-0.40,3.31)	0.47 (-1.37,2.30)	1.15 (-0.78,3.08)	1.27 (-0.67,3.20)	1.41 (-0.79,3.61)	F/S/O					
1.03 (0.54,1.53)	0.45 (-0.47,1.37)	0.50 (-0.02,1.01)	0.79 (-0.64,2.21)	0.76 (-0.29,1.80)	-0.23 (-1.25,0.78)	0.45 (-0.72,1.63)	0.57 (-0.62,1.75)	0.71 (-0.87,2.29)	-0.70 (-2.23,0.83)	F/S				
0.69 (-0.66,2.04)	0.10 (-1.51,1.71)	0.15 (-1.19,1.48)	0.44 (-1.45,2.33)	0.41 (-1.29,2.11)	-0.58 (-2.22,1.06)	0.10 (-1.60,1.81)	0.22 (-1.49,1.93)	0.36 (-1.64,2.37)	-1.05 (-3.13,1.03)	-0.35 (-1.76,1.06)	F/O			
0.60 (0.29,0.91)	0.01 (-0.93,0.96)	0.06 (-0.29,0.41)	0.35 (-1.00,1.70)	0.32 (-0.76,1.40)	-0.67 (-1.63,0.30)	0.01 (-1.07,1.10)	0.13 (-0.97,1.23)	0.27 (-1.22,1.77)	-1.14 (-2.74,0.47)	-0.44 (-0.94,0.06)	-0.09 (-1.42,1.25)	F		
0.62 (0.09,1.15)	0.03 (-0.90,0.97)	0.08 (-0.44,0.61)	0.37 (-1.07,1.81)	0.34 (-0.73,1.41)	-0.65 (-1.71,0.42)	0.04 (-1.15,1.22)	0.15 (-1.05,1.35)	0.30 (-1.30,1.89)	-1.11 (-2.73,0.50)	-0.41 (-0.95,0.12)	-0.07 (-1.48,1.35)	0.02 (-0.53,0.57)	EA	
0.39 (-0.32,1.11)	-0.19 (-1.32,0.94)	-0.14 (-0.84,0.55)	0.14 (-1.36,1.65)	0.11 (-1.14,1.37)	-0.87 (-2.04,0.30)	-0.19 (-1.45,1.07)	-0.08 (-1.35,1.20)	0.07 (-1.57,1.71)	-1.34 (-3.07,0.39)	-0.64 (-1.46,0.17)	-0.29 (-1.77,1.19)	-0.20 (-0.88,0.47)	-0.23 (-1.06,0.61)	ACB
0.43 (-0.63,1.49)	-0.16 (-1.57,1.26)	-0.11 (-1.21,1.00)	0.18 (-1.53,1.90)	0.15 (-1.35,1.65)	-0.84 (-2.28,0.60)	-0.15 (-1.68,1.38)	-0.04 (-1.58,1.50)	0.11 (-1.75,1.97)	-1.30 (-3.23,0.62)	-0.60 (-1.77,0.56)	-0.26 (-1.97,1.46)	-0.17 (-1.27,0.93)	-0.19 (-1.37,0.99)	0.04 (-1.24,1.31)

Opioid consumption – 48 hr.

PCA										
-0.57 (-2.30,1.16)	**Placebo**									
0.42 (-0.56,1.40)	0.99 (-0.67,2.64)	**PA**								
-0.09 (-2.52,2.34)	0.48 (-2.51,3.46)	-0.51 (-3.13,2.11)	**LP/S**							
0.37 (-1.54,2.29)	0.94 (-1.45,3.33)	-0.05 (-1.86,1.77)	0.46 (-2.63,3.56)	**LB**						
-0.39 (-1.85,1.07)	0.18 (-1.52,1.87)	-0.81 (-2.34,0.72)	-0.30 (-3.14,2.54)	-0.77 (-3.02,1.49)	**F/S**					
1.07 (-1.22,3.36)	1.64 (-1.06,4.33)	0.65 (-1.55,2.85)	1.16 (-2.18,4.50)	0.70 (-2.08,3.47)	1.46 (-1.12,4.04)	**F/O**				
0.31 (-0.50,1.12)	0.88 (-0.83,2.59)	-0.11 (-1.02,0.81)	0.40 (-2.16,2.97)	-0.06 (-1.87,1.75)	0.70 (-0.74,2.15)	-0.76 (-2.96,1.44)	**F**			
-1.25 (-2.70,0.20)	-0.69 (-2.36,0.99)	-1.67 (-3.11,-0.23)	-1.16 (-4.00,1.67)	-1.63 (-3.85,0.59)	-0.86 (-2.42,0.70)	-2.32 (-4.87,0.23)	-1.56 (-3.00,-0.13)	**EA**		
0.55 (-2.09,3.19)	1.12 (-1.84,4.07)	0.13 (-2.32,2.58)	0.64 (-2.95,4.23)	0.18 (-2.87,3.23)	0.94 (-1.95,3.83)	-0.52 (-3.82,2.78)	0.24 (-2.38,2.86)	1.80 (-1.04,4.65)	**ACB**	
0.13 (-2.34,2.60)	0.70 (-2.32,3.72)	-0.29 (-2.94,2.37)	0.22 (-3.24,3.69)	-0.24 (-3.37,2.88)	0.52 (-2.34,3.39)	-0.94 (-4.31,2.43)	-0.18 (-2.78,2.42)	1.38 (-1.48,4.25)	-0.42 (-4.03,3.20)	**AA**

Opioid consumption – 72 hr.

PCA									
-0.03 (-0.49,0.43)	Placebo								
-0.41 (-0.63,-0.20)	-0.38 (-0.81,0.05)	PA							
-0.67 (-1.23,-0.11)	-0.64 (-1.29,0.01)	-0.26 (-0.81,0.29)	LP						
-0.27 (-0.83,0.29)	-0.24 (-0.91,0.43)	0.14 (-0.39,0.68)	0.40 (-0.34,1.14)	LB					
-0.78 (-1.14,-0.43)	-0.75 (-1.18,-0.33)	-0.37 (-0.71,-0.03)	-0.11 (-0.66,0.44)	-0.52 (-1.12,0.08)	F/S				
-0.68 (-1.42,0.05)	-0.65 (-1.48,0.17)	-0.27 (-0.99,0.45)	-0.01 (-0.89,0.87)	-0.42 (-1.29,0.46)	0.10 (-0.67,0.87)	F/O			
-0.55 (-0.81,-0.29)	-0.52 (-0.97,-0.07)	-0.14 (-0.38,0.10)	0.12 (-0.41,0.65)	-0.28 (-0.82,0.25)	0.23 (-0.08,0.55)	0.13 (-0.58,0.85)	F		
-0.50 (-0.78,-0.23)	-0.47 (-0.93,-0.02)	-0.09 (-0.33,0.15)	0.17 (-0.36,0.69)	-0.24 (-0.80,0.33)	0.28 (-0.05,0.61)	0.18 (-0.56,0.92)	0.05 (-0.20,0.30)	EA	
-0.03 (-0.61,0.54)	-0.00 (-0.69,0.68)	0.38 (-0.17,0.93)	0.64 (-0.12,1.39)	0.23 (-0.51,0.98)	0.75 (0.13,1.37)	0.65 (-0.24,1.54)	0.52 (-0.04,1.07)	0.47 (-0.11,1.05)	ACB

Range of motion and degree of flexion – 24 hr.

PCA									
-0.23 (-0.67,0.22)	**Placebo**								
-0.41 (-0.67,-0.15)	-0.18 (-0.58,0.22)	**PA**							
-0.50 (-1.36,0.35)	-0.28 (-1.22,0.66)	-0.10 (-0.97,0.78)	**O**						
-0.46 (-1.11,0.19)	-0.23 (-0.94,0.48)	-0.05 (-0.69,0.59)	0.05 (-1.00,1.09)	**LP**					
-0.30 (-1.21,0.60)	-0.08 (-1.04,0.89)	0.10 (-0.81,1.01)	0.20 (-1.01,1.41)	0.15 (-0.91,1.21)	**LB**				
-0.43 (-0.83,-0.04)	-0.21 (-0.64,0.23)	-0.03 (-0.41,0.36)	0.07 (-0.84,0.98)	0.02 (-0.61,0.66)	-0.13 (-1.06,0.80)	**F/S**			
-0.50 (-0.78,-0.22)	-0.28 (-0.71,0.16)	-0.09 (-0.38,0.19)	0.00 (-0.85,0.86)	-0.04 (-0.66,0.57)	-0.20 (-1.06,0.67)	-0.07 (-0.41,0.27)	**F**		
-0.29 (-0.59,0.01)	-0.06 (-0.49,0.36)	0.12 (-0.16,0.39)	0.21 (-0.67,1.09)	0.17 (-0.44,0.78)	0.01 (-0.89,0.92)	0.14 (-0.21,0.50)	0.21 (-0.06,0.48)	**EA**	
-0.56 (-1.44,0.32)	-0.33 (-1.27,0.60)	-0.15 (-1.00,0.69)	-0.06 (-1.27,1.16)	-0.10 (-1.16,0.96)	-0.26 (-1.50,0.98)	-0.13 (-1.05,0.80)	-0.06 (-0.95,0.83)	-0.27 (-1.16,0.62)	**ACB**

Range of motion and degree of flexion – 48 hr.

PCA									
-0.35 (-0.94,0.23)	Placebo								
-0.73 (-1.13,-0.33)	-0.38 (-0.90,0.15)	PA							
-0.47 (-1.51,0.57)	-0.11 (-1.19,0.96)	0.26 (-0.79,1.31)	LP						
-0.61 (-1.75,0.53)	-0.26 (-1.46,0.94)	0.12 (-1.03,1.27)	-0.14 (-1.59,1.30)	LB					
-0.55 (-1.74,0.63)	-0.20 (-1.43,1.04)	0.18 (-0.94,1.29)	-0.08 (-1.61,1.45)	0.06 (-1.55,1.66)	ITM				
-0.63 (-1.19,-0.07)	-0.27 (-0.82,0.27)	0.10 (-0.45,0.66)	-0.16 (-1.14,0.82)	-0.02 (-1.18,1.14)	-0.07 (-1.32,1.17)	F/S			
-0.66 (-1.07,-0.25)	-0.31 (-0.86,0.25)	0.07 (-0.38,0.52)	-0.19 (-1.17,0.79)	-0.05 (-1.11,1.01)	-0.11 (-1.31,1.09)	-0.03 (-0.50,0.44)	F		
-0.62 (-1.04,-0.19)	-0.26 (-0.76,0.24)	0.11 (-0.30,0.52)	-0.15 (-1.16,0.87)	-0.01 (-1.14,1.12)	-0.06 (-1.25,1.12)	0.01 (-0.47,0.49)	0.04 (-0.34,0.42)	EA	
-0.99 (-2.12,0.13)	-0.64 (-1.82,0.54)	-0.26 (-1.40,0.87)	-0.52 (-1.96,0.91)	-0.38 (-1.87,1.11)	-0.44 (-2.03,1.15)	-0.37 (-1.51,0.78)	-0.33 (-1.38,0.71)	-0.38 (-1.49,0.74)	ACB

Range of motion and degree of flexion – 72 hr.

PCA														
0.59 (-0.09,1.27)	Placebo													
0.72 (0.41,1.02)	0.12 (-0.54,0.78)	PA												
-0.24 (-1.56,1.08)	-0.83 (-2.31,0.64)	-0.96 (-2.30,0.39)	O											
1.11 (-0.59,2.82)	0.52 (-1.26,2.30)	0.40 (-1.31,2.11)	1.35 (-0.79,3.50)	LP/S										
0.35 (-0.52,1.22)	-0.24 (-1.30,0.81)	-0.36 (-1.26,0.53)	0.59 (-0.98,2.16)	-0.76 (-2.66,1.13)	LP									
0.44 (-0.58,1.46)	-0.15 (-1.34,1.04)	-0.27 (-1.28,0.74)	0.68 (-0.97,2.34)	-0.67 (-2.64,1.30)	0.09 (-1.23,1.41)	LB								
0.39 (-0.30,1.07)	-0.21 (-1.12,0.71)	-0.33 (-1.00,0.34)	0.63 (-0.84,2.09)	-0.73 (-2.54,1.09)	0.03 (-1.04,1.11)	-0.06 (-1.23,1.12)	ITM							
0.65 (-1.40,2.70)	0.06 (-2.05,2.17)	-0.07 (-2.11,1.98)	0.89 (-1.54,3.32)	-0.46 (-3.10,2.18)	0.30 (-1.89,2.49)	0.21 (-2.06,2.48)	0.26 (-1.88,2.40)	FIC						
0.86 (0.34, 1.38)	0.27 (-0.45,0.99)	0.15 (-0.38,0.67)	1.10 (-0.30,2.51)	-0.25 (-1.88,1.37)	0.51 (-0.46,1.49)	0.42 (-0.69,1.53)	0.48 (-0.33,1.28)	0.21 (-1.87,2.29)	F/S					
1.94 (0.56, 3.33)	1.35 (-0.18,2.89)	1.23 (-0.18,2.64)	2.19 (0.28, 4.09)	0.83 (-1.36,3.02)	1.59 (-0.03,3.22)	1.50 (-0.20,3.21)	1.56 (0.03, 3.08)	1.29 (-1.17,3.76)	1.08 (-0.39,2.55)	F/O				
0.72 (0.40, 1.03)	0.12 (-0.58,0.82)	0.00 (-0.37,0.37)	0.96 (-0.37,2.28)	-0.40 (-2.11,1.31)	0.36 (-0.52,1.25)	0.27 (-0.73,1.28)	0.33 (-0.32,0.98)	0.07 (-1.99,2.12)	-0.15 (-0.68,0.39)	-1.23 (-2.62,0.16)	F			
-0.16 (-0.56,0.24)	-0.75 (-1.40,-0.11)	-0.88 (-1.27,-0.48)	0.08 (-1.29,1.45)	-1.27 (-2.99,0.44)	-0.51 (-1.38,0.36)	-0.60 (-1.66,0.45)	-0.55 (-1.28,0.19)	-0.81 (-2.82,1.20)	-1.02 (-1.57,-0.48)	-2.11 (-3.54,-0.67)	-0.88 (-1.31,-0.45)	EA		
0.84 (-0.05,1.73)	0.25 (-0.84,1.33)	0.13 (-0.79,1.04)	1.08 (-0.49,2.66)	-0.27 (-2.18,1.63)	0.49 (-0.45,1.43)	0.40 (-0.92,1.72)	0.46 (-0.63,1.54)	0.19 (-2.02,2.40)	-0.02 (-1.02,0.98)	-1.10 (-2.73,0.53)	0.13 (-0.75,1.01)	1.00 (0.08,1.93)	ACB	
2.34 (1.32, 3.36)	1.75 (0.52,2.97)	1.62 (0.56,2.69)	2.58 (0.91, 4.25)	1.23 (-0.76,3.21)	1.99 (0.65, 3.33)	1.90 (0.46, 3.34)	1.95 (0.73, 3.18)	1.69 (-0.60,3.98)	1.48 (0.34,2.62)	0.40 (-1.33,2.12)	1.62 (0.56,2.69)	2.50 (1.41, 3.59)	1.50 (0.15, 2.85)	AA

Incidence of nausea.

PCA											
0.69 (-0.17,1.55)	Placebo										
0.89 (0.29,1.50)	0.21 (-0.64,1.05)	PA									
-0.08 (-2.12,1.95)	-0.77 (-2.90,1.35)	-0.98 (-2.94,0.98)	LP/S								
0.00 (-1.21,1.22)	-0.69 (-2.14,0.77)	-0.89 (-2.24,0.45)	0.09 (-2.28,2.45)	LP							
1.55 (-0.27,3.37)	0.87 (-1.10,2.83)	0.66 (-1.20,2.51)	1.64 (-1.04,4.32)	1.55 (-0.63,3.74)	LB						
0.09 (-0.90,1.07)	-0.60 (-1.79,0.59)	-0.81 (-1.72,0.10)	0.17 (-1.98,2.32)	0.08 (-1.47,1.64)	-1.47 (-3.45,0.52)	ITM					
0.73 (-0.17,1.62)	0.04 (-1.05,1.13)	-0.17 (-0.87,0.54)	0.81 (-1.02,2.64)	0.72 (-0.77,2.22)	-0.83 (-2.79,1.13)	0.64 (-0.49,1.77)	F/S				
1.46 (-0.15,3.07)	0.77 (-1.04,2.59)	0.57 (-1.14,2.27)	1.54 (-1.04,4.13)	1.46 (-0.56,3.48)	-0.09 (-2.50,2.31)	1.37 (-0.49,3.24)	0.73 (-1.09,2.56)	F/O			
0.81 (0.33,1.28)	0.12 (-0.77,1.01)	-0.09 (-0.68,0.50)	0.89 (-1.13,2.91)	0.80 (-0.49,2.10)	-0.75 (-2.50,1.01)	0.72 (-0.21,1.65)	0.08 (-0.79,0.95)	-0.65 (-2.30,0.99)	F		
0.03 (-0.59,0.64)	-0.66 (-1.39,0.06)	-0.87 (-1.58,-0.15)	0.11 (-1.96,2.18)	0.02 (-1.30,1.34)	-1.53 (-3.41,0.35)	-0.06 (-1.14,1.01)	-0.70 (-1.68,0.28)	-1.43 (-3.15,0.28)	-0.78 (-1.45,-0.11)	EA	
0.14 (-1.04,1.33)	-0.54 (-1.99,0.91)	-0.75 (-2.08,0.57)	0.23 (-2.12,2.58)	0.14 (-0.97,1.26)	-1.41 (-3.58,0.76)	0.06 (-1.48,1.60)	-0.58 (-2.06,0.90)	-1.32 (-3.32,0.69)	-0.66 (-1.94,0.61)	0.12 (-1.19,1.43)	ACB

Incidence of vomiting.

PCA												
-0.28 (-1.42,0.86)	**Placebo**											
0.43 (-0.28,1.14)	0.71 (-0.55,1.98)	**PA**										
-0.87 (-3.60,1.87)	-0.58 (-3.52,2.36)	-1.30 (-4.09,1.49)	**O**									
2.62 (0.33,4.91)	2.90 (0.53,5.27)	2.19 (-0.18,4.55)	3.49 (-0.07,7.04)	**LP/S**								
-0.10 (-2.02,1.83)	0.19 (-2.00,2.37)	-0.53 (-2.49,1.43)	0.77 (-2.51,4.05)	-2.72 (-5.68,0.25)	**LP**							
-0.51 (-2.59,1.56)	-0.23 (-2.55,2.09)	-0.94 (-2.89,1.00)	0.35 (-3.05,3.76)	-3.13 (-6.20,-0.07)	-0.42 (-3.18,2.35)	**LB**						
-1.08 (-2.05,-0.11)	-0.80 (-2.21,0.62)	-1.51 (-2.40,-0.62)	-0.21 (-3.05,2.63)	-3.70 (-6.15,-1.25)	-0.98 (-2.97,1.00)	-0.57 (-2.71,1.58)	**ITM**					
0.49 (-0.65,1.63)	0.78 (-0.30,1.85)	0.06 (-1.22,1.34)	1.36 (-1.59,4.30)	-2.13 (-4.40,0.14)	0.59 (-1.61,2.78)	1.01 (-1.33,3.34)	1.57 (0.14,3.01)	**F/S**				
0.51 (-0.16,1.19)	0.80 (-0.43,2.03)	0.08 (-0.68,0.85)	1.38 (-1.35,4.12)	-2.10 (-4.45,0.25)	0.61 (-1.19,2.42)	1.03 (-1.06,3.12)	1.60 (0.76,2.43)	0.02 (-1.22,1.27)	**F**			
-0.06 (-0.78,0.66)	0.22 (-0.74,1.19)	-0.49 (-1.37,0.40)	0.81 (-2.00,3.61)	-2.68 (-4.95,-0.41)	0.04 (-1.95,2.03)	0.45 (-1.69,2.59)	1.02 (-0.07,2.11)	-0.55 (-1.63,0.53)	-0.57 (-1.41,0.26)	**EA**		
0.21 (-1.21,1.64)	0.50 (-1.26,2.25)	-0.22 (-1.68,1.25)	1.08 (-1.93,4.09)	-2.41 (-5.07,0.26)	0.31 (-0.99,1.61)	0.73 (-1.71,3.17)	1.29 (-0.21,2.80)	-0.28 (-2.04,1.49)	-0.30 (-1.55,0.95)	0.27 (-1.23,1.78)	**ACB**	
1.17 (-1.34,3.68)	1.45 (-1.30,4.21)	0.74 (-1.87,3.35)	2.04 (-1.67,5.75)	-1.45 (-4.84,1.95)	1.27 (-1.90,4.43)	1.68 (-1.57,4.94)	2.25 (-0.44,4.94)	0.68 (-2.08,3.43)	0.66 (-1.94,3.25)	1.23 (-1.38,3.84)	0.96 (-1.93,3.84)	**AA**

Incidence of pruritus.

PCA										
-0.64 (-2.19,0.90)	**Placebo**									
0.36 (-0.27,1.00)	1.01 (-0.62,2.63)	**PA**								
-0.92 (-2.28,0.45)	-0.27 (-2.31,1.76)	-1.28 (-2.73,0.17)	**O**							
1.36 (-1.66,4.38)	2.00 (-1.29,5.30)	1.00 (-2.07,4.07)	2.27 (-1.03,5.58)	**LP/S**						
1.24 (-0.37,2.84)	1.88 (-0.08,3.85)	0.88 (-0.80,2.55)	2.15 (0.08,4.23)	-0.12 (-3.44,3.20)	**LP**					
0.47 (-0.70,1.65)	1.12 (-0.77,3.01)	0.11 (-1.06,1.28)	1.39 (-0.31,3.09)	-0.89 (-4.11,2.34)	-0.77 (-2.70,1.17)	**ITM**				
0.79 (-0.02,1.60)	1.44 (-0.24,3.11)	0.43 (-0.16,1.03)	1.71 (0.18,3.24)	-0.56 (-3.67,2.54)	-0.44 (-2.17,1.29)	0.32 (-0.89,1.53)	**F/S**			
0.61 (0.00,1.22)	1.25 (-0.35,2.86)	0.25 (-0.46,0.96)	1.53 (0.19,2.87)	-0.75 (-3.81,2.32)	-0.63 (-2.29,1.03)	0.14 (-0.94,1.22)	-0.18 (-1.05,0.68)	**F**		
-0.21 (-0.96,0.53)	0.43 (-0.93,1.79)	-0.58 (-1.46,0.31)	0.70 (-0.81,2.22)	-1.57 (-4.57,1.43)	-1.45 (-2.88,-0.03)	-0.69 (-2.00,0.63)	-1.01 (-1.99,-0.03)	-0.83 (-1.68,0.03)	**EA**	
1.56 (0.51,2.60)	2.20 (0.33,4.07)	1.20 (-0.03,2.42)	2.47 (0.75,4.19)	0.20 (-3.00,3.40)	0.32 (-1.60,2.23)	1.08 (-0.49,2.66)	0.76 (-0.56,2.09)	0.95 (-0.26,2.16)	1.77 (0.49,3.05)	**AA**

Incidence of urinary retention.

PCA									
0.85 (-1.72,3.41)	**Placebo**								
0.18 (-0.41,0.76)	-0.67 (-3.16,1.83)	**PA**							
0.16 (-3.29,3.60)	-0.69 (-4.98,3.60)	-0.02 (-3.51,3.47)	**LP/S**						
-0.89 (-4.17,2.40)	-1.73 (-5.90,2.44)	-1.06 (-4.40,2.28)	-1.04 (-5.77,3.69)	**LP**					
0.18 (-3.82,4.18)	-0.67 (-5.35,4.01)	-0.00 (-3.96,3.96)	0.02 (-5.26,5.30)	1.06 (-4.12,6.24)	**ITM**				
1.49 (-1.49,4.47)	0.65 (-3.28,4.58)	1.32 (-1.72,4.35)	1.34 (-3.21,5.88)	2.38 (-2.03,6.79)	1.32 (-3.67,6.31)	**F/S**			
-0.05 (-1.06,0.96)	-0.90 (-3.58,1.79)	-0.23 (-1.22,0.76)	-0.21 (-3.80,3.38)	0.83 (-2.60,4.27)	-0.23 (-4.31,3.85)	-1.54 (-4.69,1.60)	**F**		
0.31 (-0.25,0.87)	-0.53 (-3.16,2.09)	0.14 (-0.67,0.94)	0.16 (-3.29,3.60)	1.20 (-2.04,4.44)	0.14 (-3.90,4.18)	-1.18 (-4.17,1.81)	0.36 (-0.79,1.52)	**EA**	
0.26 (-3.72,4.24)	-0.59 (-5.25,4.08)	0.08 (-3.86,4.02)	0.10 (-5.16,5.37)	1.15 (-4.02,6.31)	0.08 (-5.50,5.67)	-1.23 (-6.21,3.74)	0.31 (-3.75,4.37)	-0.05 (-4.08,3.97)	**ACB**

Incidence of deep vein thrombosis

PCA								
0.49 (0.08,0.89)	PA							
0.62 (-0.62,1.86)	0.13 (-1.12,1.38)	LP/S						
0.10 (-0.58,0.79)	-0.38 (-1.07,0.30)	-0.51 (-1.90,0.87)	ITM					
0.78 (0.13,1.42)	0.29 (-0.38,0.96)	0.16 (-0.90,1.22)	0.67 (-0.22,1.56)	F/S				
0.15 (-0.25,0.56)	-0.34 (-0.85,0.18)	-0.46 (-1.74,0.82)	0.05 (-0.58,0.68)	-0.62 (-1.34,0.10)	F			
0.46 (0.03,0.88)	-0.03 (-0.43,0.36)	-0.16 (-1.37,1.05)	0.35 (-0.37,1.08)	-0.32 (-0.91,0.27)	0.30 (-0.21,0.81)	EA		
0.02 (-0.52,0.55)	-0.47 (-1.13,0.18)	-0.60 (-1.94,0.74)	-0.09 (-0.92,0.74)	-0.76 (-1.58,0.07)	-0.14 (-0.74,0.46)	-0.44 (-1.10,0.22)	ACB	
0.30 (-0.69,1.30)	-0.19 (-1.26,0.89)	-0.31 (-1.90,1.28)	0.20 (-1.01,1.41)	-0.47 (-1.66,0.71)	0.15 (-0.93,1.22)	-0.15 (-1.24,0.93)	0.29 (-0.84,1.42)	AA

Estimated blood loss

PCA											
0.40 (-0.49,1.30)	Placebo										
0.57 (0.19,0.95)	0.17 (-0.68,1.01)	PA									
-1.65 (-3.15,-0.14)	-2.05 (-3.78,-0.32)	-2.22 (-3.75,-0.69)	O								
0.74 (-0.45,1.92)	0.33 (-1.11,1.78)	0.17 (-1.06,1.39)	2.39 (0.48,4.30)	LP/S							
0.17 (-1.03,1.37)	-0.23 (-1.67,1.21)	-0.40 (-1.62,0.83)	1.82 (-0.09,3.74)	-0.56 (-2.23,1.10)	LP						
0.57 (-0.42,1.55)	0.16 (-1.09,1.42)	-0.00 (-0.94,0.94)	2.22 (0.44,3.99)	-0.17 (-1.70,1.36)	0.40 (-1.13,1.92)	LB					
0.28 (-1.41,1.98)	-0.12 (-1.98,1.74)	-0.29 (-1.94,1.37)	1.93 (-0.32,4.18)	-0.45 (-2.51,1.60)	0.11 (-1.95,2.17)	-0.28 (-2.18,1.62)	ITM				
0.41 (-0.36,1.18)	0.01 (-1.09,1.11)	-0.16 (-0.93,0.61)	2.06 (0.39,3.73)	-0.33 (-1.72,1.06)	0.24 (-1.15,1.62)	-0.16 (-1.35,1.04)	0.13 (-1.70,1.95)	F/S			
0.31 (-0.09,0.71)	-0.09 (-0.99,0.81)	-0.26 (-0.67,0.15)	1.96 (0.46,3.46)	-0.43 (-1.66,0.81)	0.14 (-1.09,1.37)	-0.26 (-1.22,0.71)	0.03 (-1.67,1.73)	-0.10 (-0.88,0.68)	F		
0.25 (-0.25,0.76)	-0.15 (-1.00,0.70)	-0.32 (-0.81,0.18)	1.90 (0.34,3.47)	-0.48 (-1.70,0.74)	0.08 (-1.11,1.28)	-0.31 (-1.35,0.72)	-0.03 (-1.75,1.70)	-0.15 (-0.95,0.64)	-0.06 (-0.57,0.46)	EA	
0.86 (-0.02,1.74)	0.46 (-0.73,1.64)	0.29 (-0.57,1.15)	2.51 (0.81,4.21)	0.12 (-1.34,1.58)	0.69 (-0.77,2.15)	0.29 (-0.95,1.53)	0.58 (-1.29,2.44)	0.45 (-0.66,1.56)	0.55 (-0.26,1.36)	0.61 (-0.33,1.54)	ACB

Length of hospital stay.

SUCRA tables for primary outcomes

Pain at rest							
2 hr		**24 hr**		**48 hr**		**72 hr**	
67 trials (3996 patients)		144 trials (9794 patients)		110 trials (7470 patients)		56 trials (3718 patients)	
Rank	SUCRA	Rank	SUCRA	Rank	SUCRA	Rank	SUCRA
F/S/O	84	F/O	80.9	LP/S	78.5	ACB	67.6
F/S	83.5	F/S	73.1	LB	68.2	LB	63.1
F/O	71.6	LP/S	69.7	PA	67.4	PA	63.1
LP/S	68.7	FIC	67.8	F/S/O	66.4	ACB/S	60.7
EA	63.5	LB	64.4	F/O	65.4	F	59.5
LP	62.4	PA	64.3	FIC	59	LP/S	59.5
PA	53.8	LP	62.7	F/S	58.4	AA	50.9
AA	49.9	ACB	57.8	ACB	56.9	EA	49.2
ITM	45.7	F/S/O	57.4	ITM	52	LP	33.4
LB	44.3	F	52.5	F	51.7	F/S	32.9
FIC	43.1	ACB/S	46.8	O	49.7	Placebo	32.3
O	38.8	EA	43.5	ACB/S	43.3	PCA	28
F	36.7	O	43	LP	38.9		
ACB	33.8	AA	26.6	EA	34.6		
PCA	17.2	ITM	19.6	AA	27.2		
Placebo	2.9	PCA	15	PCA	16.8		
		Placebo	4.9	Placebo	15.5		

Pain at movement

2 hr		24 hr		48 hr		72 hr	
28 trials (1488 patients)		80 trials (5764 patients)		66 trials (4700 patients)		30 trials (2042 patients)	
Rank	SUCRA	Rank	SUCRA	Rank	SUCRA	Rank	SUCRA
EA	81.1	ITM	82.2	F/O	84	ITM	100
F/S	76	F/O	74.9	F/S	72	PA	62.4
FIC	72.4	F/S	71.9	PA	70.4	F/S	60.4
PA	62.9	ACB/S	66	LP/S	69.1	Placebo	59.1
LP/S	51.1	LP/S	62.3	ITM	61.4	F	56.2
ITM	48.5	PA	62.1	ACB	56.5	LP/S	50.1
F	47.8	LB	57.7	FIC	54.1	LP	43.8
ACB	29	EA	46.2	ACB/S	49	ACB/S	29.8
O	16.2	F	45.9	F	48.6	PCA	28.7
PCA	15	FIC	42.5	Placebo	39.2	EA	9.4
		ACB	38.8	O	31.6		
		LP	36.2	EA	27.9		
		O	33.6	LP	22.8		
		Placebo	22.1	PCA	13.3		
		PCA	7.4				

Opioid consumption

24 hr		48 hr		72 hr	
104 trials (7627 patients)		70 trials (4736 patients)		26 trials (1927 patients)	
Rank	SUCRA	Rank	SUCRA	Rank	SUCRA
LP/S	93.3	F/S/O	88.5	F/O	76.8
F/S/O	84.4	LP	82.8	PA	64.6
F/O	84.2	F/S	78.1	ACB	62.4
EA	78	F/O	57.4	F	62.3
F/S	70.8	EA	53.2	LB	60.5
LP	65.8	F	52	AA	53.8
FIC	63.8	Placebo	50	PCA	47.1
F	39.7	LB	49.7	LP/S	47.1
LB	36.5	PA	46.9	F/S	34.8
Placebo	35.9	ITM	43.8	Placebo	30.7
ITM	34.7	AA	41.9	EA	10
ACB	34.4	FIC	39		
PA	30.5	ACB	37.6		
O	22.3	LP/S	33.9		
AA	21.1	O	31.8		
PCA	4.5	PCA	13.5		

Range of motion					
24 hr		48 hr		72 hr	
41 trials (3059 patients)		44 trials (3060 patients)		32 trials (2307 patients)	
Rank	SUCRA	Rank	SUCRA	Rank	SUCRA
F/S	89.6	F	70.7	ACB	77.7
LP	75.3	ACB	66.9	PA	68.1
F/O	72.9	O	62.5	F	60.8
F	67.5	F/S	61.7	F/S	55.9
EA	60.6	LP	59.8	EA	55
PA	49	PA	55.9	LB	53.6
LB	38.5	LB	42.8	ITM	46.6
ACB	18.5	EA	38	LP	44.2
Placebo	15.7	Placebo	32.9	Placebo	30.9
PCA	12.5	PCA	8.6	PCA	7.3

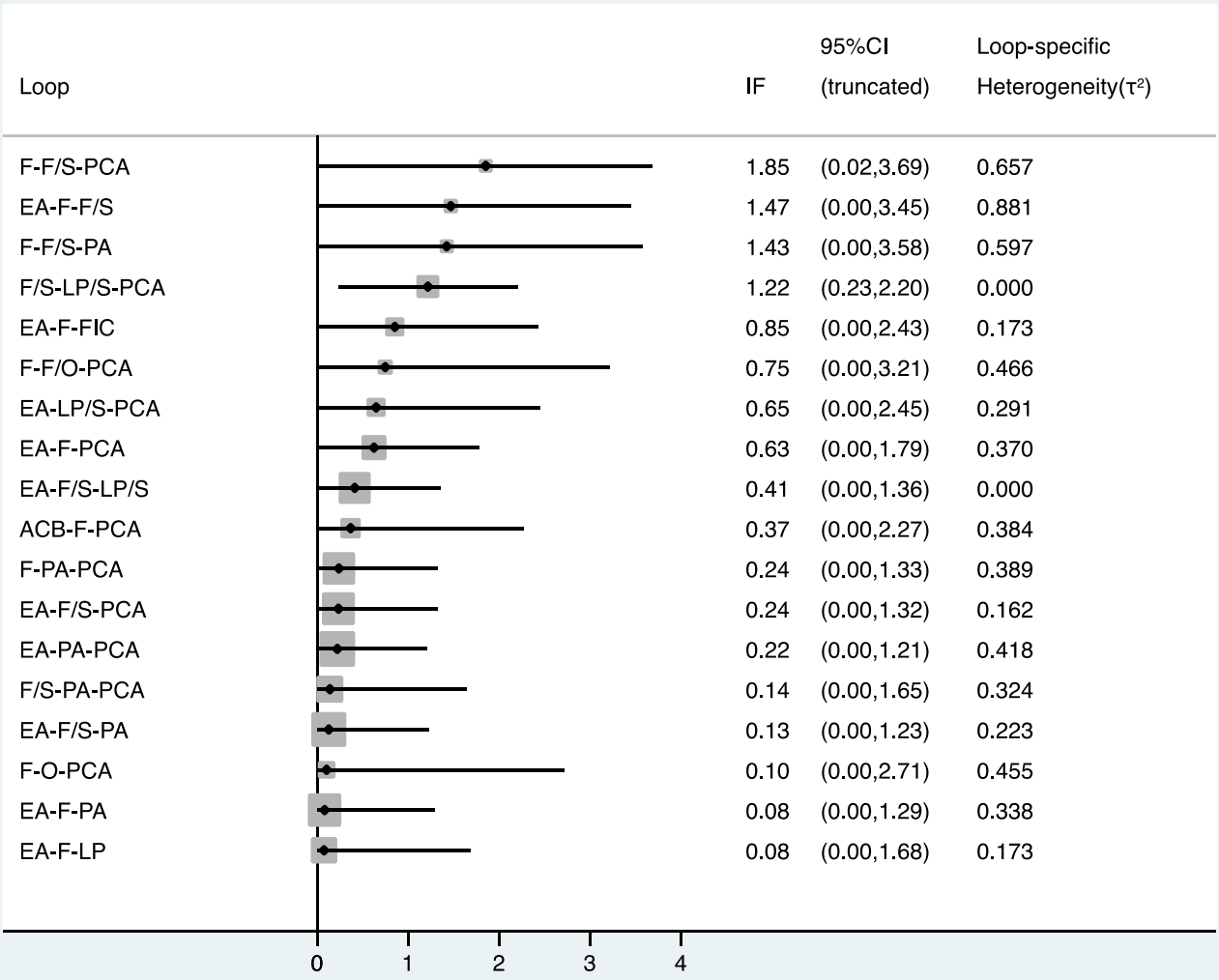
Heterogeneity of all outcomes` NMA

Outcomes	Heterogeneity standard deviation*
Pain at rest – 2 hr	0.82
Pain at rest – 24 hr	0.67
Pain at rest – 48 hr	0.65
Pain at rest – 72 hr	0.76
Pain with movement – 2 hr	1.00
Pain with movement – 24 hr	0.85
Pain with movement – 48 hr	0.78
Pain with movement – 72 hr	0.55
Opioid consumption – 24 hr	0.80
Opioid consumption – 48 hr	0.72
Opioid consumption – 72 hr	1.23
Rang of motion and degree of flexion – 24 hr	0.29
Rang of motion and degree of flexion – 48 hr	0.37
Rang of motion and degree of flexion – 72 hr	0.49
Incidence of nausea	0.42
Incidence of vomiting	2.30
Incidence of pruritus	0.48
Incidence of urinary retention	0.00
Incidence of deep vein thrombosis	1.17
Estimated blood loss	0.43
Length of hospital stay	0.79

*Heterogeneity standard deviation value below 0.3 is considered negligible, from 0.3 to 0.7 is reasonable, from 0.7 to 1.0 is high, and above 1.0 is extreme.

Inconsistency plots and assessment

Pain at rest – 2 hr. The overall chi-square test for inconsistency gave a p-value of 0.83

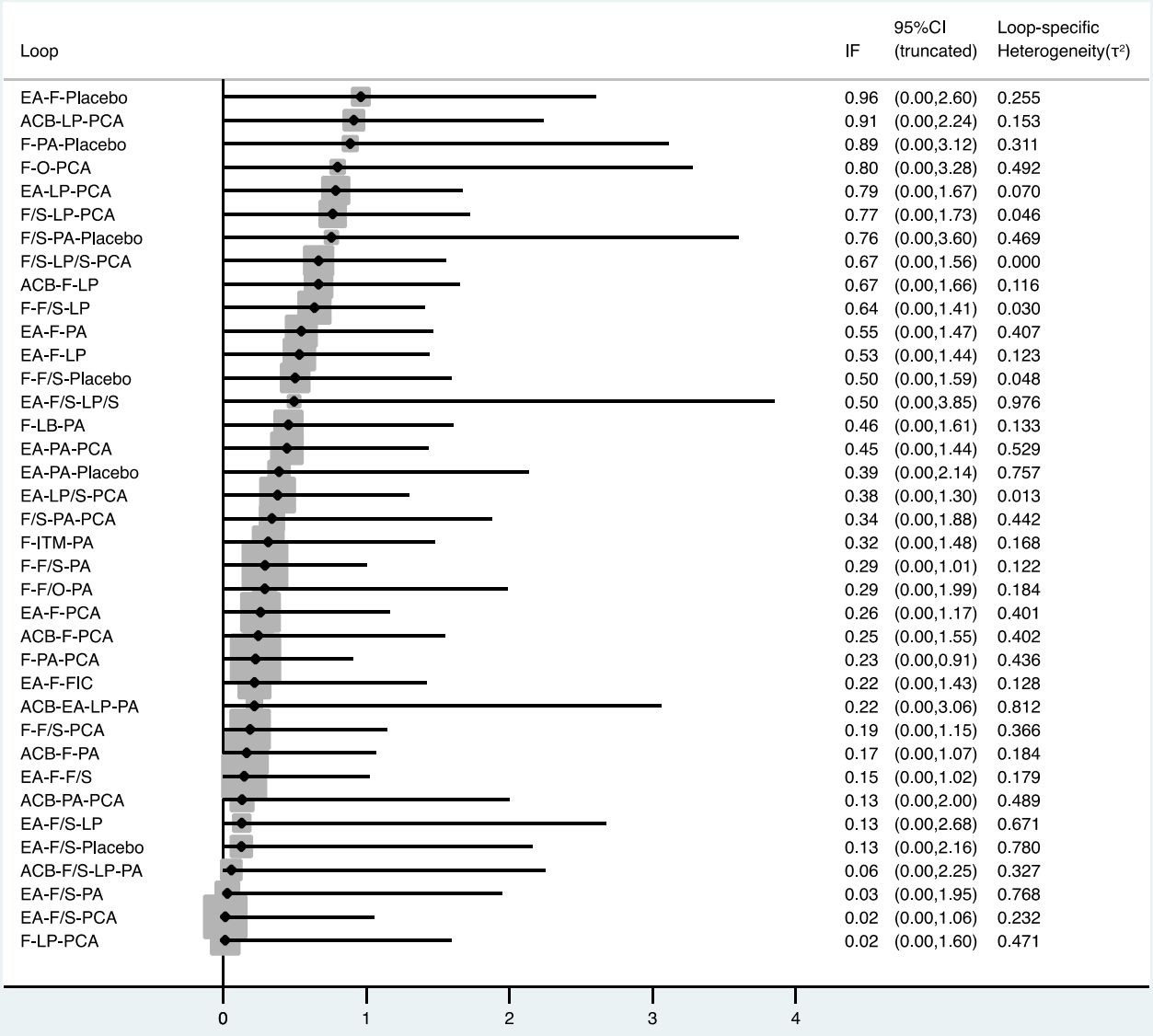


Statistically significant inconsistent loops are: F-F/S-PCA and F/S-LP/S-PCA.

Pain at rest – 2 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.4963508	0.5136898	-0.1033937	0.9072013	0.5997445	1.042561	0.565
ACB vs. F	-0.5382922	0.883521	0.0613156	0.5536242	-0.5996078	1.042645	0.565
EA vs. PCA	0.714459	0.3449161	1.218842	0.3504252	-0.5043831	0.4915553	0.305
EA vs. F	0.5604733	0.5197963	0.484192	0.3135892	0.0762812	0.6068747	0.9
EA vs. F/S	0.0759273	0.5167753	-0.8551048	0.3855203	0.9310321	0.6447204	0.149
EA vs. FIC	-5.33E-12	0.8900503	0.8587103	0.9091196	-0.8587103	1.272277	0.5
EA vs. LP	-0.0586242	0.9003619	-0.0151693	0.9186631	-0.0434549	1.28631	0.973
EA vs. LP/S	-4.03E-12	0.8905633	-0.3884355	0.8402196	0.3884355	1.224366	0.751
EA vs. PA	0.1933449	0.4036345	0.1764752	0.3404475	0.0168697	0.5279854	0.975
F vs. PCA*	0.7046214	0.2460318	-0.0071802	0.336625	0.7118017	0.4170877	0.088
F vs. F/O*	-0.991892	0.8754308	-0.0229466	1.573003	-0.9689454	1.799316	0.59
F vs. F/S	-1.958725	0.3725248	-0.1396307	0.3620586	-1.819094	0.5195375	0
F vs. FIC	0.3140038	0.8670591	-0.5436571	0.9310363	0.857661	1.27225	0.5
F vs. ITM*	-0.1134436	0.8853894	0.9160535	63.26489	-1.029497	63.27108	0.987
F vs. LP	-0.5223345	0.8767102	-0.5643725	0.9412245	0.042038	1.286283	0.974
F vs. O*	0.1563521	0.8941007	-0.5247403	1.607398	0.6810925	1.841864	0.712
F vs. PA	-0.2664878	0.5126602	-0.3365606	0.2733903	0.0700729	0.5810018	0.904
F/O vs. PCA*	0.991892	0.8761338	1.960837	1.571829	-0.9689454	1.799316	0.59
F/S vs. PCA	0.8110328	0.6468442	1.655117	0.3246584	-0.8440841	0.7239214	0.244
F/S vs. F/S/O*	-0.37509	0.8740477	2.949368	63.26547	-3.324458	63.27143	0.958
F/S vs. LP/S	-0.5066413	0.8829677	1.01214	0.8108984	-1.518781	1.198828	0.205
F/S vs. PA	0.2683959	0.5963914	0.859268	0.3519607	-0.590872	0.6925023	0.394
LB vs. PA*	-0.2049998	0.8575166	-1.552934	63.26395	1.347934	63.26978	0.983
LP/S vs. PCA	0.1508447	0.8708589	2.046475	0.8101669	-1.89563	1.189479	0.111
O vs. PCA*	0.6254082	0.8945188	-0.0556842	1.6067	0.6810925	1.841864	0.712
PA vs. PCA	0.7190217	0.2215771	0.9434107	0.3644069	-0.224389	0.4263721	0.599
PA vs. Placebo*	1.775432	0.5354388	1.683519	36.52531	0.0919127	36.5291	0.998

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain at rest – 24 hr. The overall chi-square test for inconsistency gave a p-value of 0.96

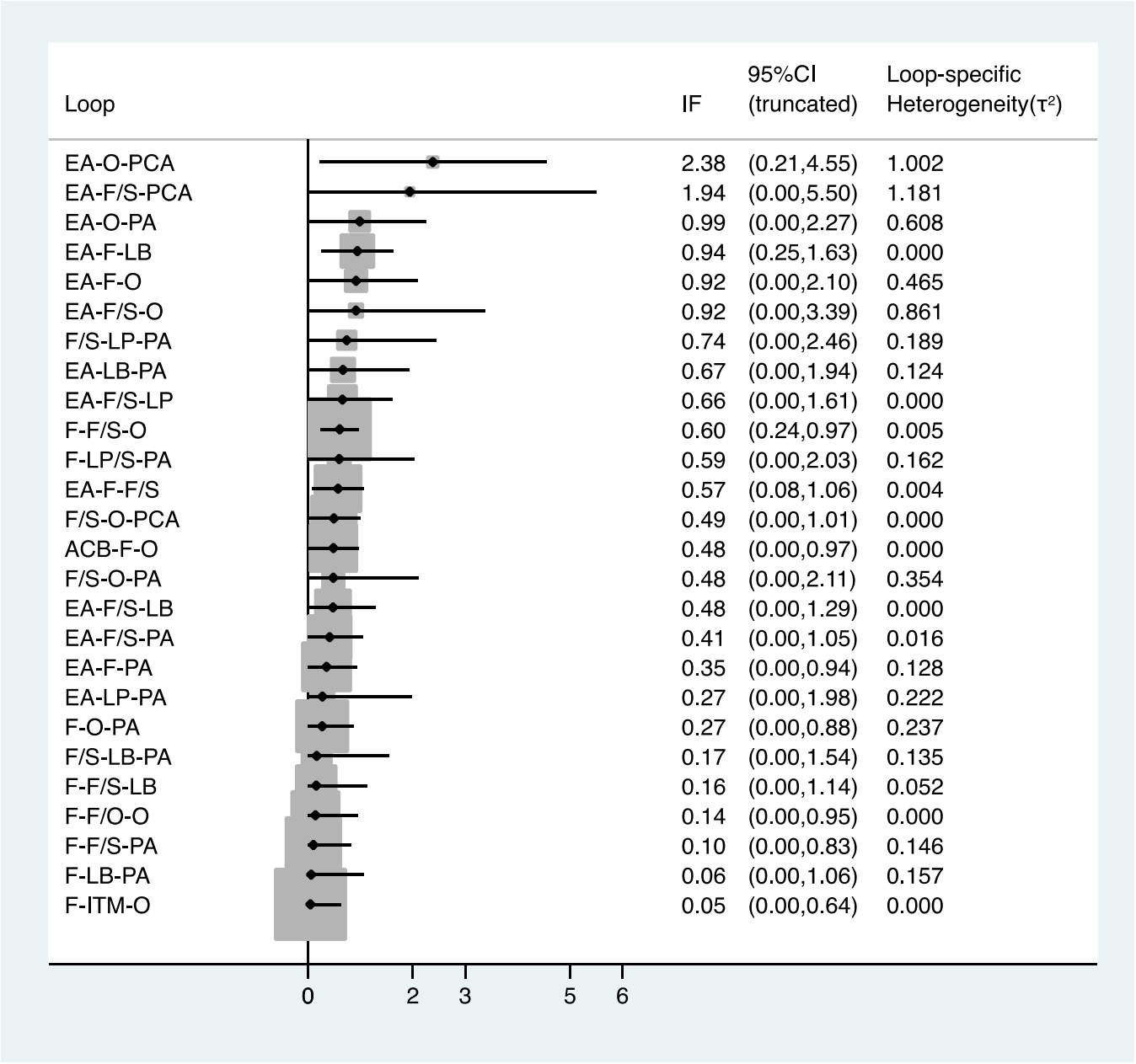


Statistically significant inconsistent loops are: none.

Pain at rest – 24 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.5956776	0.529496	0.7467902	0.2614636	-0.1511126	0.5905251	0.798
ACB vs. F	0.0798803	0.2960081	0.016878	0.3433949	0.0630024	0.453365	0.889
ACB vs. LP	0.3007836	0.6995172	-0.1476987	0.3717105	0.4484823	0.7921446	0.571
ACB vs. PA	-0.2020682	0.5033308	-0.0122324	0.2682519	-0.1898358	0.5703504	0.739
ACB/S vs. F/S*	-0.3743436	0.7451455	-1.74977	63.25831	1.375426	63.2627	0.983
EA vs. PCA	0.6294256	0.2944237	0.5263879	0.1895638	0.1030377	0.3502612	0.769
EA vs. F	0.1306834	0.3025	-0.198592	0.1871468	0.3292754	0.3557069	0.355
EA vs. F/S	-0.3676568	0.3893288	-0.2994663	0.2429106	-0.0681904	0.4585348	0.882
EA vs. FIC	-9.72E-12	0.7496759	-0.4617765	0.5315583	0.4617765	0.9190039	0.615
EA vs. LP	0.1946956	0.5234556	-0.3847285	0.3448022	0.5794242	0.6268065	0.355
EA vs. LP/S	-0.4027777	0.7480851	-0.3349229	0.5578842	-0.0678549	0.9325155	0.942
EA vs. PA	-0.5433456	0.245694	-0.0085761	0.1941741	-0.5347696	0.3133023	0.088
EA vs. Placebo	0.82622	0.3550862	0.8839699	0.2956742	-0.0577499	0.4614296	0.9
F vs. PCA*	0.7635584	0.1524948	0.5280178	0.1779977	0.2355406	0.2343075	0.315
F vs. F/O*	-0.4466252	0.7390049	-0.9733413	1.300424	0.5267161	1.490771	0.724
F vs. F/S	-0.3045809	0.2611528	-0.1208384	0.2563769	-0.1837425	0.3659092	0.616
F vs. FIC	-0.3402179	0.5062966	0.1223968	0.7668307	-0.4626147	0.9188928	0.615
F vs. ITM	0.7408456	0.5275963	0.4355519	0.5350465	0.3052938	0.7514191	0.685
F vs. LB	0.1841814	0.7157049	-0.2739582	0.4348035	0.4581396	0.8374292	0.584
F vs. LP	-0.4592709	0.4234228	0.1570356	0.3606216	-0.6163066	0.5554052	0.267
F vs. O*	-0.1766341	0.7499335	1.183735	1.317734	-1.360369	1.517732	0.37
F vs. PA*	-0.1261357	0.2131105	-0.0975642	0.1526943	-0.0285716	0.2621604	0.913
F vs. Placebo	1.614159	0.778546	0.9061232	0.2385953	0.7080353	0.8142859	0.385
F/O vs. PA	0.5955011	0.7397625	0.0678107	1.299131	0.5276904	1.490771	0.723
F/S vs. PCA	0.888665	0.3834747	0.8707884	0.2183385	0.0178767	0.4415022	0.968
F/S vs. F/S/O*	0.105224	0.7327663	1.755969	63.25362	-1.650745	63.25779	0.979
F/S vs. LP	0.4460126	0.7287202	0.0341696	0.3434608	0.411843	0.8056062	0.609
F/S vs. LP/S	-0.5014482	0.751187	0.2115042	0.5560929	-0.7129525	0.9346236	0.446
F/S vs. PA	-0.1135055	0.4925494	0.1426425	0.2083225	-0.256148	0.5347936	0.632
F/S vs. Placebo	1.524803	0.5363011	1.074297	0.2938251	0.450506	0.6113181	0.461
ITM vs. PA	-0.5510915	0.5201202	-0.8568329	0.5423108	0.3057414	0.7514156	0.684
LB vs. PA	0.1567462	0.4163697	-0.3023315	0.7264226	0.4590777	0.8372887	0.583
LP vs. PCA	1.208822	0.5361246	0.6008684	0.3271343	0.6079537	0.6280883	0.333
LP/S vs. PCA	0.607635	0.5743157	1.342394	0.675563	-0.7347594	0.8867223	0.407
O vs. PCA*	0.1766341	0.7481769	1.537003	1.320726	-1.360369	1.517732	0.37
PA vs. PCA	0.6634956	0.1376574	0.9685829	0.1868893	-0.3050873	0.2319781	0.188
PA vs. Placebo	0.9139768	0.2865305	1.270288	0.3169053	-0.3563111	0.4264931	0.403

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain at rest – 48 hr. The overall chi-square test for inconsistency gave a p-value of 0.55.

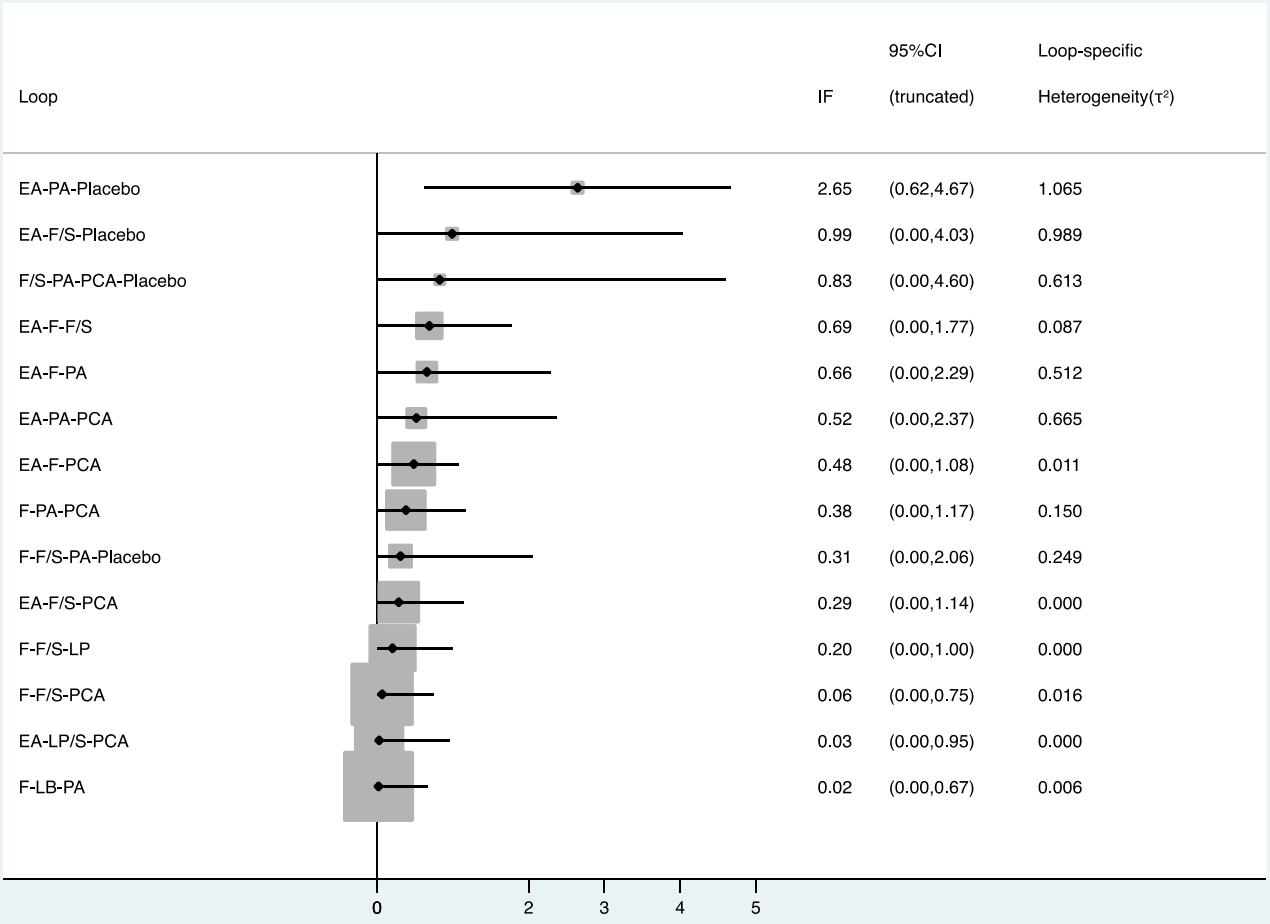


Statistically significant inconsistent loops are: EA-O-PCA, EA-F-LB, F-F/S-O, and EA-F-F/S.

Pain at rest – 48 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F	0.1027591	0.3135033	-0.0560006	0.7054254	0.1587597	0.7719554	0.837
ACB vs. PA	-0.2198217	0.690891	-0.0619214	0.3448446	-0.1579003	0.7721711	0.838
ACB/S vs. F/S*	-0.2206406	0.7235974	-1.097906	63.25711	0.8772656	63.26125	0.989
EA vs. PCA	0.5030026	0.3072135	0.1853288	0.2038172	0.3176738	0.3686313	0.389
EA vs. F	-0.2826231	0.295146	-0.1473865	0.2136979	-0.1352366	0.364393	0.711
EA vs. F/S	-0.0175624	0.4315223	-0.3576015	0.2607218	0.3400391	0.5041696	0.5
EA vs. LP	0.6372842	0.70436	-0.240866	0.4069891	0.8781502	0.8134881	0.28
EA vs. LP/S	-0.0815806	0.7228386	-1.035324	0.5647476	0.9537436	0.9171855	0.298
EA vs. PA	-1.072032	0.2589016	0.0583773	0.2001956	-1.130409	0.3277051	0.001
EA vs. Placebo	1.286518	0.4016689	-0.3747007	0.3210237	1.661218	0.5148288	0.001
F vs. PCA*	0.4270211	0.1545759	0.572432	0.2142535	-0.1454108	0.2641189	0.582
F vs. F/O*	-0.181408	0.718858	-0.5347252	1.273725	0.3533172	1.45898	0.809
F vs. F/S	-0.3508161	0.2907734	0.1816193	0.2775084	-0.5324355	0.4018528	0.185
F vs. FIC*	-0.1516083	0.6976436	0.953042	63.25857	-1.10465	63.26242	0.986
F vs. LB	0.017824	0.6955201	-0.3933766	0.5256783	0.4112006	0.8718291	0.637
F vs. LP	0.0000297	0.5081728	0.3190138	0.4663217	-0.3189841	0.6896052	0.644
F vs. O*	-0.2555761	0.7300796	1.042296	1.286948	-1.297872	1.481471	0.381
F vs. PA*	0.1117206	0.2490804	-0.2981372	0.1686154	0.4098578	0.3007874	0.173
F/O vs. PA*	0.181408	0.7188582	-0.1725662	1.273726	0.3539741	1.458981	0.808
F/S vs. PCA	0.8981934	0.4342637	0.4456395	0.2359486	0.4525539	0.4947872	0.36
F/S vs. F/S/O*	-0.2394693	0.7120572	1.083846	63.26011	-1.323315	63.26405	0.983
F/S vs. LP	0.1813205	0.7091532	0.2704094	0.43645	-0.0890888	0.8326179	0.915
F/S vs. LP/S	-0.7182773	0.7341737	-0.2236548	0.5647249	-0.4946225	0.9262425	0.593
F/S vs. PA	-0.187351	0.4784188	-0.0754422	0.2351139	-0.1119088	0.5330696	0.834
F/S vs. Placebo	-0.3887241	0.6864093	0.7615832	0.323095	-1.150307	0.7586487	0.129
ITM vs. PA*	-0.1477831	0.5015085	-1.293189	44.72991	1.145406	44.73271	0.98
LB vs. PA	0.2126874	0.5059093	-0.1991961	0.7099309	0.4118835	0.8717579	0.637
LP vs. PCA	0.4886215	0.5182882	0.1604234	0.4559421	0.3281981	0.6903088	0.634
LP/S vs. PCA	0.915956	0.5824699	1.011485	0.6677829	-0.095529	0.8860934	0.914
O vs. PCA*	0.1022304	0.7279279	1.400102	1.2906	-1.297872	1.481471	0.381
PA vs. PCA	0.6186773	0.1550395	0.6981868	0.2093994	-0.0795095	0.2603801	0.76
PA vs. Placebo	0.2502403	0.3127754	1.261697	0.3888565	-1.011456	0.4991101	0.043

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain at rest – 72 hr. The overall chi-square test for inconsistency gave a p-value of 0.30.

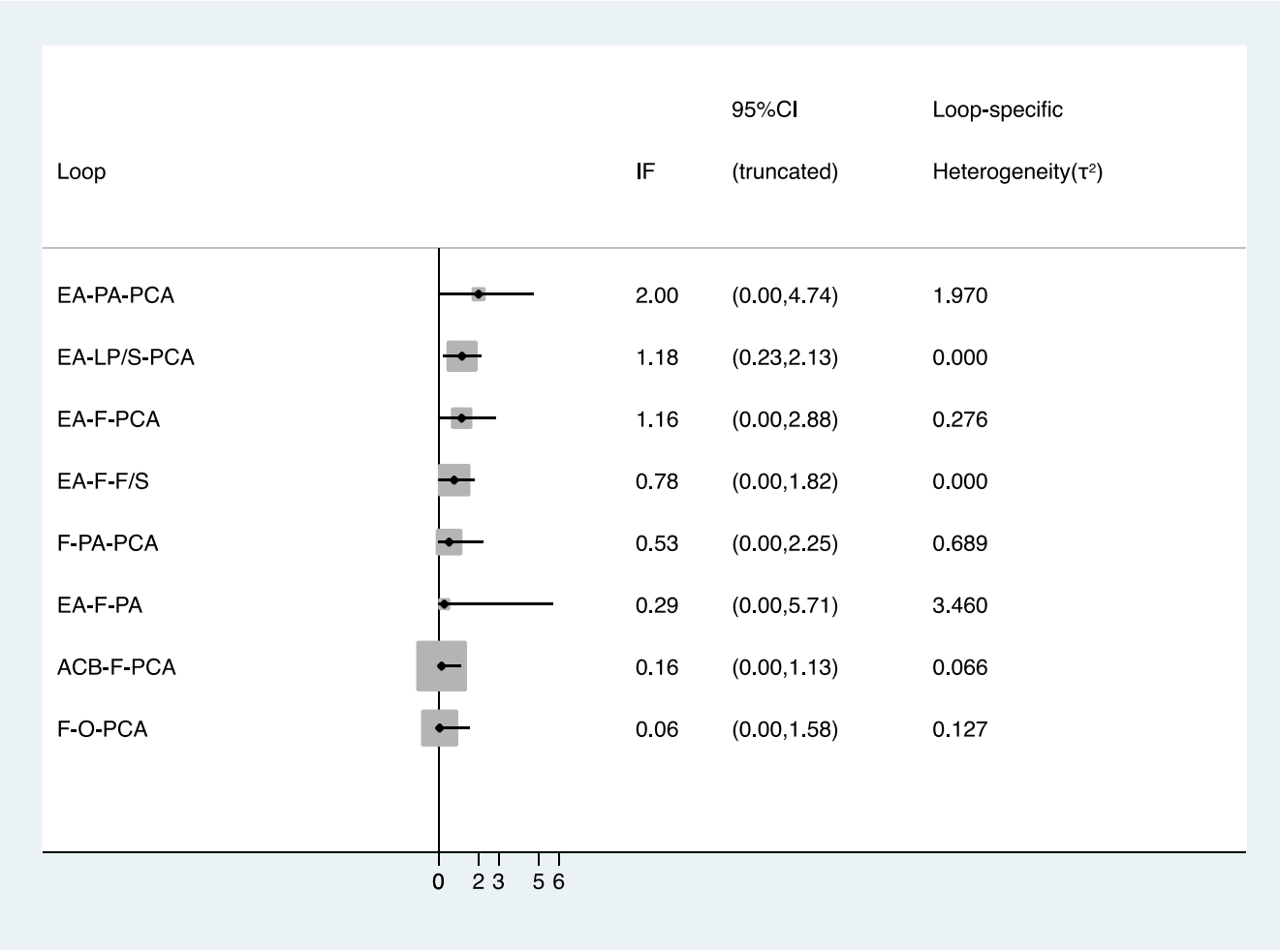


Statistically significant inconsistent loop is EA-PA-Placebo.

Pain at rest – 72 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F*	0.3137187	0.7902099	-0.6629178	63.26125	0.9766364	63.26617	0.988
ACB/S vs. F/S*	0.4412811	0.8251811	-0.0319578	63.26512	0.4732389	63.2705	0.994
EA vs. PCA	0.2563847	0.4844679	0.2271002	0.3217485	0.0292846	0.5815797	0.96
EA vs. F	-0.3480054	0.5858773	-0.0277033	0.3153337	-0.320302	0.6653163	0.63
EA vs. F/S	0.4774829	0.825676	0.1394004	0.4600115	0.3380825	0.9451727	0.721
EA vs. LP/S	-0.0404339	0.8330015	-0.372856	0.8932306	0.3324221	1.221344	0.785
EA vs. PA	-0.7812958	0.3344053	0.4176418	0.3139068	-1.198938	0.4586506	0.009
EA vs. PCA	1.135631	0.3935857	-0.9248885	0.4205532	2.060519	0.5765137	0
F vs. PCA	0.2139781	0.2359722	0.6166727	0.3604328	-0.4026946	0.4307164	0.35
F vs. F/S*	0.1712416	0.468661	0.5673231	0.6076547	-0.3960814	0.7673597	0.606
F vs. LB	0.0475307	0.8077175	-0.2043791	0.6273812	0.2519098	1.022749	0.805
F vs. LP*	0.4091024	0.8196796	0.4916059	1.646008	-0.0825036	1.838402	0.964
F vs. PA	0.2253987	0.363714	-0.2084031	0.2840874	0.4338018	0.4616152	0.347
F/S vs. PCA	0.0625723	0.822574	0.00306	0.4429455	0.0595123	0.9349186	0.949
F/S vs. LP	0.1227307	0.8191229	0.0403661	1.646989	0.0823646	1.838535	0.964
F/S vs. Placebo	-0.2738039	0.8054577	0.1007918	0.5316072	-0.3745958	0.9650744	0.698
LB vs. PA	0.1467948	0.5831024	-0.1056993	0.8401038	0.2524941	1.022638	0.805
LP/S vs. PCA*	0.4466609	0.6373323	0.3383265	1.554162	0.1083343	1.679646	0.949
PA vs. PCA	0.5178501	0.2680845	0.1760919	0.3245078	0.3417582	0.4210424	0.417
PA vs. Placebo	-0.6396888	0.4203132	1.279981	0.4197978	-1.91967	0.5943838	0.001

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain with movement – 2 hr. The overall chi-square test for inconsistency gave a p-value of 0.71.

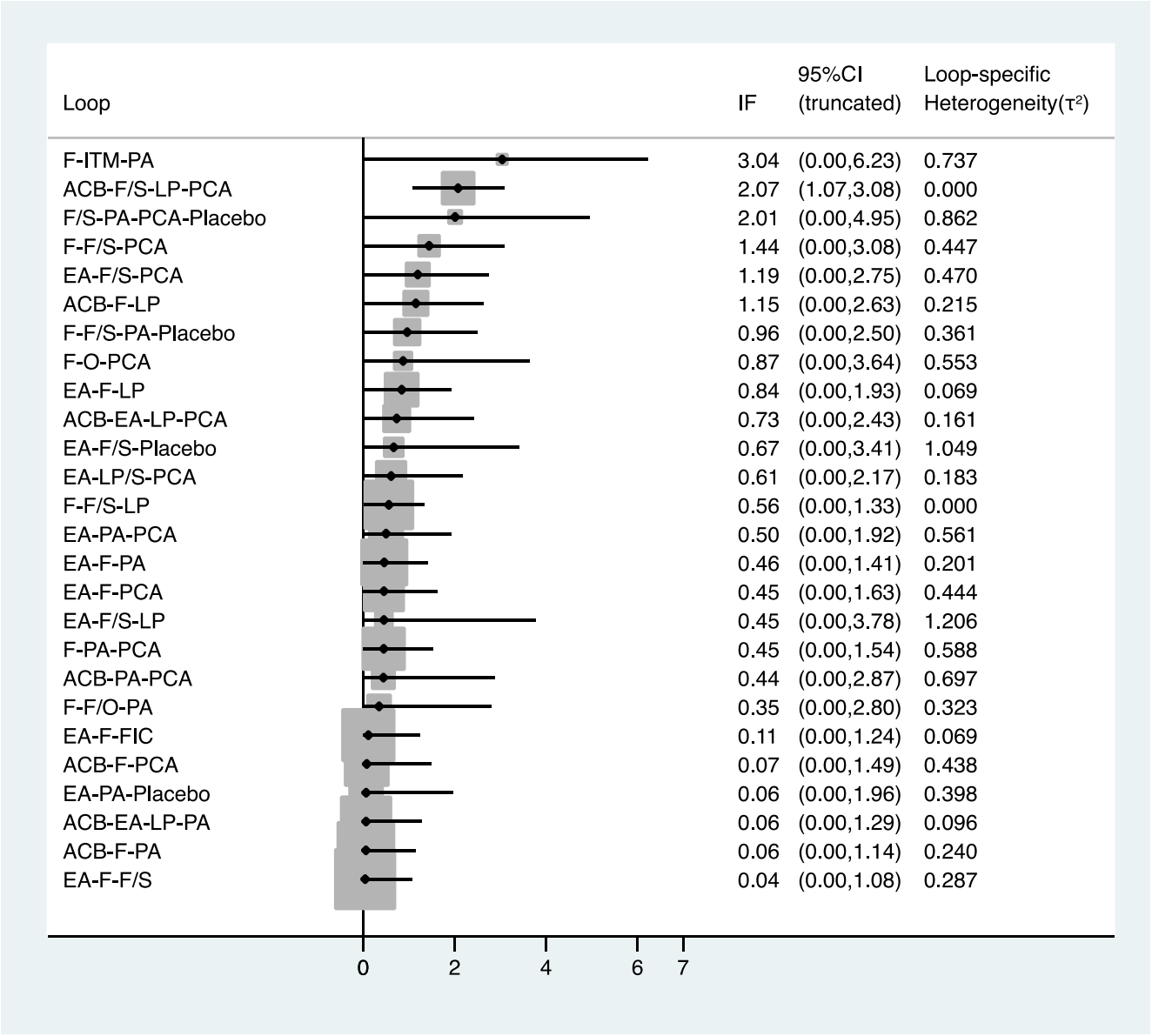


Statistically significant inconsistent loop is EA-LP/S-PCA.

Pain with movement – 2 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.3527034	0.6224525	0.288999	1.13829	0.0637044	1.29737	0.961
ACB vs. F	-0.5382918	1.073732	-0.4750803	0.728557	-0.0632115	1.297573	0.961
EA vs. PCA*	1.127325	0.5116536	2.600743	0.667204	-1.473418	0.840225	0.079
EA vs. F	1.44457	1.096438	0.6900214	0.5548065	0.7545485	1.227883	0.539
EA vs. F/S	-4.62E-12	1.063849	0.1900803	0.939378	-0.1900803	1.419227	0.893
EA vs. FIC*	1.84E-08	1.053635	3.351514	63.2769	-3.351514	63.28568	0.958
EA vs. LP/S*	7.30E-12	1.013313	3.623426	1.970056	-3.623426	2.215383	0.102
EA vs. PA	1.522333	0.7046545	-0.1951222	0.5746182	1.717455	0.9093007	0.059
F vs. PCA*	0.8281177	0.4420418	0.8431098	0.6322828	-0.0149921	0.7719233	0.985
F vs. F/S	-0.6824156	0.7682648	-0.8682595	1.192916	0.1858439	1.418904	0.896
F vs. ITM*	1.60E-08	1.053632	1.664782	63.27303	-1.664782	63.2818	0.979
F vs. O*	1.093446	1.085654	1.086405	2.022569	0.007041	2.299209	0.998
F vs. PA	-0.2100917	0.7574447	-0.4291823	0.546421	0.2190906	0.9339781	0.815
LP/S vs. PCA*	0.1568285	1.013417	3.780254	1.969895	-3.623426	2.215383	0.102
O vs. PCA*	-0.2572812	1.079632	-0.2643222	2.032218	0.007041	2.299209	0.998
PA vs. PCA	1.58264	0.4182789	0.3515137	0.6027712	1.231126	0.7337033	0.093

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain with movement – 24 hr. The overall chi-square test for inconsistency gave a p-value of 0.92.

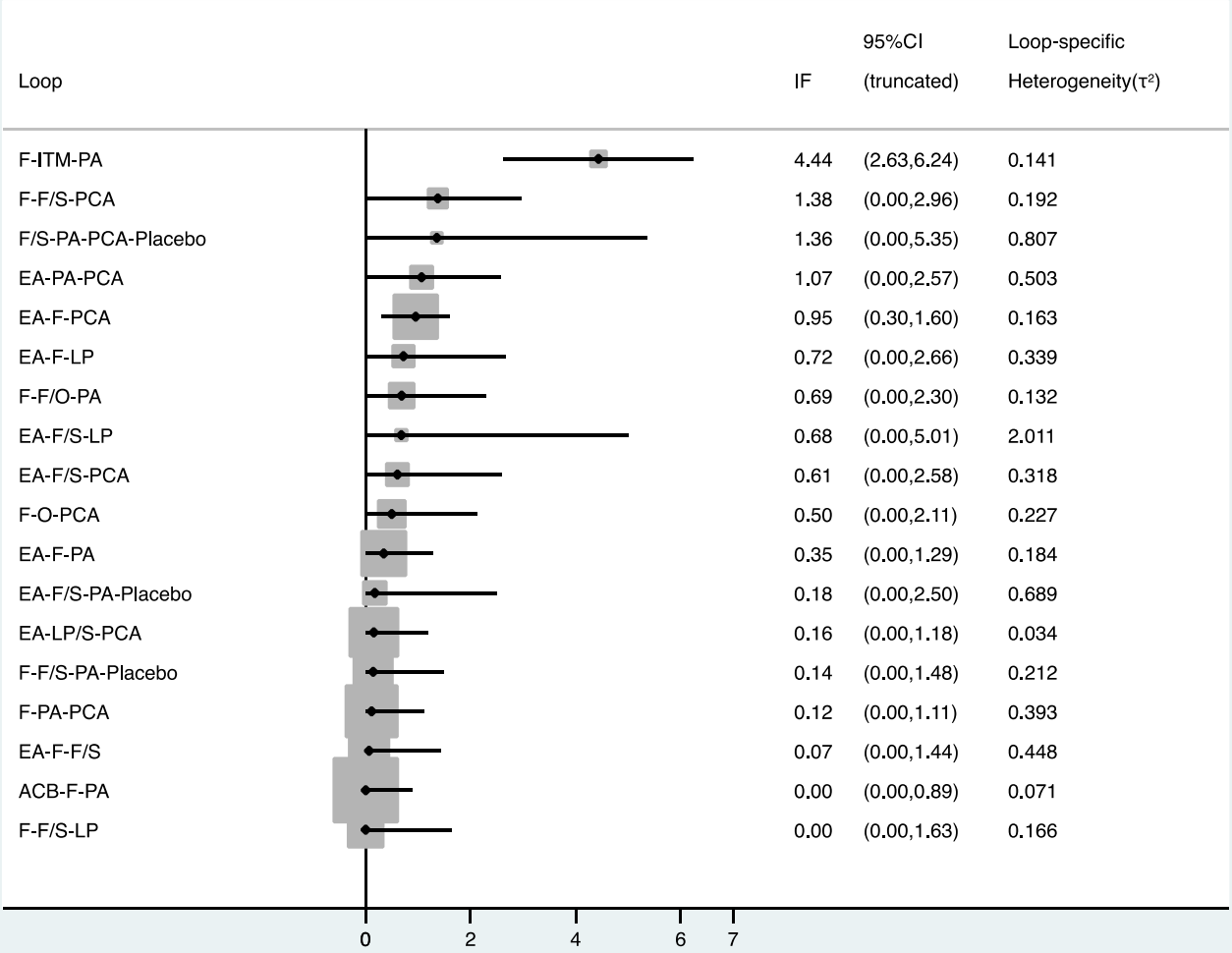


Statistically significant inconsistent loop is ACB-F/S-LP-PCA

Pain with movement – 24 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.4305404	0.6499163	0.7592753	0.3453666	-0.3287348	0.7359883	0.655
ACB vs. F	-0.1777607	0.3677098	-0.0287188	0.4450777	-0.1490419	0.577327	0.796
ACB vs. LP	0.5263714	0.8800595	-0.1774675	0.6708989	0.7038389	1.106621	0.525
ACB vs. PA	-0.1449207	0.6295153	-0.4003441	0.3613178	0.2554233	0.7258373	0.725
ACB/S vs. F/S*	0.1734847	0.9129806	-2.407041	63.26726	2.580526	63.27384	0.967
EA vs. PCA	1.054999	0.3568047	0.5633601	0.3301061	0.4916385	0.4862074	0.312
EA vs. F	-0.0339787	0.4574097	-0.0048518	0.2925025	-0.0291269	0.5428075	0.957
EA vs. F/S	-0.388136	0.4711382	-0.4338022	0.4187383	0.0456662	0.6299802	0.942
EA vs. FIC	2.24E-08	0.9225227	0.1516448	0.9342378	-0.1516448	1.312954	0.908
EA vs. LP	0.3459361	0.9047998	0.104456	0.6406591	0.2414801	1.108651	0.828
EA vs. LP/S	-0.4479576	0.9197994	-0.0713635	0.948634	-0.3765941	1.320215	0.775
EA vs. PA	-0.4479039	0.4498911	-0.1298267	0.3118987	-0.3180772	0.547437	0.561
EA vs. Placebo	0.6563949	0.9425551	0.3768011	0.5104264	0.2795938	1.071689	0.794
F vs. PCA*	0.6981676	0.2287968	0.9762648	0.2920575	-0.2780972	0.3708605	0.453
F vs. F/O*	-0.4103306	0.9098032	-1.735738	1.629003	1.325407	1.861201	0.476
F vs. F/S	-0.3297528	0.4082937	-0.4755753	0.4216438	0.1458225	0.5869213	0.804
F vs. FIC	0.158817	0.9000396	0.0084835	0.9558731	0.1503335	1.312922	0.909
F vs. ITM	-1.712911	0.6527427	1.041028	0.9055453	-2.753939	1.116278	0.014
F vs. LP	-0.4444863	0.8999352	0.5034258	0.6195456	-0.9479121	1.092762	0.386
F vs. O*	-0.1247882	0.9171529	1.805704	1.628414	-1.930492	1.870415	0.302
F vs. PA*	0.1453571	0.3193936	-0.4607824	0.2597405	0.6061395	0.411804	0.141
F/O vs. PA*	0.8206646	0.911806	-0.5066612	1.625653	1.327326	1.86121	0.476
F/S vs. PCA	2.437691	0.712953	0.925033	0.3352786	1.512658	0.7892948	0.055
F/S vs. LP	0.2958086	0.9042515	0.771152	0.6822513	-0.4753434	1.132852	0.675
F/S vs. Placebo	0.5196196	0.525257	1.440547	0.6967709	-0.9209272	0.8723178	0.291
ITM vs. PA	-1.17205	0.8836648	1.580334	0.6822844	-2.752384	1.116412	0.014
LB vs. PA*	0.0610377	0.8721906	-2.022638	63.26563	2.083675	63.2715	0.974
LP/S vs. PCA*	0.9549858	0.6991963	1.635218	1.671028	-0.680232	1.811393	0.707
O vs. PCA*	1.66E-08	0.9156386	1.930491	1.630968	-1.930491	1.870415	0.302
PA vs. PCA	1.019174	0.2676288	1.029978	0.2942291	-0.0108035	0.3975445	0.978
PA vs. lacebo	1.05963	0.6335652	0.3432458	0.5853919	0.7163839	0.8626102	0.406

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain with movement – 48 hr. The overall chi-square test for inconsistency gave a p-value of 0.11

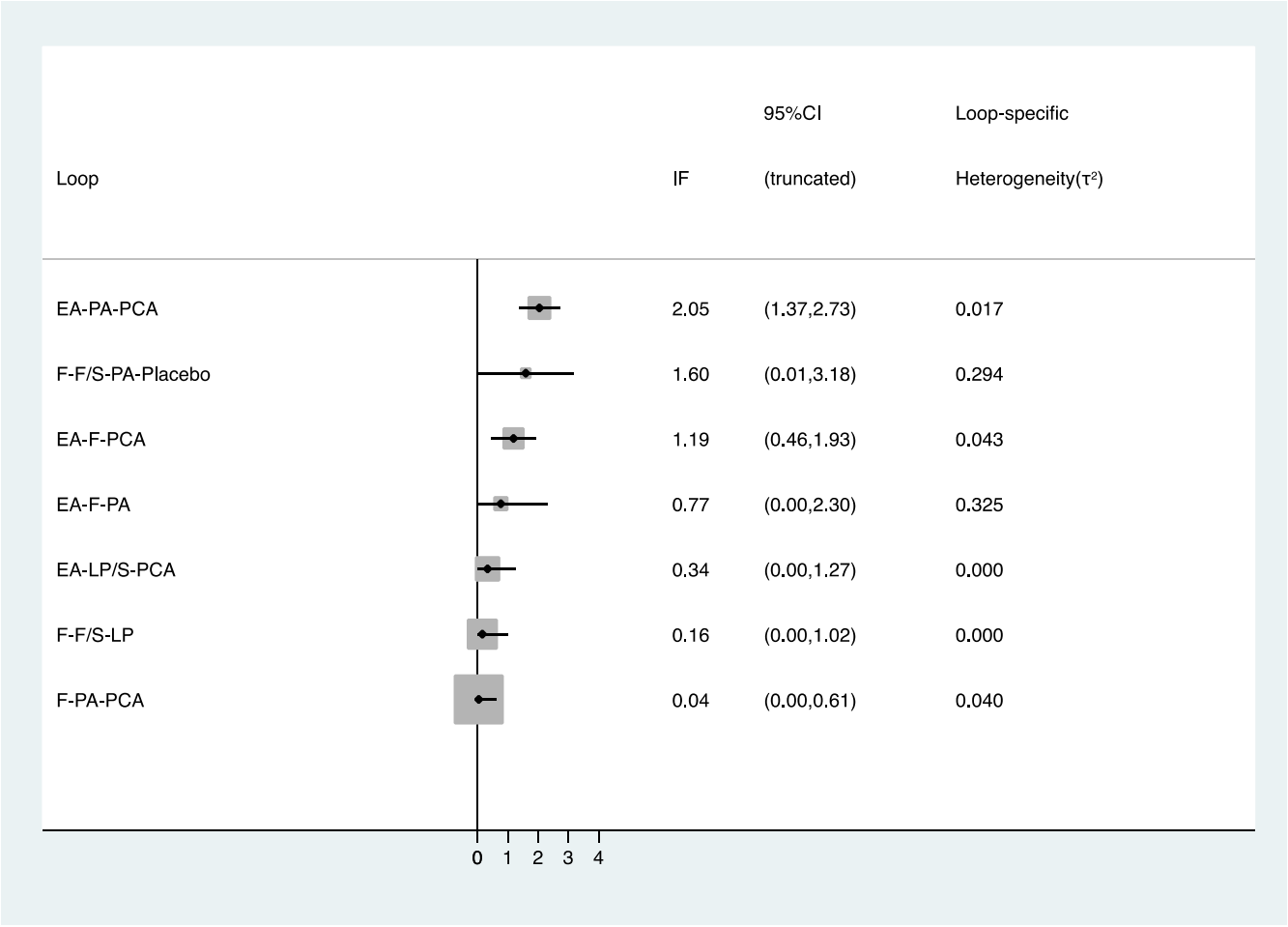


Statistically significant inconsistent loops are F-ITM-PA and EA-F-PCA.

Pain with movement – 48 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F	0.0657823	0.3715436	0.3458402	0.8494015	-0.2800578	0.9271098	0.763
ACB vs. PA	5.52E-07	0.8228273	-0.2821163	0.4280062	0.2821169	0.9274881	0.761
ACB/S vs. F/S*	-0.3966483	0.8477887	-2.0021	63.26454	1.605452	63.27022	0.98
EA vs. PCA	0.7381741	0.2922017	-0.3275723	0.3272963	1.065746	0.4388444	0.015
EA vs. F	-0.6937203	0.379416	-0.1611696	0.2934193	-0.5325508	0.4797097	0.267
EA vs. F/S	-0.8423143	0.5088637	-0.6612517	0.4088784	-0.1810626	0.6525185	0.781
EA vs. LP	0.4368256	0.8372914	-0.0732454	0.7656822	0.5100711	1.134604	0.653
EA vs. LP/S	-0.3105751	0.8486804	-1.363125	0.9178714	1.05255	1.248994	0.399
EA vs. PA	-1.104338	0.4849181	-0.5387033	0.2964284	-0.5656342	0.5683566	0.32
F vs. PCA*	0.5210063	0.2261205	0.830785	0.3073748	-0.3097787	0.3815164	0.417
F vs. F/O*	-0.5015881	0.8400269	-2.274233	1.51528	1.772645	1.726496	0.305
F vs. F/S	-0.2375952	0.3798188	-0.5702397	0.4616614	0.3326445	0.5977488	0.578
F vs. FIC*	-0.134221	0.8248396	1.259188	63.26171	-1.393409	63.26709	0.982
F vs. ITM	-2.391788	0.784061	1.931011	0.8011374	-4.322799	1.12097	0
F vs. LP	0.3977337	0.8387446	0.6226676	0.7735773	-0.2249339	1.140412	0.844
F vs. O*	0.1129985	0.8552468	1.353701	1.525744	-1.240703	1.750579	0.478
F vs. PA*	-0.1349605	0.3172818	-0.4755113	0.2702114	0.3405508	0.4166557	0.414
F/O vs. PA*	1.003181	0.8432656	-0.7710082	1.509892	1.77419	1.72651	0.304
F/S vs. PCA	2.015443	0.9899838	0.884162	0.3334388	1.131281	1.046263	0.28
F/S vs. LP	0.595534	0.8380252	1.172983	0.81792	-0.5774495	1.170668	0.622
F/S vs. Placebo	0.5026474	0.5918283	0.6421233	0.6850214	-0.1394759	0.9052763	0.878
ITM vs. PA	-2.136023	0.7795535	2.185731	0.8055217	-4.321754	1.120968	0
LP/S vs. PCA*	1.245208	0.6664858	0.0973941	1.548654	1.147814	1.686919	0.496
O vs. PCA*	-0.0753322	0.8536691	1.16537	1.528394	-1.240703	1.75058	0.478
PA vs. PCA	0.7899674	0.2690743	1.1791	0.3025254	-0.3891324	0.4044478	0.336
PA vs. Placebo	0.5806508	0.5845472	0.442419	0.6911551	0.1382318	0.9052086	0.879

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Pain with movement – 72 hr. The overall chi-square test for inconsistency gave a p-value of 0.001

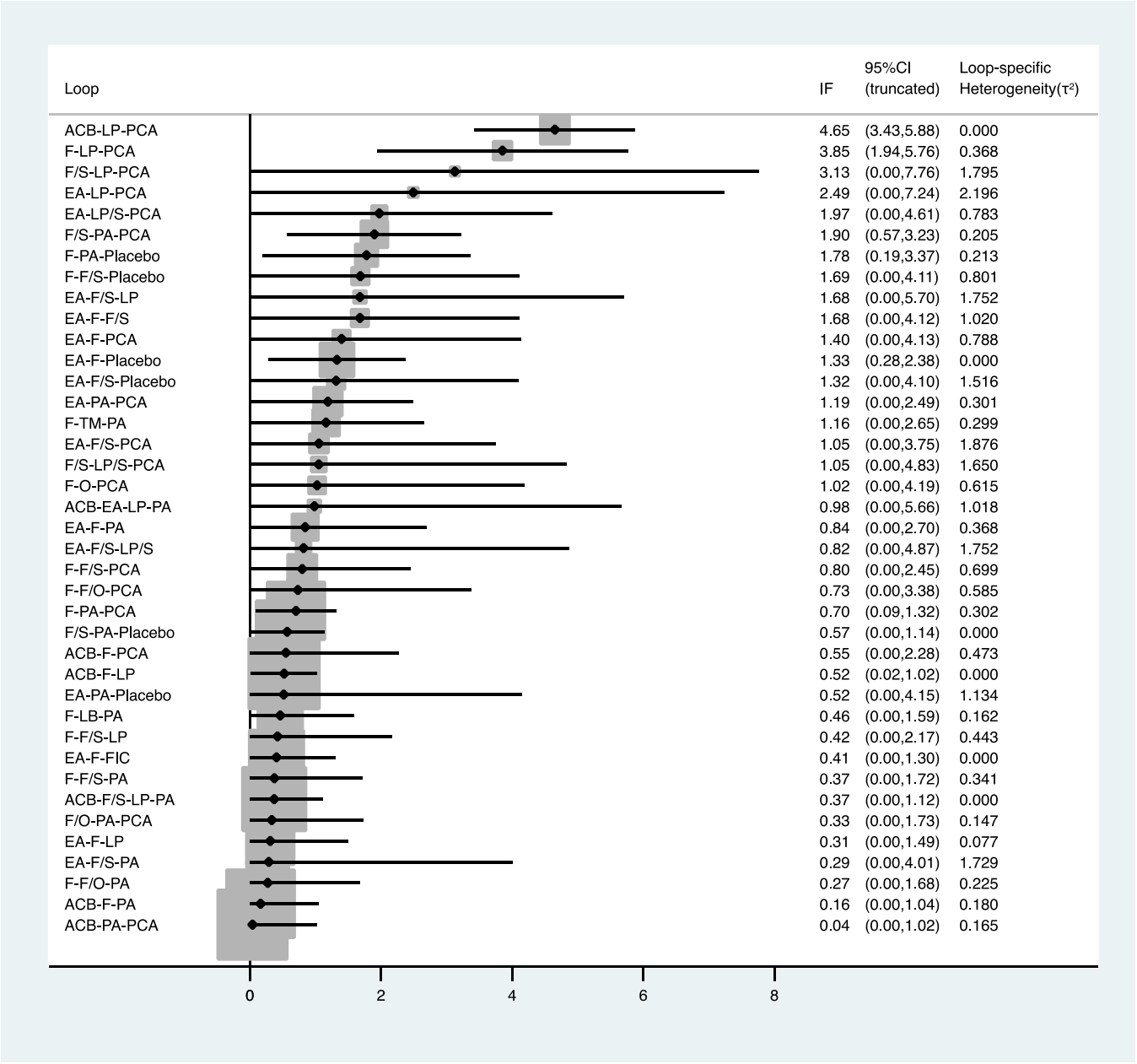


Statistically significant inconsistent loops are EA-PA-PCA, F-F/S-PA-Placebo, and EA-F-PCA.

Pain with movement – 72 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB/S vs. F/S*	-0.5189985	0.6395477	-0.7852784	63.25646	0.2662799	63.25969	0.997
EA vs. PCA	0.4340065	0.3050286	-1.135381	0.2984533	1.569387	0.426833	0
EA vs. F	-1.027104	0.4561836	-0.4813277	0.3381279	-0.545776	0.5677962	0.336
EA vs. LP/S	-0.4034607	0.6442416	-0.9271575	0.7599495	0.5236968	0.9952569	0.599
EA vs. PA	-1.532643	0.4011699	-0.2200119	0.3344245	-1.312631	0.5222181	0.012
F vs. PCA	0.2048895	0.2216338	0.6138649	0.37199	-0.4089755	0.4328046	0.345
F vs. F/S*	-0.4999693	0.4083726	0.8780999	0.6197798	-1.378069	0.7422091	0.063
F vs. ITM*	-4.430711	0.771238	0.6237402	63.25528	-5.054451	63.25998	0.936
F vs. LP*	-5.04E-10	0.6240592	1.023978	1.406941	-1.023978	1.538387	0.506
F vs. PA	0.2725798	0.3525423	-0.3529663	0.3090088	0.6255461	0.4684568	0.182
F/S vs. LP*	0.4172906	0.6248991	-0.6065399	1.405987	1.02383	1.538535	0.506
F/S vs. Placebo	-0.4159181	0.4100642	0.9624571	0.6191368	-1.378375	0.7424279	0.063
LP/S vs. PCA*	0.4471118	0.499532	-0.8942496	1.241641	1.341361	1.338241	0.316
PA vs. PCA	-0.0338194	0.3418739	0.741158	0.3094024	-0.7749774	0.4610703	0.093
PA vs. Placebo	0.4069134	0.4004973	-0.970662	0.6248712	1.377575	0.7423063	0.063

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Opioid consumption – 24 hr. The overall chi-square test for inconsistency gave a p-value of 0.

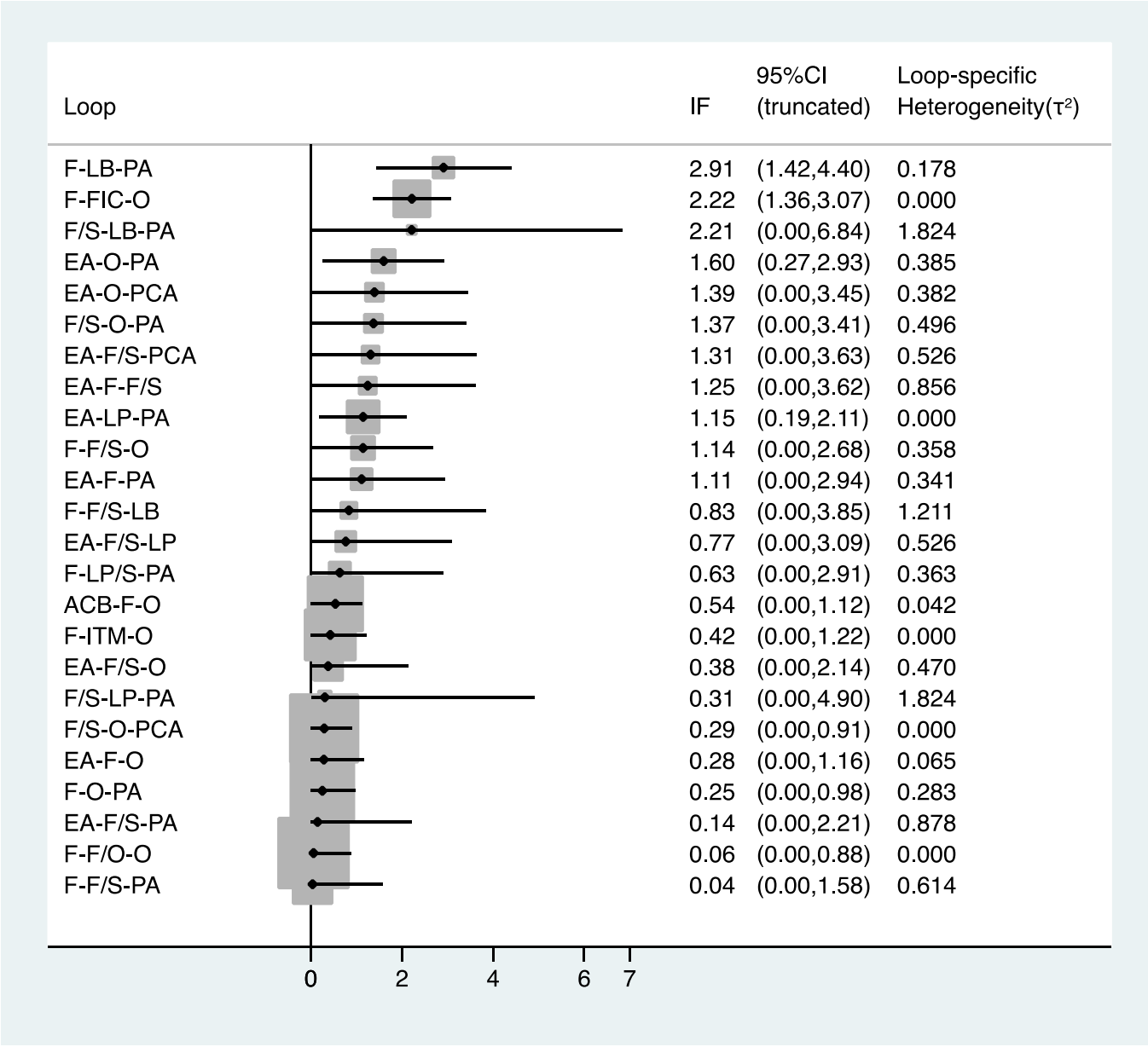


Statistically significant inconsistent loops are ACB-LP-PCA, F-LP-PCA, F/S-PA-PCA, F-PA-Placebo, EA-F-Placebo, and F-PA-PCA

Opioid consumption – 24 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.3934252	0.6112926	0.9330026	0.3453741	-0.5395773	0.7021377	0.442
ACB vs. F	-0.0427588	0.42233	-0.1101992	0.4061811	0.0674404	0.5859568	0.908
ACB vs. LP	0.1512571	0.8210352	-0.9751001	0.50359	1.126357	0.9631727	0.242
ACB vs. PA	-0.0494757	0.5916114	0.0952171	0.3544652	-0.1446929	0.6896737	0.834
EA vs. PCA	2.256948	0.4568791	1.522964	0.3264736	0.7339837	0.5608253	0.191
EA vs. F	-0.0951828	0.8436535	1.002712	0.2833398	-1.097895	0.8900203	0.217
EA vs. F/S	0.8154464	0.4170429	-0.3199075	0.3586973	1.135354	0.5500732	0.039
EA vs. FIC	-0.0279877	0.8687246	0.5838968	0.8792135	-0.6118845	1.236001	0.621
EA vs. LP	-0.0887957	0.8485314	0.4251198	0.4785062	-0.5139156	0.9741528	0.598
EA vs. LP/S	2.39E-10	0.8615175	-1.123032	0.6291339	1.123032	1.066781	0.292
EA vs. PA	0.651906	0.5152802	1.16705	0.3168023	-0.5151435	0.6028939	0.393
EA vs. Placebo	0.1891846	0.6235113	1.396488	0.4920687	-1.207303	0.7942906	0.129
F vs. PCA*	0.9966504	0.1941991	0.7052989	0.2373574	0.2913515	0.3062101	0.341
F vs. F/O*	-1.448067	0.6065456	-0.251221	1.082011	-1.196846	1.235131	0.333
F vs. F/S	-0.7605096	0.3509125	-0.699916	0.3377338	-0.0605935	0.4866065	0.901
F vs. FIC	-0.3401409	0.8343699	-0.9498145	0.9118062	0.6096736	1.235947	0.622
F vs. ITN	-0.2789044	0.4922714	1.231491	0.868644	-1.510395	0.9984399	0.13
F vs. LB	0.1655087	0.8406189	0.0047624	0.5147833	0.1607463	0.985719	0.87
F vs. LP	-0.2959831	0.4948516	-0.9789033	0.5687568	0.6829201	0.7550973	0.366
F vs. O*	0.0281868	0.8666439	1.784536	1.530181	-1.756349	1.760058	0.028
F vs. PA	-0.1664306	0.2457503	0.3507327	0.2086765	-0.5171633	0.3223925	0.109
F vs. Placebo	1.611252	0.8799674	-0.3125766	0.4190111	1.923828	0.9746346	0.048
F/O vs. PCA	1.759446	0.8598127	2.226589	0.6869044	-0.4671432	1.09853	0.671
F/O vs. PA	1.009466	0.8625135	1.482809	0.6876359	-0.4733424	1.100429	0.667
F/S vs. PCA	2.586645	0.5010432	1.301807	0.2777952	1.284837	0.5726247	0.025
F/S vs. F/S/O*	-0.7136226	0.8552609	3.174943	63.26429	-3.888566	63.26999	0.951
F/S vs. LP	0.7697568	0.8500149	-0.0555852	0.4704824	0.8253421	0.9719142	0.396
F/S vs. LP/S	-4.38E-12	0.8619857	-1.341283	0.6082132	1.341283	1.054961	0.204
F/S vs. PA	0.2059065	0.8224711	0.9347282	0.2711632	-0.7288217	0.8660185	0.4
F/S vs. Placebo	0.691025	0.6020903	0.8247475	0.4967328	-0.1337225	0.7805566	0.864
ITM vs. PA	-1.057575	0.853869	0.4518959	0.5179359	-1.50947	0.9986741	0.131
LB vs. PA	0.1259974	0.4881853	-0.0362383	0.8560733	0.1622356	0.9854882	0.869
LP vs. PCA	4.499204	0.9482861	0.8612423	0.4056708	3.637962	1.044311	0
LP/S vs. PCA	3.524593	0.6080785	0.8272388	0.7803402	2.697354	1.005953	0.007
O vs. PCA*	-4.42E-12	0.8651201	1.756349	1.532766	-1.756349	1.760058	0.318
PA vs. PCA	0.442393	0.1652487	1.384193	0.2420434	-0.9418	0.2930122	0.001
PA vs. Placebo	0.0015634	0.8267914	-0.120238	0.4408192	0.1218014	0.9369662	0.897

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Opioid consumption – 48 hr. The overall chi-square test for inconsistency gave a p-value of 0.000.

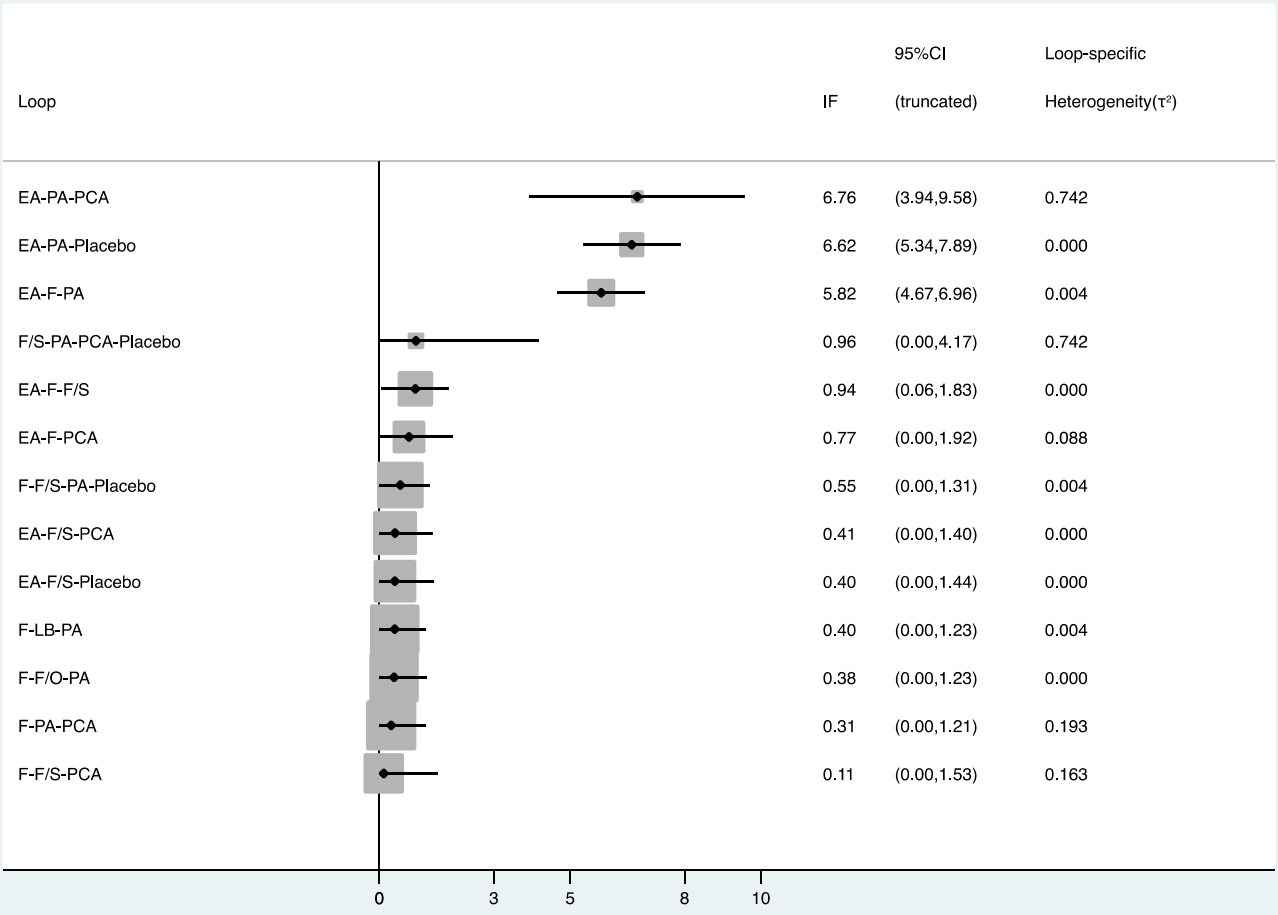


Statistically significant inconsistent loops are F-LB-PA, F-FIC-O, and EA-O-PA.

Opioid consumption – 48 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F	-0.0451371	0.440078	-0.4712012	0.5680403	0.4260641	0.7185655	0.553
ACB vs. PA	-0.3802751	0.5364395	0.0452107	0.4781504	-0.4254857	0.7186066	0.554
EA vs. PCA	1.157585	0.4543816	0.3382258	0.3278999	0.8193597	0.5604889	0.144
EA vs. F	-0.591501	0.7733304	0.1149453	0.3011136	-0.7064463	0.8302649	0.395
EA vs. F/S	-0.2145541	0.3875068	-0.6145045	0.3863258	0.3999504	0.54717	0.465
EA vs. LP/S	-6.27E-12	0.7917229	0.656104	0.7625356	-0.656104	1.09922	0.551
EA vs. PA	-0.695977	0.4321457	0.5239744	0.3261567	-1.219951	0.5414214	0.024
EA vs. Placebo	0.7805657	0.8235268	-0.3389825	0.5821686	1.119548	1.008522	0.267
F vs. PCA*	0.6971738	0.1910494	0.3713052	0.2896372	0.3258686	0.3467144	0.347
F vs. F/O*	-7.07E-12	0.7854473	-0.3700371	1.407324	0.3700371	1.608557	0.818
F vs. F/S	-0.8343198	0.3896768	-0.147764	0.3317928	-0.6865558	0.5106673	0.179
F vs. FIC*	0.2740019	0.7641349	1.196817	63.25744	-0.9228148	63.26206	0.988
F vs. ITM	-0.9093796	0.7624215	1.238618	0.787932	-2.147998	1.096414	0.05
F vs. LB	-0.128729	0.7648096	0.179909	0.820993	-0.3086379	1.122035	0.783
F vs. LP*	-0.0478304	0.533762	-2.999612	1.038017	2.951782	1.163282	0.011
F vs. O*	0.0986537	0.7963281	1.141091	1.415635	-1.042437	1.625916	0.521
F vs. PA*	0.1959647	0.2971899	-0.0167848	0.2273927	0.2127496	0.3742043	0.57
F/O vs. PA*	0.2371381	0.7857057	-0.1336815	1.406893	0.3708195	1.608558	0.818
F/S vs. PCA	1.51531	0.4549129	0.8263765	0.2993577	0.6889333	0.5438673	0.205
F/S vs. F/S/O*	-0.7001188	0.7800574	2.028978	63.25958	-2.729097	63.26432	0.966
F/S vs. LP	0.2456816	0.7733353	-0.6251706	0.6998348	0.8708521	1.042768	0.404
F/S vs. LP/S	0.9795691	0.804297	0.5737417	0.7249637	0.4058275	1.082805	0.708
F/S vs. PA	-0.1047198	0.7439707	0.5845336	0.2809542	-0.6892534	0.7952532	0.386
F/S vs. Placebo	-0.3140906	0.7525572	0.9304278	0.5982055	-1.244518	0.9613482	0.195
ITM vs. PA	-1.121043	0.767787	1.026346	0.7827067	-2.14739	1.096415	0.05
LB vs. PA	-0.1095234	0.8003494	0.1984008	0.7864109	-0.3079242	1.122053	0.784
LP vs. PCA	3.411689	0.8111444	0.0777324	0.5893627	3.333956	1.018818	0.001
LP/S vs. PCA	0.2666319	0.7944227	0.2930357	0.7535492	-0.0264038	1.095092	0.981
O vs. PCA*	-7.54E-12	0.7946176	1.042437	1.418516	-1.042437	1.625916	0.521
PA vs. PCA	0.2544904	0.2008269	1.003763	0.2598804	-0.7492722	0.3283321	0.022
PA vs. lacebo	0.0813321	0.7497402	-0.135112	0.6102631	0.2164441	0.9667117	0.823

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Opioid consumption – 72 hr. The overall chi-square test for inconsistency gave a p-value of 0.000

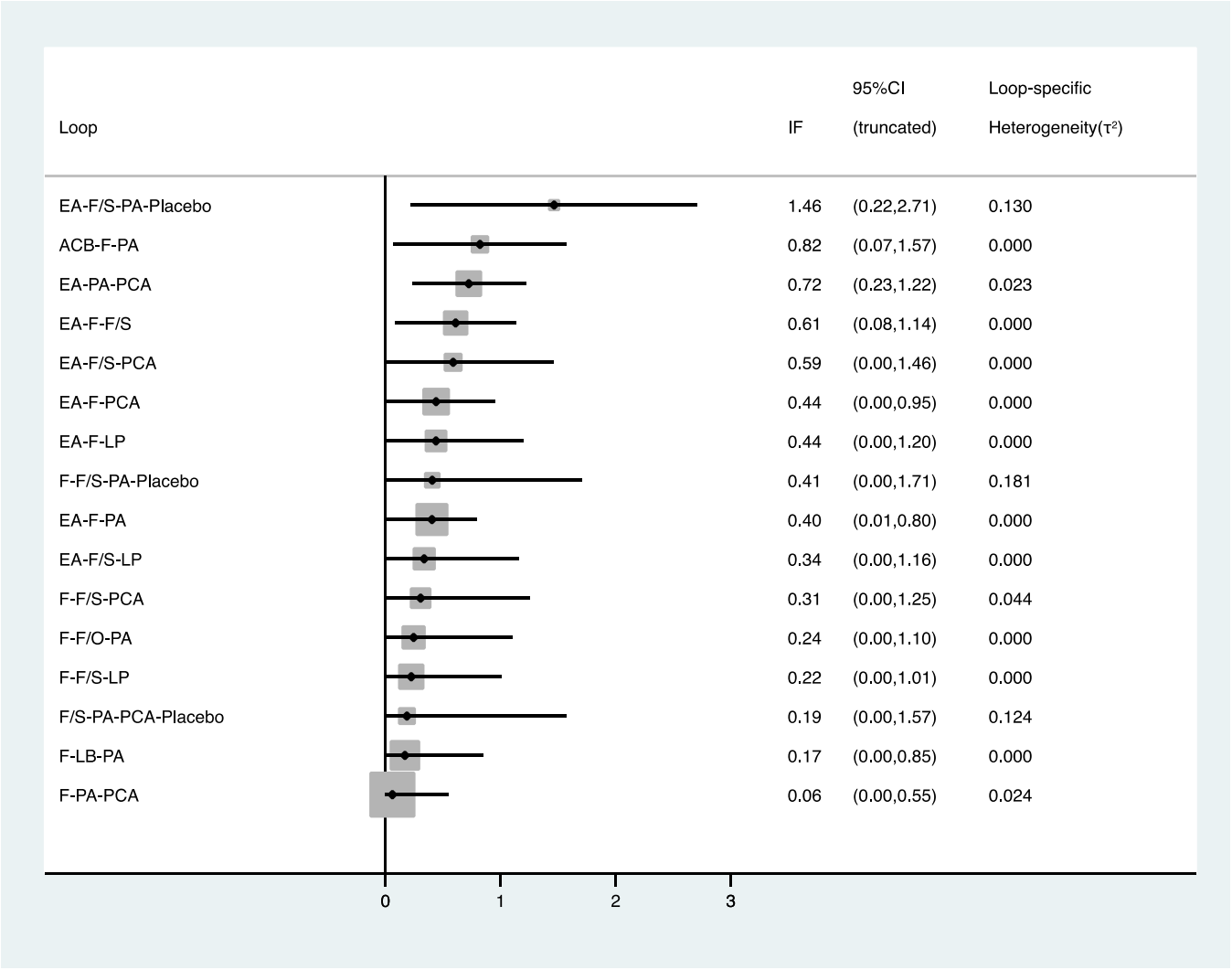


Statistically significant inconsistent loops are EA-PA-PCA, EA-PA-Placebo, and EA-F-PA.

Opioid consumption – 72 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PA*	0.1319769	1.250962	-0.8334669	63.29056	0.9654438	63.3029	0.988
EA vs. PCA	0.3443318	1.208146	-2.082595	0.8786343	2.426927	1.493867	0.104
EA vs. F	-0.6166799	1.274905	-2.045536	0.9071195	1.428856	1.565092	0.361
EA vs. F/S	0.3238554	1.25373	-1.629206	1.01208	1.953062	1.611255	0.225
EA vs. PA	-6.202009	0.6271277	0.2846962	0.3249497	-6.486706	0.7063136	0
EA vs. Placebo	0.5688595	1.273266	-1.659726	1.124441	2.228585	1.698698	0.19
F vs. PCA	0.3391712	0.4937275	0.226941	0.8593073	0.1122302	0.991051	0.91
F vs. F/O*	-0.432747	1.296771	-1.951314	2.469275	1.518567	2.785562	0.586
F vs. F/S	-1.56E-06	1.278503	1.079063	0.9313015	-1.079065	1.581739	0.495
F vs. LB	-0.0924208	1.295652	-0.02844	1.407515	-0.0639808	1.913064	0.973
F vs. PA*	0.2429541	0.6402661	-0.5284117	0.7001979	0.7713658	0.9487859	0.416
F/O vs. PA*	0.9808967	1.298935	-0.5400688	2.466047	1.520966	2.785717	0.585
F/S vs. PCA	0.4290706	1.294937	-0.8179321	0.9302951	1.247003	1.594463	0.434
F/S vs. Placebo	-0.1593145	1.290034	0.4785235	1.223331	-0.637838	1.777842	0.72
LB vs. PA	-0.0760045	1.316932	-0.0133661	1.38779	-0.0626384	1.913185	0.974
PA vs. PCA	-0.2070052	0.7293346	0.9515311	0.6739344	-1.158536	0.9929786	0.243
PA vs. Placebo	0.1558657	1.258396	1.692627	1.158383	-1.536761	1.710383	0.369

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Range of motion and degree of flexion – 24 hr. The overall chi-square test for inconsistency gave a p-value of 0.092.

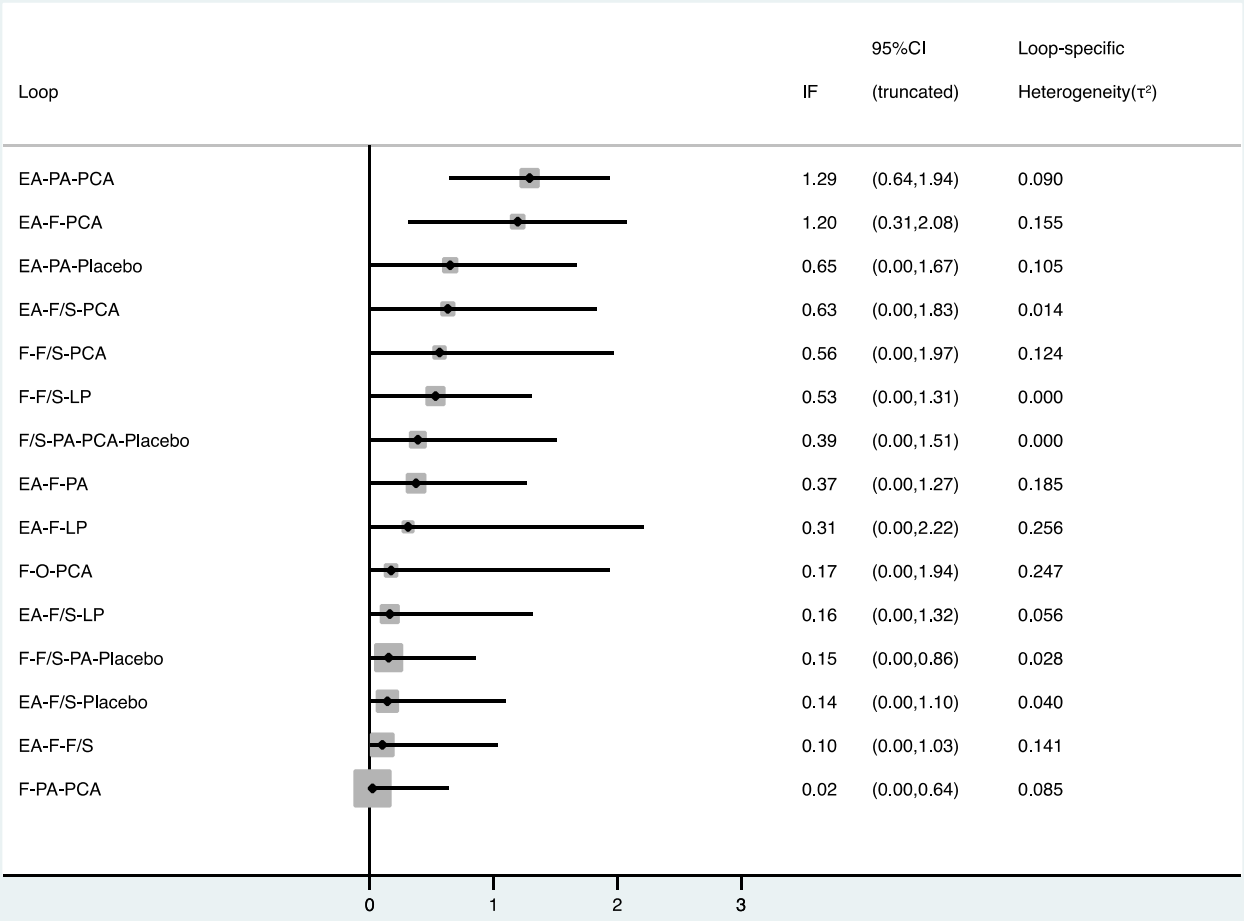


Statistically significant inconsistent loops are EA-F/S-PA-Placebo, ACB-F-PA, EA-PA-PCA, and EA-F-F/S.

Range of motion and degree of flexion – 24 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F	0.1644806	0.4138363	0.8227014	0.383259	-0.6582208	0.5640457	0.243
ACB vs. PA	0.6506474	0.3620639	-0.0074774	0.4324929	0.6581248	0.5640395	0.243
EA vs. PCA	-0.8296398	0.2483948	-0.3601975	0.1620535	-0.4694423	0.2961994	0.113
EA vs. F	0.092968	0.184519	0.0028625	0.1843404	0.0901055	0.2609263	0.73
EA vs. F/S	-0.2498302	0.2755068	0.549093	0.1937002	-0.7989232	0.3367854	0.018
EA vs. LP	7.23E-07	0.3977868	0.310903	0.3703668	-0.3109023	0.5435124	0.567
EA vs. PA	0.2064996	0.1436703	-0.4490361	0.1626103	0.6555357	0.2170043	0.003
F vs. PCA	-0.5596402	0.1908188	-0.5460745	0.1853435	-0.0135657	0.2659507	0.959
F vs. F/O*	-0.0568688	0.4136307	0.7779422	0.7596677	-0.8348111	0.8596263	0.331
F vs. F/S	0.2844749	0.2212859	0.169953	0.2412042	0.1145219	0.3273042	0.726
F vs. LB	-0.2970668	0.3801699	-0.2692498	0.4024696	-0.0278171	0.5536343	0.96
F vs. LP	0.344015	0.3982262	-0.0818404	0.3748643	0.4258554	0.5468745	0.436
F vs. PA*	-0.314073	0.2270466	-0.0661832	0.1468472	-0.2478897	0.2704141	0.359
F/O vs. PA*	-0.4620586	0.4154618	0.3729492	0.7566624	-0.8350078	0.8596247	0.331
F/S vs. PCA	-1.142068	0.4625433	-0.7199757	0.195532	-0.4220928	0.5021743	0.401
F/S vs. LP	-0.0866823	0.4015103	-0.140901	0.4049181	0.0542187	0.569965	0.924
F/S vs. Placebo	-1.073834	0.2724392	-0.2854181	0.3302092	-0.7884164	0.4281346	0.066
LB vs. PA	0.1314693	0.3812828	0.1594012	0.4014136	-0.0279319	0.5536331	0.96
PA vs. PCA	-0.3143636	0.1308804	-0.6311689	0.1961808	0.3168053	0.2357224	0.179
PA vs. Placebo	-0.0599194	0.2744263	-0.8484485	0.3285904	0.7885291	0.4281269	0.066

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Negative values favor the first treatment while positive value favor the second treatment.

Range of motion and degree of flexion – 48 hr. The overall chi-square test for inconsistency gave a p-value of 0.008

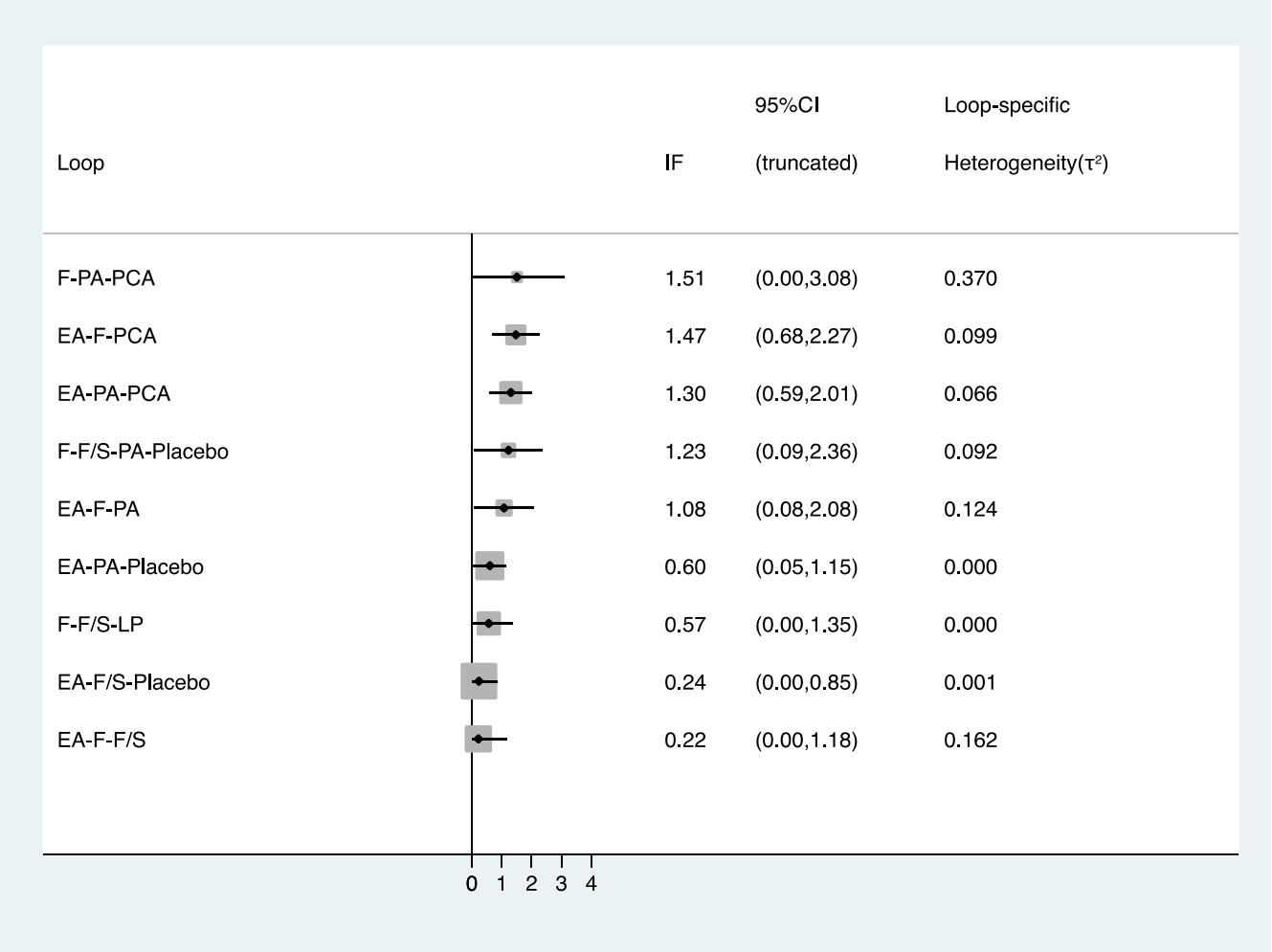


Statistically significant inconsistent loop are EA-PA-PCA and EA-F-PCA.

Range of motion and degree of flexion – 48 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PA*	-0.1530173	0.4308924	0.8217086	63.25507	-0.9747259	63.25657	0.988
EA vs. PCA	-1.108258	0.2248582	0.1022041	0.150157	-1.210463	0.270127	0
EA vs. F	0.24257	0.1990142	0.1761794	0.2023355	0.0663906	0.2841582	0.815
EA vs. F/S	0.2005876	0.3018467	0.1082439	0.2322889	0.0923437	0.3807765	0.808
EA vs. LP	0.2260773	0.4665895	0.1146979	0.4291163	0.1113793	0.6339136	0.861
EA vs. PA	0.4371159	0.1808601	-0.2170346	0.1838576	0.6541505	0.2576293	0.011
EA vs. Placebo	-0.2791372	0.4777616	-0.0081357	0.2455046	-0.2710015	0.5371486	0.614
F vs. PCA*	-0.4219575	0.185997	-0.6212832	0.2259784	0.1993257	0.2923526	0.495
F vs. F/S	-0.1459989	0.2345623	0.0366407	0.2700742	-0.1826396	0.3576506	0.61
F vs. LB*	-0.1980446	0.440524	-1.003895	63.25378	0.8058507	63.25531	0.99
F vs. LP	-0.3379791	0.4629684	0.2117518	0.4324323	-0.5497309	0.6336691	0.386
F vs. O*	0.1130044	0.501687	-0.3665943	0.9187376	0.4795986	1.048627	0.647
F vs. PA	-0.1786446	0.2666266	-0.0574129	0.1757947	-0.1212318	0.3194602	0.704
F/S vs. PCA	-0.8186266	0.6431449	-0.3925017	0.2129412	-0.4261249	0.6771729	0.529
F/S vs. LP	0.2254846	0.4654247	-0.173955	0.4596444	0.3994397	0.6541592	0.541
F/S vs. Placebo	-0.2753396	0.3244157	-0.1436197	0.3138688	-0.1317199	0.4514706	0.77
O vs. PCA*	-0.3955152	0.5003821	-0.8751139	0.92087	0.4795987	1.048627	0.647
PA vs. PCA	-0.252343	0.1645334	-0.6800214	0.2194349	0.4276785	0.274001	0.119
PA vs. Placebo	-0.0646752	0.268605	-0.3443734	0.3193012	0.2796981	0.417263	0.503

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Negative values favor the first treatment while positive value favor the second treatment.

Range of motion and degree of flexion – 72 hr. The overall chi-square test for inconsistency gave a p-value of 0.00

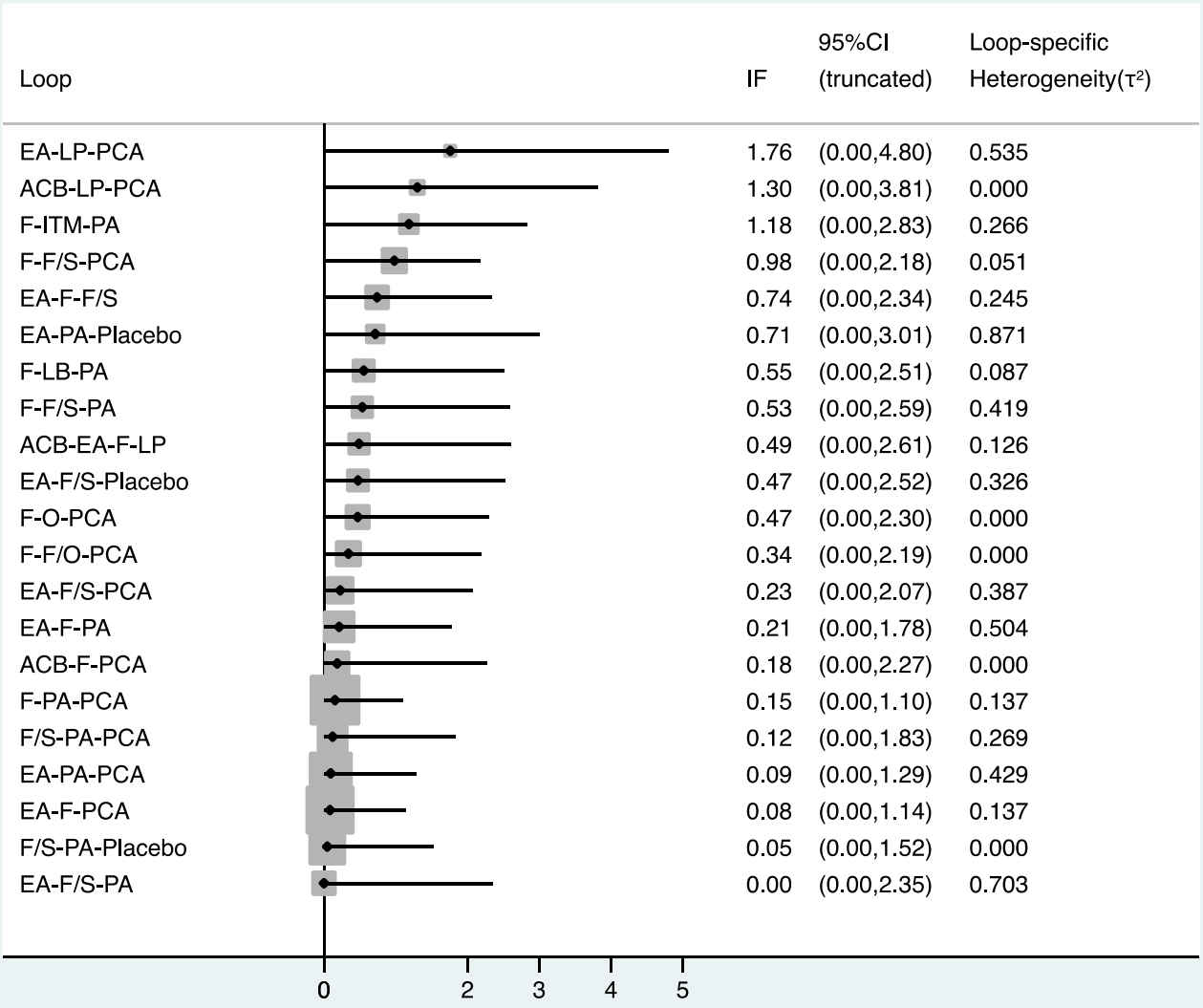


Statistically significant inconsistent loops are: EA-F-PCA, EA-PA-PCA, F-F/S-PA-Placebo, and EA-F-PA.

Range of motion and degree of flexion – 72 hr, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F*	-0.3333433	0.5341046	1.315371	63.25201	-1.648714	63.25425	0.979
EA vs. PCA	-1.348411	0.3130676	-0.1455156	0.245568	-1.202895	0.397693	0.002
EA vs. F	0.3311445	0.2458648	-0.3639623	0.291335	0.6951067	0.381488	0.068
EA vs. F/S	0.0616776	0.4111625	-0.0185808	0.313525	0.0802585	0.517062	0.877
EA vs. PA	0.3557507	0.3126832	-0.084731	0.281675	0.4404817	0.420891	0.295
EA vs. Placebo	-0.44378	0.3942789	-0.1265486	0.343011	-0.3172314	0.522615	0.544
F vs. PCA	-0.8004314	0.2587349	-0.3967944	0.356510	-0.4036371	0.439535	0.358
F vs. F/S*	-0.0525342	0.3224021	-0.0060463	0.376479	-0.0464879	0.495681	0.925
F vs. LB*	-0.0495111	0.5420836	-1.322157	63.25193	1.272646	63.25425	0.984
F vs. LP*	3.07E-09	0.5637277	-0.9420123	1.114131	0.9420123	1.247709	0.45
F vs. PA	1.103037	0.4808016	-0.1545393	0.230138	1.257577	0.533042	0.018
F/S vs. LP*	-0.3513431	0.5643847	0.5902556	1.113164	-0.9415987	1.247737	0.45
F/S vs. Placebo	-0.2568904	0.3992619	-0.2918441	0.403844	0.0349537	0.567929	0.951
ITM vs. PA*	0.1767092	0.5693702	1.460844	63.25261	-1.284135	63.25517	0.984
PA vs. PCA	-0.4085029	0.2339589	-1.303983	0.314287	0.8954803	0.391783	0.022
PA vs. Placebo	-0.2031902	0.4029434	-0.5200287	0.370774	0.3168386	0.547578	0.563

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Negative values favor the first treatment while positive value favor the second treatment.

Incidence of nausea. The overall chi-square test for inconsistency gave a p-value of 0.78

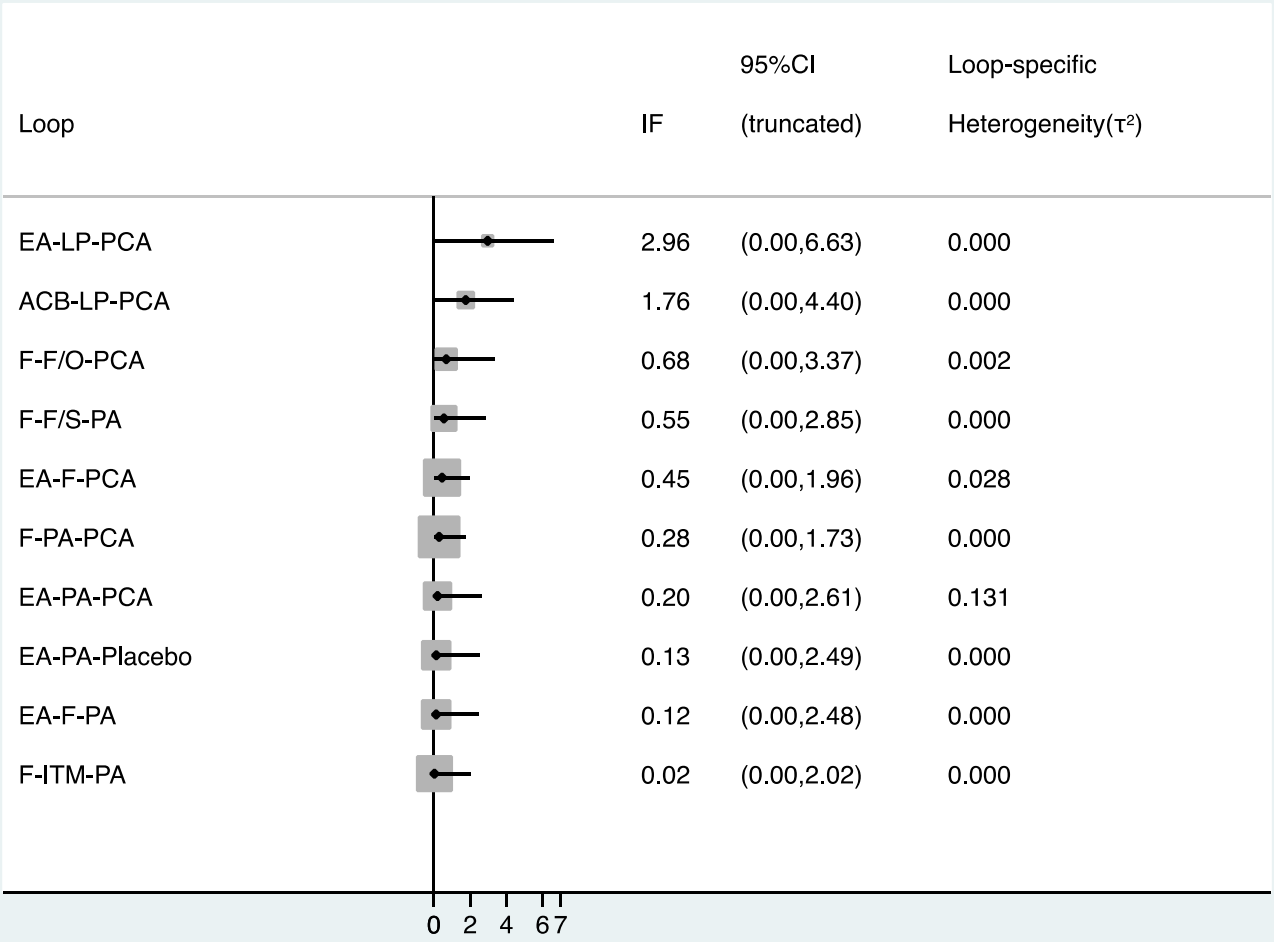


No statistically significant inconsistent loop.

Incidence of nausea, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.6931472	1.052239	0.8764852	0.5083377	-0.183338	1.168595	0.875
ACB vs. F	0.0645389	0.6247811	0.194086	0.6665603	-0.1295471	0.9135939	0.887
ACB vs. LP	0.6076771	0.6373092	0.3243995	0.7574876	0.2832775	0.9899245	0.775
EA vs. PCA	-0.3475195	0.3165566	-0.0310423	0.2633837	-0.3164772	0.4096381	0.44
EA vs. F	-1.061652	0.3857529	-0.7857488	0.2695573	-0.2759035	0.4706926	0.558
EA vs. F/S	-1.012338	0.4881651	-1.027084	0.3428157	0.0147463	0.5946565	0.98
EA vs. FIC*	-0.8109302	1.024982	-0.4360011	177.1063	-0.3749291	177.1079	0.998
EA vs. LP	-0.0237372	0.6451976	-0.9678038	0.6227758	0.9440665	0.8978143	0.293
EA vs. PA	-0.8606707	0.3140512	-0.8877863	0.2703333	0.0271156	0.4144838	0.948
EA vs. Placebo	-0.4857773	0.4721532	-1.025841	0.4745298	0.540064	0.6702228	0.42
F vs. PCA*	0.8101371	0.1910932	0.4990138	0.2908007	0.3111232	0.3476041	0.371
F vs. F/O*	-1.339148	0.795221	-0.8795541	1.306543	-0.4595935	1.440739	0.75
F vs. F/S	-0.6857874	0.4721208	0.1141248	0.3254895	-0.7999122	0.5738268	0.163
F vs. ITM	-0.1641101	0.403795	1.155188	0.5193302	-1.319298	0.6579017	0.045
F vs. LB	0.538999	0.6835886	-0.0819795	0.7893912	0.6209786	1.044238	0.552
F vs. O*	0.7731899	0.7967708	1.499716	1.399377	-0.7265257	1.637156	0.657
F vs. PA	0.0041231	0.4221491	-0.0021237	0.2128128	0.0062468	0.4722136	0.989
F/O vs. PCA*	1.837901	0.7895154	2.297494	1.316883	-0.4595935	1.440739	0.75
F/S vs. PCA	0.5448988	0.4469654	1.035963	0.3308681	-0.4910643	0.5547069	0.376
F/S vs. LP/S*	-0.2513144	0.829033	1.717814	141.6229	-1.969128	141.6251	0.989
F/S vs. PA	0.0378069	0.5837985	0.1760267	0.3105053	-0.1382197	0.6612369	0.834
F/S vs. Placebo	0.0594187	0.632025	0.3779076	0.4574204	-0.318489	0.7801849	0.683
ITM vs. PA	-1.041959	0.4840993	0.2772134	0.4454132	-1.319173	0.6579086	0.045
LB vs. PA	0.0606246	0.7655006	-0.5604571	0.7102462	0.6210816	1.044242	0.552
LP vs. PCA	1.386294	0.8292657	-0.0563938	0.5215976	1.442688	0.9796661	0.141
O vs. PCA*	-0.4054651	0.7743302	0.3210606	1.436672	-0.7265257	1.637156	0.657
PA vs. PCA	0.6288444	0.1956505	0.8826101	0.2694704	-0.2537657	0.3324658	0.445
PA vs. Placebo	-0.1034821	0.575261	0.2474491	0.4280168	-0.3509312	0.7187812	0.625

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Incidence of vomiting. The overall chi-square test for inconsistency gave a p-value of 0.86

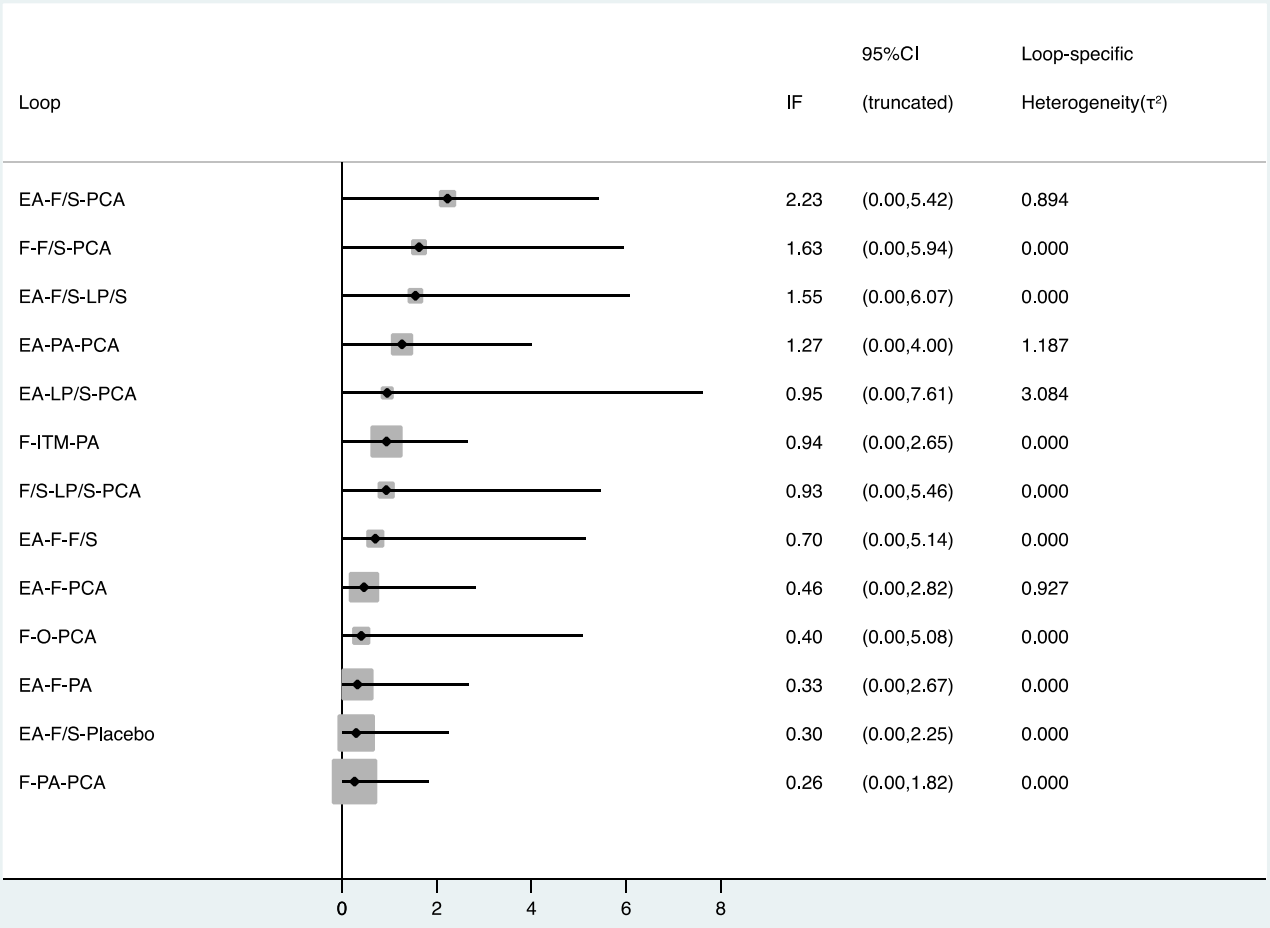


No statistically significant inconsistent loops.

Incidence of vomiting, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	-0.2231436	0.7472171	0.8477664	1.035006	-1.07091	1.276546	0.402
ACB vs. LP	0.4344528	0.6675763	-0.6364882	1.088096	1.070941	1.276562	0.402
EA vs. PCA	-0.1562231	0.3862708	0.3629983	0.5233694	-0.5192214	0.6442798	0.42
EA vs. F	-0.6398547	0.5605111	-0.8654923	0.4352848	0.2256377	0.7097481	0.751
EA vs. LP	1.723824	1.585753	-0.3513512	0.7441885	2.075175	1.751688	0.236
EA vs. PA	-0.6931541	0.939857	-0.9001252	0.3962995	0.2069711	1.019992	0.839
EA vs. Placebo	-0.5680925	0.4239398	-0.959295	0.7551563	0.3912025	0.8660153	0.651
F vs. PCA*	0.9054095	0.275122	0.4611106	0.5101542	0.4442989	0.577987	0.442
F vs. F/O*	-0.1381503	1.034067	-1.657462	1.444945	1.519311	1.779527	0.393
F vs. F/S	-0.4855155	0.9967893	0.2197364	0.4957511	-0.705252	1.113264	0.526
F vs. ITM	0.6526574	0.6601412	0.7921057	0.6790425	-0.1394483	0.947041	0.883
F vs. LB*	-0.7472144	0.8967126	1.494736	240.1165	-2.24195	240.1172	0.993
F vs. PA	-0.1868546	0.4911909	-0.0288454	0.3814063	-0.1580092	0.6218835	0.799
F/O vs. PCA*	1.642228	0.8501378	0.1229163	1.768487	1.519311	1.779527	0.393
F/S vs. LP/S*	0.8109302	0.931695	1.337916	177.1416	-0.5269858	177.1454	0.998
F/S vs. PA	-0.2518938	0.3836442	0.453057	1.044982	-0.7049508	1.11318	0.527
ITM vs. PA	-0.8644211	0.5988898	-0.7250697	0.7336324	-0.1393514	0.9470413	0.883
LP vs. PCA	1.098612	0.9067647	-0.965299	0.8517918	2.063911	1.244095	0.097
PA vs. PCA	0.8006114	0.476907	0.9611731	0.4030602	-0.1605618	0.624418	0.797
PA vs. Placebo	-5.26E-12	0.6299408	0.3913136	0.59429	-0.3913136	0.8660289	0.651

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Incidence of pruritus. The overall chi-square test for inconsistency gave a p-value of 0.53

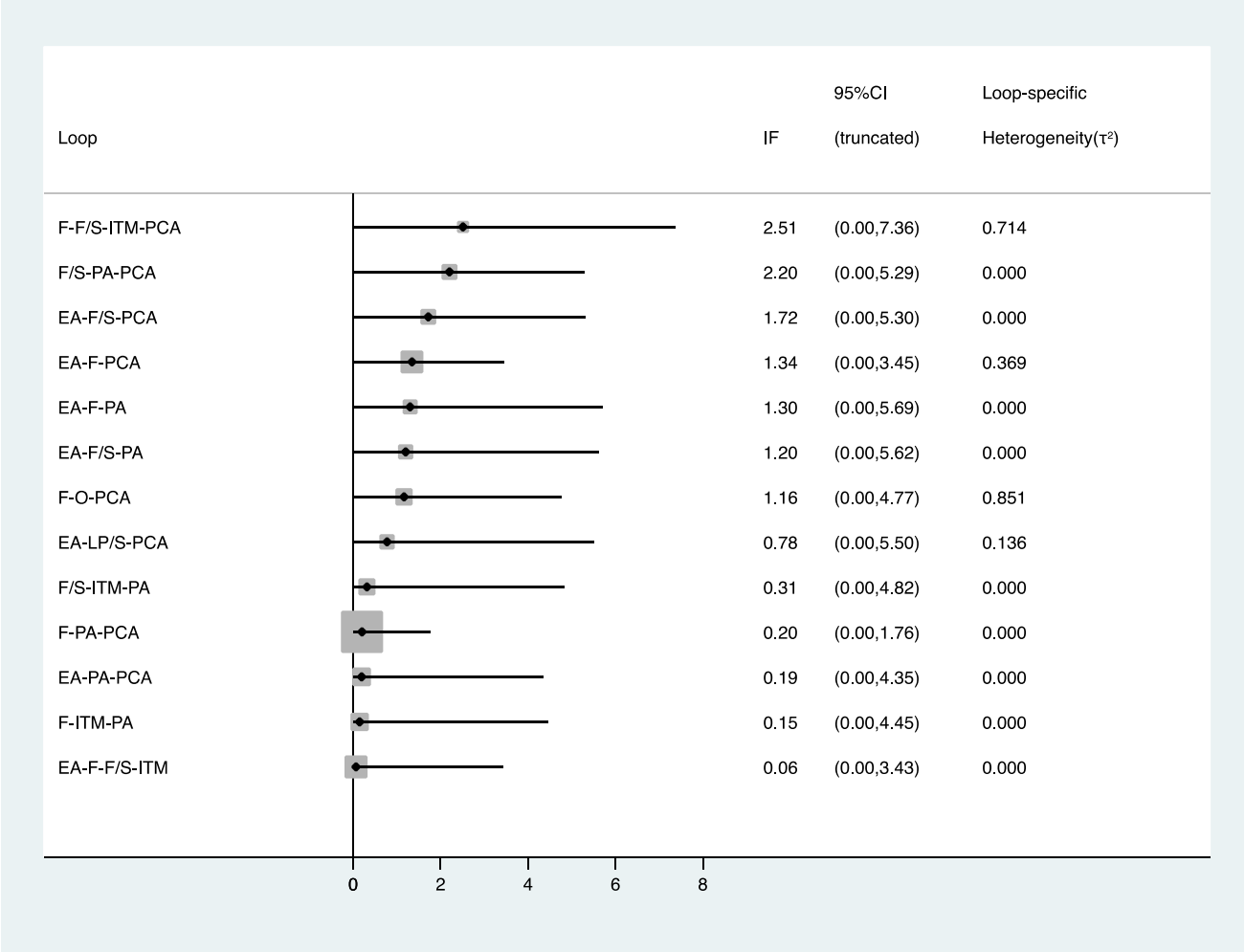


No statistically significant inconsistent loops.

Incidence of pruritus, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F*	-0.3007541	0.6382014	-0.5683913	72.00921	0.2676372	72.01205	0.997
ACB vs. LP*	0.3103735	0.6639063	0.4117093	174.5371	-0.1013358	174.5385	1
EA vs. PCA	0.1060982	0.4592298	-0.3984662	0.6437125	0.5045645	0.7869844	0.521
EA vs. F	-0.767923	0.6902078	-0.4557962	0.5556416	-0.3121268	0.8867636	0.725
EA vs. F/S	0.1056915	0.8499	-1.043021	0.749233	1.148712	1.113892	0.302
EA vs. LP/S	-3.378403	1.408454	-2.038614	1.373608	-1.339789	1.550906	0.388
EA vs. PA	-1.323586	0.8935378	-0.2040484	0.5238123	-1.119538	1.035759	0.28
EA vs. Placebo	0.5453094	0.5398764	-0.7127965	0.9414772	1.258106	1.087555	0.247
F vs. PCA*	0.3780215	0.4458265	0.7270593	0.558428	-0.3490378	0.7121334	0.624
F vs. F/S	-1.57E-11	2.099053	0.0233761	0.6730268	-0.0233761	2.204311	0.992
F vs. ITM	1.866984	0.5245982	1.017863	0.7642936	0.8491206	0.9251792	0.359
F vs. O*	1.098612	1.735358	2.259706	3.490437	-1.161094	4.226262	0.784
F vs. PA	-0.2431781	0.7520428	0.2162203	0.4712606	-0.4593984	0.8873718	0.605
F/S vs. PCA	2.074159	0.6980782	-0.9432318	0.6425759	3.01739	0.916774	0.001
F/S vs. LP/S	-1.712167	1.657606	-2.523869	1.625823	0.8117023	2.321821	0.727
F/S vs. Placebo	0.3043682	0.6562206	1.562581	0.8673087	-1.258212	1.087589	0.247
ITM vs. PA	-1.133911	0.6171749	-1.982881	0.6894147	0.8489708	0.9251777	0.359
LB vs. PA*	-0.9444616	0.994068	-0.659309	221.2806	-0.2851526	221.2842	0.999
LP/S vs. PCA	2.19731	1.448461	2.999251	1.400938	-0.8019403	1.623688	0.621
O vs. PCA*	-1.148623	1.734637	0.0124709	3.491512	-1.161094	4.226261	0.784
PA vs. PCA	0.2649019	0.4809304	0.6766642	0.5966115	-0.4117623	0.7688093	0.592

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Incidence of urinary retention. The overall chi-square test for inconsistency gave a p-value of 0.63

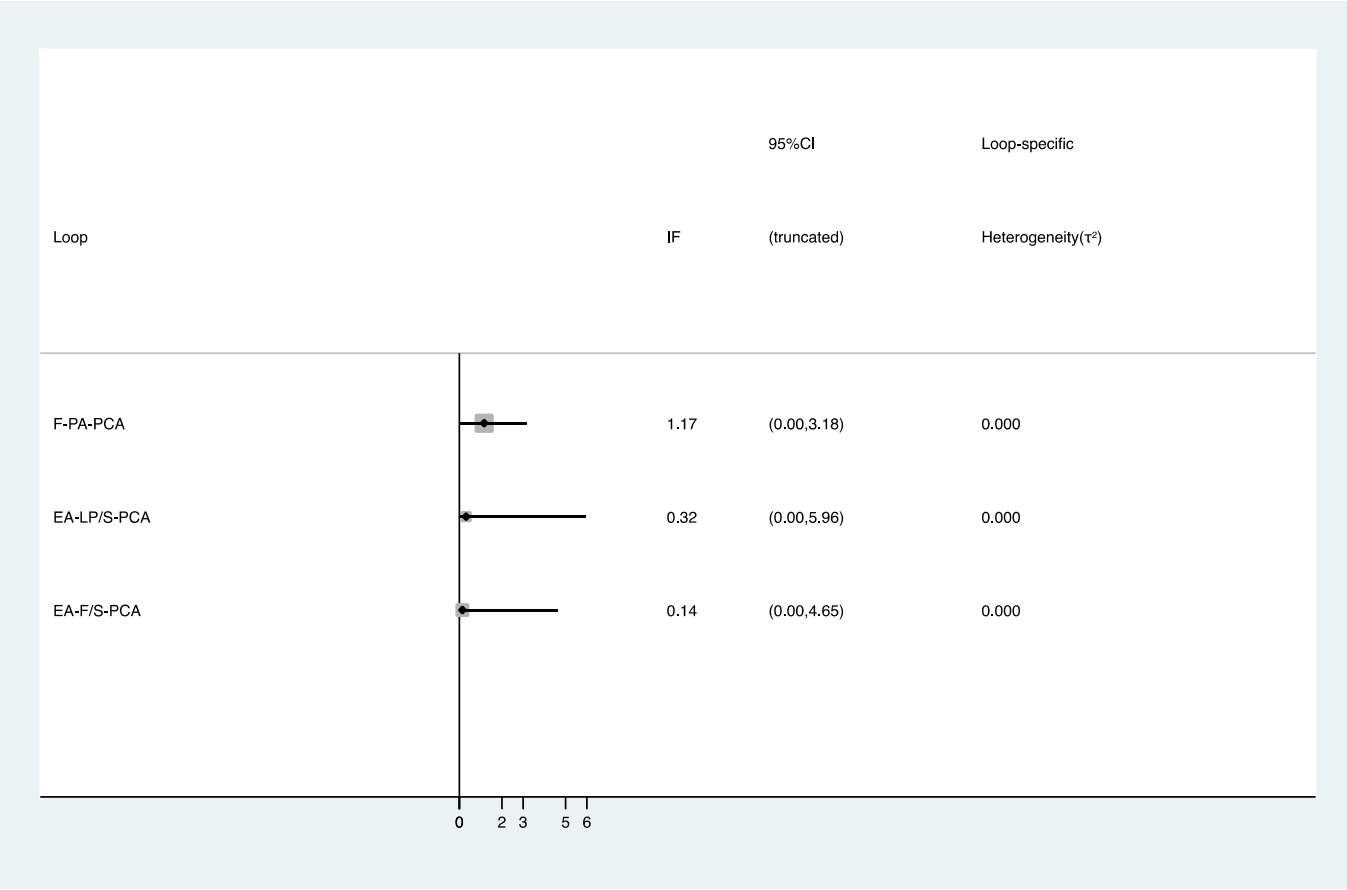


No statistically significant inconsistent loops.

Incidence of urinary retention, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
EA vs. PCA*	0.088126	0.4418928	-1.038561	0.7279835	1.126687	0.850891	0.185
EA vs. F	-1.824365	0.7144198	-0.1950287	0.5626932	-1.629337	0.9250737	0.078
EA vs. F/S	-0.8105212	0.91417	-1.13609	0.6560755	0.3255683	1.078982	0.763
EA vs. LP*	-1.453435	0.7262349	-0.8229078	143.4533	-0.6305267	143.4535	0.996
EA vs. LP/S*	-1.707076	1.586799	-0.9198667	2.466891	-0.7872097	2.32659	0.735
EA vs. PA	-9.12E-09	2.033523	-0.6067226	0.4665893	0.6067226	2.086365	0.771
EA vs. Placebo*	0.429277	0.6919675	-0.1066558	112.7308	0.5359329	112.7325	0.996
F vs. PCA*	0.3329958	0.3718422	1.228497	0.5511468	-0.8955008	0.6596033	0.175
F vs. ITM	0.2231456	0.685264	-0.1011038	1.063917	0.3242494	1.265507	0.798
F vs. O*	1.054937	0.7846104	3.578254	1.807607	-2.523317	2.057952	0.22
F vs. PA	0.3296232	0.5929673	0.1975347	0.4805999	0.1320885	0.7659751	0.863
F/S vs. PCA	3.353683	1.212436	0.5409379	0.428353	2.812745	1.252677	0.025
F/S vs. ITM	0.0571583	1.078968	0.5006949	0.8346525	-0.4435365	1.364118	0.745
F/S vs. PA	0.3375085	0.3621657	1.009578	0.8159435	-0.6720698	0.8927079	0.452
ITM vs. PA	-0.0344862	2.019648	0.1287357	0.636131	-0.1632219	2.117461	0.939
LP/S vs. PCA*	1.14624	1.66796	1.93345	2.30066	-0.78721	2.326585	0.735
O vs. PCA*	-1.578185	0.8805315	0.9451311	1.669814	-2.523316	2.057952	0.22
PA vs. PCA	0.2771923	0.4153753	0.5087147	0.5454447	-0.2315224	0.6851182	0.735

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Incidence of deep vein thrombosis. The overall chi-square test for inconsistency gave a p-value of 0.72.

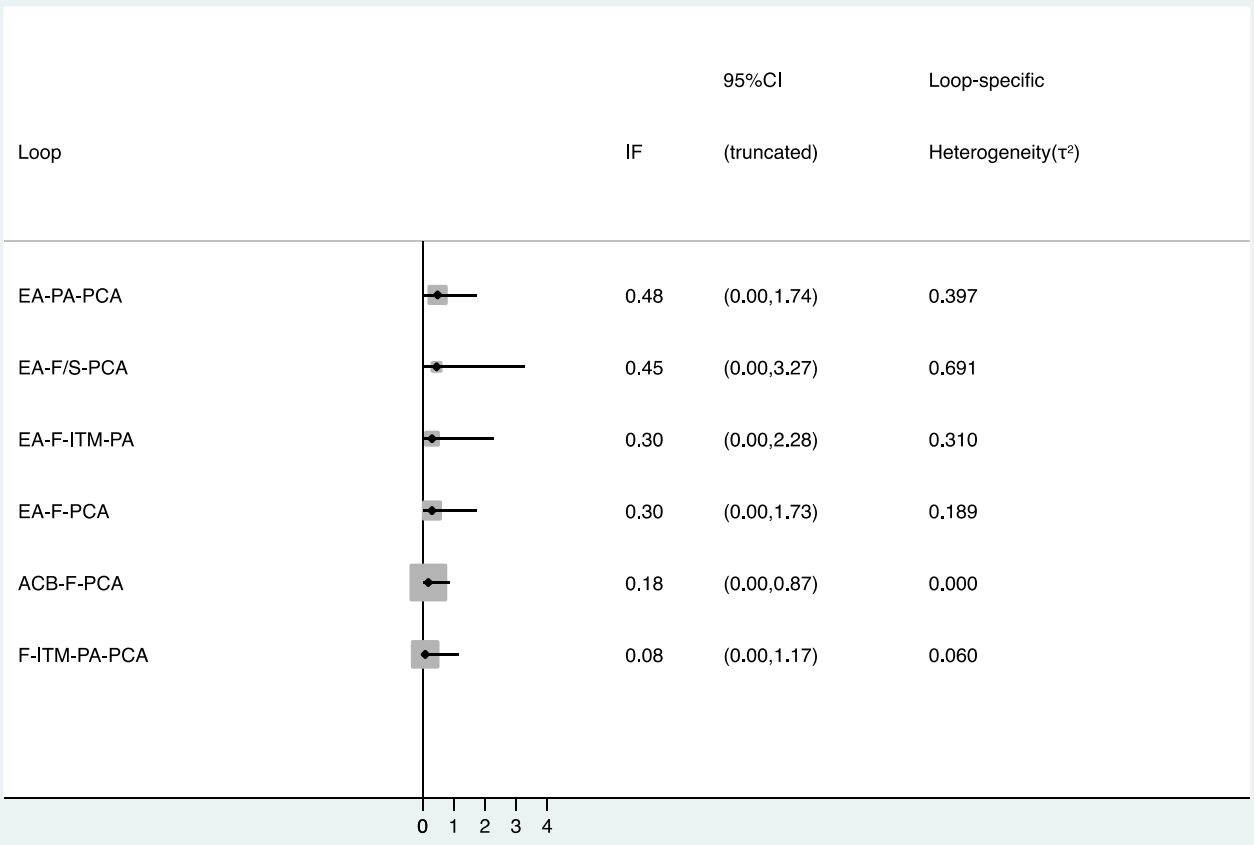


No statistically significant inconsistent loops.

Incidence of deep vein thrombosis, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PA*	0.082521	2.0103	-0.3550928	629.2057	0.4376138	629.2089	0.999
EA vs. PCA*	0.3125372	0.2862823	0.7419815	178.8849	-0.4294443	178.8851	0.998
EA vs. F/S*	-1.098612	1.653621	-1.3847	2.194278	0.2860872	2.209673	0.897
EA vs. LP*	1.198696	1.65333	0.3398967	357.9519	0.858799	357.9594	0.998
EA vs. LP/S*	-1.03E-12	2.023122	0.6378487	3.551563	-0.6378487	4.087374	0.876
F vs. PCA	0.5349014	0.7274506	-0.6346232	0.7257708	1.169525	1.027583	0.255
F vs. PA	-0.7035206	0.6552993	0.4660159	0.7915335	-1.169536	1.027593	0.255
F/S vs. PCA*	1.543841	1.570237	1.257753	2.370931	0.2860872	2.209673	0.897
ITM vs. PA*	5.14E-12	2.019513	-0.3533907	460.4444	0.3533907	460.4488	0.999
LP/S vs. PCA	-1.83E-12	2.023122	0.6378487	3.551563	-0.6378487	4.087373	0.876
PA vs. PCA	0.0688774	0.3120075	1.238251	0.9790194	-1.169373	1.027535	0.255
PA vs. Placebo*	-0.6688502	1.272822	0.3226509	372.0425	-0.991501	372.0437	0.998

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Estimated blood loss. The overall chi-square test for inconsistency gave a p-value of 0.94

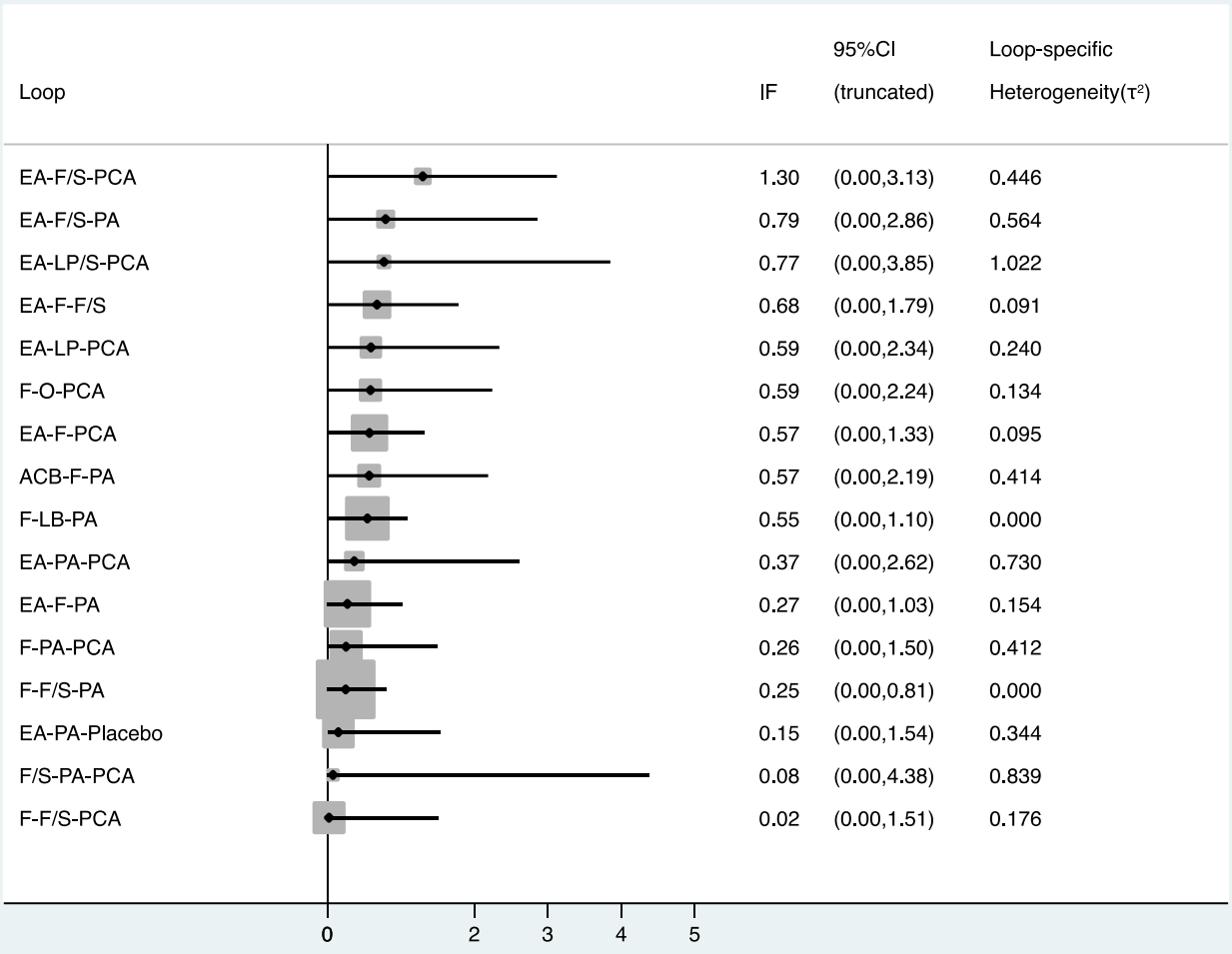


No statistically significant inconsistent loops.

Estimated blood loss, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. PCA	0.0401001	0.3161038	-0.0640787	0.58337	0.1041788	0.6634959	0.875
ACB vs. F	-0.2064229	0.5387896	-0.1022561	0.3872606	-0.1041668	0.6635246	0.875
EA vs. PCA	0.709248	0.323955	0.2618191	0.2823378	0.4474289	0.4293504	0.297
EA vs. F	0.3059553	0.4958643	0.298442	0.3204351	0.0075132	0.5903898	0.99
EA vs. F/S*	-0.1815293	0.2992853	-1.528499	0.8524654	1.34697	0.8977675	0.134
EA vs. PA	-0.1757482	0.2395254	0.2800382	0.3574382	-0.4557865	0.430816	0.29
F vs. PCA	0.1147157	0.2580575	0.2328201	0.3641744	-0.1181043	0.4463698	0.791
F vs. ITM	0.1081509	0.3922176	-0.0871463	0.6014805	0.1952972	0.7180627	0.786
F/S vs. PCA	1.041871	0.4146569	0.3564336	0.5186457	0.6854377	0.6666675	0.304
F/S vs. LP/S*	0.1579156	0.5402522	1.551419	63.24934	-1.393503	63.25165	0.982
ITM vs. PA	-0.2788404	0.5250596	-0.474294	0.4898589	0.1954535	0.7180872	0.785
PA vs. PCA	0.349773	0.2656194	0.7027329	0.329575	-0.3529599	0.4233473	0.404

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Length of hospital stay. The overall chi-square test for inconsistency gave a p-value of 0.98



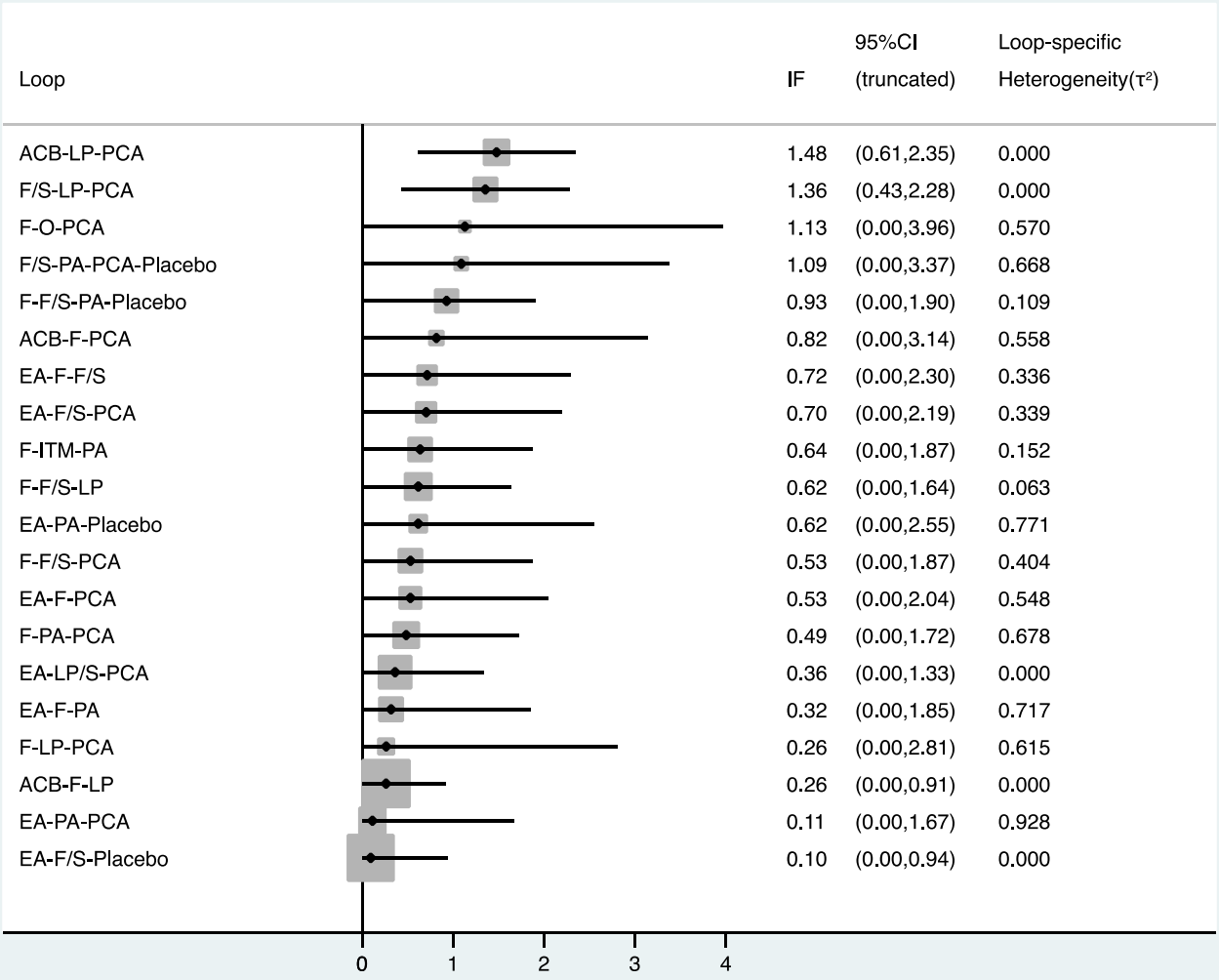
No statistically significant inconsistent loops.

Length of hospital stay, node-splitting approach for assessment of inconsistency							
	Direct		Indirect		Difference		
Comparison	Coefficient	SE	Coefficient	SE	Coefficient	SE	p value
ACB vs. F	0.6466502	0.4828304	0.2385961	0.8598234	0.4080541	0.9860736	0.679
ACB vs. PA	-6.66E-07	0.832368	0.4070327	0.5290899	-0.4070334	0.9862925	0.68
EA vs. PCA	0.6650946	0.4375904	0.0409441	0.3140443	0.6241506	0.5389688	0.247
EA vs. F	-0.001331	0.4286922	-0.0930043	0.3410327	0.0916733	0.5477357	0.867
EA vs. F/S	-0.7513885	0.6280676	0.2613329	0.5235785	-1.012721	0.8164724	0.215
EA vs. LP	-1.94E-07	0.8491109	0.1781461	0.9088472	-0.1781463	1.243781	0.886
EA vs. LP/S	-0.9071609	0.8662528	-0.0091181	0.9098322	-0.8980428	1.251621	0.473
EA vs. PA	-0.3369344	0.4248725	-0.3050182	0.3199119	-0.0319162	0.5318858	0.952
EA vs. Placebo	-0.0913773	0.5958636	-0.219619	0.6524874	0.1282417	0.8835986	0.885
F vs. PCA*	0.253808	0.2724868	0.3953328	0.3228413	-0.1415248	0.422107	0.737
F vs. F/S	0.0554405	0.8359556	-0.1456975	0.4633272	0.201138	0.9557682	0.833
F vs. LB	-0.4737497	0.8390425	-0.1360737	0.6255839	-0.337676	1.046589	0.747
F vs. O*	1.644228	0.8776458	3.003368	1.568768	-1.35914	1.779549	0.445
F vs. PA	-0.067647	0.3230523	-0.3993951	0.2777636	0.3317481	0.4260538	0.436
F/S vs. PCA	0.3214547	0.6422589	0.4662873	0.5047088	-0.1448326	0.8146432	0.859
F/S vs. PA	-0.3793671	0.8240394	-0.0929553	0.4584158	-0.2864119	0.9429665	0.761
ITM vs. PA*	-0.2860966	0.8436401	-1.138077	63.25996	0.85198	63.26558	0.989
LB vs. PA	-0.1082627	0.5870797	0.2284359	0.8662437	-0.3366986	1.046447	0.748
LP vs. PCA	0.0855412	0.868532	0.2635141	0.8902644	-0.1779729	1.243752	0.886
LP/S vs. PCA*	0.7775993	0.663243	0.4802097	1.595281	0.2973896	1.728263	0.863
P vs. PCA*	-1.973074	0.8823793	-0.6139336	1.560782	-1.35914	1.779549	0.445
PA vs. PCA	0.6242624	0.2537391	0.489313	0.3171146	0.1349494	0.4058158	0.739
PA vs. Placebo	0.1084668	0.5948837	0.2373507	0.6533291	-0.1288839	0.8835733	0.884

* Note: all the evidence about these contrasts comes from the trials that directly compare them.
Positive values favor the first treatment while negative value favor the second treatment.

Sensitivity analyses:

For pain at rest – 24 hr

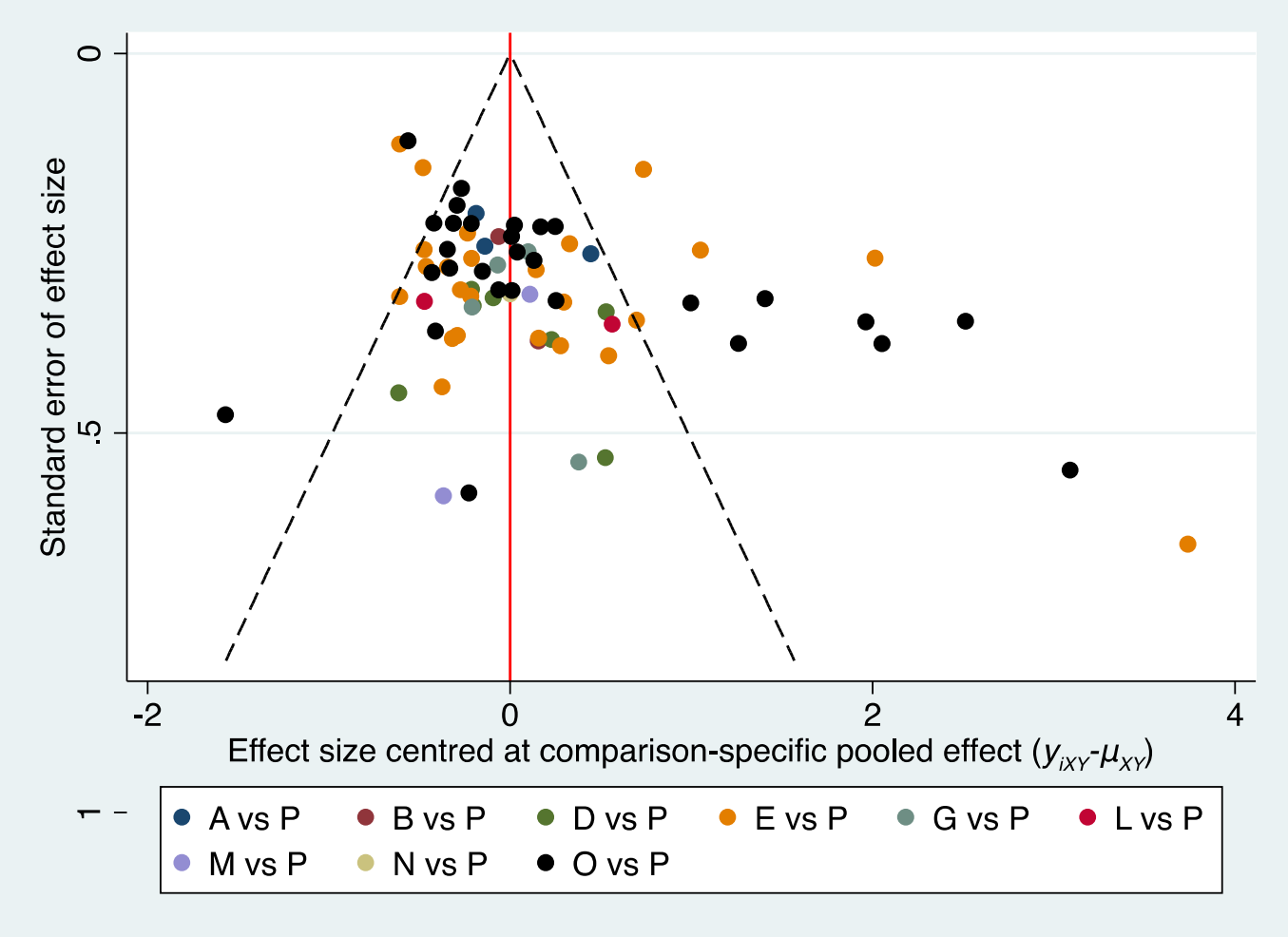


Statistically significant inconsistent loops are ACB-LP-PCA and F/S-LP-PCA. The heterogeneity standard deviation is 0.81, reasonable. The overall chi-square test for inconsistency gave a p-value of 0.85.

PCA													
0.16 (-0.55,0.87)	Placebo												
0.99 (0.61,1.37)	0.83 (0.17,1.49)	PA											
0.63 (-0.86,2.13)	0.47 (-1.16,2.11)	-0.36 (-1.88,1.17)	O										
0.90 (-0.60,2.40)	0.74 (-0.88,2.36)	-0.09 (-1.61,1.43)	0.27 (-1.84,2.38)	LP/S									
1.10 (0.16,2.04)	0.94 (-0.20,2.08)	0.11 (-0.88,1.09)	0.46 (-1.28,2.21)	0.20 (-1.56,1.96)	LP								
1.04 (-0.62,2.71)	0.88 (-0.87,2.63)	0.05 (-1.57,1.67)	0.41 (-1.81,2.63)	0.14 (-2.08,2.36)	-0.06 (-1.95,1.84)	LB							
0.33 (-0.70,1.35)	0.17 (-1.02,1.35)	-0.67 (-1.68,0.35)	-0.31 (-2.09,1.47)	-0.57 (-2.37,1.22)	-0.77 (-2.12,0.58)	-0.72 (-2.63,1.20)	ITM						
1.26 (0.03,2.48)	1.10 (-0.28,2.47)	0.26 (-0.98,1.51)	0.62 (-1.27,2.52)	0.36 (-1.57,2.28)	0.16 (-1.34,1.65)	0.21 (-1.83,2.26)	0.93 (-0.60,2.46)	FIC					
1.18 (0.59,1.77)	1.02 (0.23,1.80)	0.19 (-0.44,0.81)	0.54 (-1.04,2.13)	0.28 (-1.31,1.86)	0.08 (-0.94,1.10)	0.14 (-1.60,1.87)	0.85 (-0.28,1.98)	-0.08 (-1.39,1.23)	F/S				
0.92 (0.55,1.28)	0.76 (0.03,1.49)	-0.07 (-0.50,0.36)	0.28 (-1.21,1.78)	0.02 (-1.51,1.54)	-0.18 (-1.11,0.75)	-0.12 (-1.80,1.55)	0.59 (-0.40,1.58)	-0.34 (-1.51,0.83)	-0.26 (-0.85,0.33)	F			
0.59 (0.09,1.10)	0.43 (-0.29,1.15)	-0.40 (-0.87,0.08)	-0.04 (-1.60,1.52)	-0.31 (-1.81,1.19)	-0.50 (-1.53,0.52)	-0.45 (-2.14,1.24)	0.27 (-0.81,1.35)	-0.66 (-1.94,0.62)	-0.58 (-1.25,0.08)	-0.32 (-0.85,0.20)	EA		
0.98 (0.10,1.87)	0.82 (-0.29,1.93)	-0.01 (-0.95,0.93)	0.35 (-1.37,2.07)	0.08 (-1.65,1.82)	-0.11 (-1.19,0.96)	-0.06 (-1.93,1.81)	0.66 (-0.66,1.98)	-0.27 (-1.74,1.20)	-0.19 (-1.21,0.83)	0.07 (-0.83,0.96)	0.39 (-0.60,1.38)	ACB	
0.29 (-0.89,1.47)	0.13 (-1.25,1.51)	-0.70 (-1.94,0.54)	-0.34 (-2.25,1.56)	-0.61 (-2.52,1.30)	-0.81 (-2.32,0.70)	-0.75 (-2.79,1.29)	-0.04 (-1.60,1.53)	-0.97 (-2.67,0.74)	-0.89 (-2.21,0.43)	-0.63 (-1.86,0.61)	-0.30 (-1.59,0.98)	-0.69 (-2.17,0.78)	AA

Sensitivity analysis, pain at rest – 24 hr

GRADE analyses



Comparison-adjusted funnel plot. Assuming that in all PCA studies, the other drug is favored in smaller studies will give a large effect favoring the other drug that is compared to PCA. Egger's test gave p-value of 0 suggesting that there are small study effects in PCA studies. Since we do not know the direction of small study effects in each comparison (which drug will it favor). A = AA, B = ACB, D = EA, E = F, G = F/S, L = LP, M = LP/S, N = O, and P = PCA.

EA vs. LP/S	EA vs. LP	EA vs. FIC	EA vs. F/S	EA vs. F	ACB/S vs. F/S	ACB vs PCA	ACB vs. PA	ACB vs. LP	ACB vs F	AA vs. PCA	
0	0	0	0	0	0	0	0	0	0	100	AA vs. PCA
0.2	5.7	2.1	1.4	3.5	0	16.1	16.3	13.6	22.6	0	ACB vs F
1.2	11.8	1.2	0.8	2	0	11.4	10.6	33.4	13.3	0	ACB vs. LP
0	0.7	0	0	0	0	1.9	2.6	1.4	2.1	0	ACB vs. PA
1	5.4	0.9	0.6	1.5	0	16.3	11.9	9.6	13.2	0	ACB vs PCA
0	0	0	0	0	100	0	0	0	0	0	ACB/S vs. F/S
6.5	7.8	7.5	9.7	12.6	0	1.6	0.1	1.7	3	0	EA vs. F
1.2	1.1	0.9	2.1	1.5	0	0.1	0	0.1	0.2	0	EA vs. F/S
1.6	1.9	18.1	2.4	3.1	0	0.4	0	0.4	0.7	0	EA vs. FIC
3.7	13.9	3.4	5.5	5.8	0	4.1	3.5	7.6	3.6	0	EA vs. LP
17.2	2	1.5	3	2.6	0	0.4	0	0.4	0.1	0	EA vs. LP/S
2.1	2.3	2	2.9	3.3	0	0	2.3	0.6	0.4	0	EA vs. PA
14	12.2	9.3	15.2	15.5	0	6	0.2	3.9	1.1	0	EA vs. PCA
1.4	1.6	1.4	2.1	2.3	0	0.2	0.8	0.4	0.4	0	EA vs. Placebo
0	0.2	0.4	0.2	0.6	0	0.3	1.6	0	0.4	0	F vs. F/O
7.7	1.4	5	21.1	8.4	0	3.9	0.3	4.2	7.2	0	F vs. F/S
1.6	1.9	26	2.4	3.1	0	0.4	0	0.4	0.7	0	F vs. FIC
0	0.1	0.2	0.1	0.3	0	0.2	0.9	0	0.3	0	F vs. ITM
0	0.5	0.9	0.6	1.6	0	0.9	4.1	0.1	1.2	0	F vs. LB
0.6	8.1	1.6	1	2.6	0	2.9	3.4	8.3	5.3	0	F vs. LP
0.2	0.2	0.5	0.3	0.8	0	0.9	0	0.1	0.7	0	F vs. O
0.1	1.7	2.9	1.9	4.9	0	2.8	13	0.3	3.6	0	F vs. PA
1.5	2.1	4.2	2.7	7	0	7.7	0	0.6	5.7	0	F vs. PCA
0.4	0.6	0.7	0.7	1.2	0	0.3	0.6	0.1	0.4	0	F vs. Placebo
0	0.2	0.4	0.2	0.6	0	0.3	1.6	0	0.4	0	F/O vs. PA
0	0	0	0	0	0	0	0	0	0	0	F/S vs. F/S/O
1.6	7	0.7	3.8	1.2	0	3.1	2.9	6.7	3.7	0	F/S vs. LP
12.9	1.2	1	2.7	1.6	0	0.6	0	0.1	0.4	0	F/S vs. LP/S
0.6	0.4	0.1	2	0.2	0	0.2	2.2	0.4	0.1	0	F/S vs. PA
1.4	2.5	2.2	10.5	3.7	0	6	0.1	2.1	2.9	0	F/S vs. PCA
0.4	0.3	0.2	0.8	0.3	0	0	0.3	0.1	0	0	F/S vs. Placebo
0	0.1	0.2	0.1	0.3	0	0.2	0.9	0	0.3	0	ITM vs. PA
0	0.5	0.9	0.6	1.6	0	0.9	4.1	0.1	1.2	0	LB vs. PA
0.3	2	0	0	0	0	1.4	0.8	1.9	0.7	0	LP vs. PCA
17.6	0.8	0.6	0.3	1	0	1.1	0	0.5	0.4	0	LP/S vs. PCA
0.2	0.2	0.5	0.3	0.8	0	0.9	0	0.1	0.7	0	O vs. PCA
1.9	0.8	2	1.3	3.4	0	6.4	13	0.4	3.2	0	PA vs. PCA
0.6	0.6	0.5	0.6	0.8	0	0.1	1.7	0.3	0.1	0	PA vs. Placebo

F vs. Placebo	F vs. PCA	F vs. PA	F vs. O	F vs. LP	F vs. LB	F vs. ITM	F vs. FIC	F vs. F/S	F vs. F/O	EA vs. Placebo	EA vs. PCA	EA vs. PA
0	0	0	0	0	0	0	0	0	0	0	0	0
2	4.7	2.6	2.4	9.8	1.7	1.6	1.6	2.8	1.3	1.4	0.8	1.1
0.6	0.5	0.2	0.2	15	0.1	0.1	0.9	1.6	0.1	1.3	2.8	2
0.4	0	1.2	0	0.8	0.8	0.8	0	0	0.6	0.4	0	0.9
1	5.2	1.7	2.6	4.4	1.1	1	0.7	1.3	0.8	0.5	3.6	0.1
0	0	0	0	0	0	0	0	0	0	0	0	0
4.6	4.9	3	2.4	4.2	1.9	1.9	5.7	2.8	1.5	7.3	9.6	9
0.4	0.3	0.2	0.1	0.2	0.1	0.1	0.7	1.1	0.1	1	1.4	1.2
1.1	1.2	0.7	0.6	1	0.5	0.5	19.8	0.7	0.4	1.8	2.4	2.2
1.8	1.1	0.8	0.5	9.5	0.5	0.5	2.6	0.3	0.4	3.6	5.6	4.6
0.6	0.4	0	0.2	0.4	0	0	1.2	1	0	1.8	3.5	2.3
0.1	0.4	2.7	0.2	0.8	1.7	1.7	1.5	0.2	1.3	2.9	3.4	5
3.7	8	1.5	4	2.2	0.9	0.9	7	1.3	0.7	10.8	26.5	15
12.4	0.6	0.6	0.3	0.6	0.4	0.4	1.1	0	0.3	13.6	2.1	2.5
1	0.8	2.6	0.4	0.4	1.6	1.6	0.3	0.5	28.4	0.4	0.2	1.4
7.8	11.8	7.3	5.9	10.1	4.7	4.6	3.8	43.8	3.6	0.5	2.5	2
1.1	1.2	0.7	0.6	1	0.5	0.5	37.7	0.7	0.4	1.8	2.4	2.2
0.6	0.5	1.5	0.2	0.2	1	6.3	0.2	0.3	0.7	0.2	0.1	0.8
2.6	2.2	6.7	1.1	1	14	4.2	0.7	1.3	3.3	1	0.5	3.7
1.3	2.1	1.2	1.1	11.7	0.8	0.8	1.2	2.1	0.6	1.3	0.9	1.4
0.5	1.8	0.7	26.4	0.6	0.5	0.5	0.4	0.7	0.4	0.3	0.9	0.2
8.1	6.9	21.1	3.5	3.1	13.5	13.1	2.2	4	10.3	3.1	1.5	11.7
4.2	14.7	6.1	7.3	4.8	3.9	3.8	3.2	5.7	3	2.5	7.1	1.6
12.3	0.8	1.3	0.4	0.5	0.9	0.8	0.6	0.7	0.6	10.3	0.6	0.1
1	0.8	2.6	0.4	0.4	1.6	1.6	0.3	0.5	25.5	0.4	0.2	1.4
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.3	0.1	0.1	8.9	0	0	0.5	4	0	1	1.1	1
0.4	1.2	0.5	0.6	0.3	0.3	0.3	0.7	1.9	0.2	1.1	0.7	1.1
0.8	0.3	3	0.1	0.3	1.9	1.9	0.1	2.7	1.5	0.6	0.1	2.2
1.2	9.8	3.2	4.9	0.9	2	2	1.7	10.8	1.6	2.3	6	0.8
5	0	0.4	0	0	0.2	0.2	0.1	0.9	0.2	4.4	0.3	0
0.6	0.5	1.5	0.2	0.2	1	33.3	0.2	0.3	0.7	0.2	0.1	0.8
2.6	2.2	6.7	1.1	1	30.8	4.2	0.7	1.3	3.3	1	0.5	3.7
0.1	0.8	0.3	0.4	2.2	0.2	0.2	0	0	0.1	0.1	0.8	0.2
0.2	1.6	0.4	0.8	0.1	0.3	0.3	0.4	0.9	0.2	0.7	2.8	1.2
0.5	1.8	0.7	25.3	0.6	0.5	0.5	0.4	0.7	0.4	0.3	0.9	0.2
3.1	10.5	13.8	5.3	2.6	8.8	8.6	1.6	2.8	6.7	6	7	13.6
16.4	0.2	2.3	0.1	0.1	1.5	1.4	0.4	0.2	1.1	14.5	1.2	2.5

PA vs. PCA	O vs. PCA	LP/S vs. PCA	LP vs. PCA	LB vs. PA	ITM vs. PA	F/S vs. Placebo	F/S vs. PCA	F/S vs. PA	F/S vs. LP/S	F/S vs. LP	F/S vs. F/S/O	F/O vs. PA
0	0	0	0	0	0	0	0	0	0	0	0	0
2.1	2.3	0.9	5.1	0.8	0.5	0	2.3	0.2	1.2	7.2	0	1.3
0.2	0.2	1.3	14.1	0.1	0	0.5	1.7	1.3	0.3	12.9	0	0.1
1.1	0	0	0.7	0.4	0.2	0.3	0	1	0	0.7	0	0.6
3.5	2.6	2.2	8.3	0.5	0.3	0.1	3.9	0.5	1.5	4.9	0	0.8
0	0	0	0	0	0	0	0	0	0	0	0	0
1.9	2.4	2.1	0.2	0.9	0.6	2.2	2.5	0.5	3.9	2	0	1.5
0.1	0.1	0.1	0	0.1	0	1	1.1	0.9	1	0.9	0	0.1
0.5	0.6	0.5	0.1	0.2	0.1	0.6	0.6	0.1	1	0.5	0	0.4
0.3	0.5	1.3	9.5	0.2	0.2	1.8	1.3	0.9	2.2	8.6	0	0.4
0.4	0.2	15.1	0.7	0	0	1.2	0.4	0.7	12.5	1.1	0	0
2.8	0.2	0.9	0.4	0.8	0.5	0	0.2	2.3	1	0.6	0	1.3
6.3	3.9	9.7	8.6	0.4	0.3	4	6.5	0.3	2.6	3	0	0.7
1.1	0.3	0.5	0.1	0.2	0.1	10.6	0.5	0.5	0.8	0.6	0	0.3
1.5	0.4	0.2	0.4	0.8	0.5	0.6	0.4	1.7	0.2	0	0	25.7
4.7	5.8	5.9	0.6	2.1	1.4	19.8	21.8	23.8	14.1	20.1	0	3.6
0.5	0.6	0.5	0.1	0.2	0.1	0.6	0.6	0.1	1	0.5	0	0.4
0.9	0.2	0.1	0.2	0.4	10.6	0.3	0.2	1	0.1	0	0	0.7
4.1	1.1	0.5	0.9	14.1	1.3	1.5	1.1	4.6	0.6	0.1	0	3.3
0.9	1	0.1	8.9	0.4	0.2	0.2	0.4	0.5	0.5	9.4	0	0.6
1	25	0.6	0.9	0.2	0.1	0	1.1	0.1	0.5	0.1	0	0.4
12.7	3.4	1.5	2.9	6.2	4.2	4.6	3.5	14.3	1.8	0.2	0	10.3
8.5	7.2	5	7.7	1.8	1.2	0.2	9.5	1.1	4.1	0.6	0	3
0.5	0.4	0.1	0.2	0.4	0.3	10.2	0.2	0.6	0.3	0	0	0.7
1.5	0.4	0.2	0.4	0.8	0.5	0.6	0.4	1.7	0.2	0	0	27.8
0	0	0	0	0	0	0	0	0	0	0	100	0
0.2	0.1	0.7	7.9	0	0	2.5	3.3	2.8	2.3	11	0	0
0.7	0.6	14.3	0.7	0.1	0.1	1.5	2.6	1.7	14.4	1.6	0	0.2
2.5	0.1	0.7	0.4	0.9	0.6	2.3	2.3	4.3	1.4	1.6	0	1.5
6.5	4.9	7	7.3	0.9	0.6	7.6	17.4	9.9	9.3	8.1	0	1.6
0.3	0	0.1	0.1	0.1	0.1	4.8	0.7	0.9	0.5	0.5	0	0.2
0.9	0.2	0.1	0.2	0.4	70.2	0.3	0.2	1	0.1	0	0	0.7
4.1	1.1	0.5	0.9	60.5	1.3	1.5	1.1	4.6	0.6	0.1	0	3.3
0.6	0.4	0.5	2.7	0.1	0.1	0.1	0.8	0.2	0.3	2.1	0	0.1
1.2	0.8	21.3	1.4	0.1	0.1	0.4	2.2	1	16.2	0.5	0	0.2
1	27.4	0.6	0.9	0.2	0.1	0	1.1	0.1	0.5	0.1	0	0.4
22.8	5.2	4.4	6.3	4.1	2.7	4.3	7.8	13	3.1	0.6	0	6.8
1.9	0.1	0.5	0.3	0.7	0.5	14	0.4	2	0.1	0	0	1.1

AA vs. LP/S	AA vs. LP	AA vs. LB	AA vs. ITM	AA vs. FIC	AA vs. F/S/O	AA vs. F/S	AA vs. F/O	AA vs. F	AA vs. EA	AA vs. ACB/S	AA vs. ACB	PA vs. Placebo
33.7	30.1	26.8	25.9	27.7	24.8	32.9	27.4	34.4	35.3	24.8	31.4	0
0.6	3.6	1.4	1.2	1.7	1.1	1.5	1.8	3.1	0.5	1.1	11.1	0.2
0.9	9.8	0.2	0.1	0.7	0.8	1.1	0.2	0.3	1.8	0.8	7.8	0.8
0	0.5	0.5	0.5	0	0	0	0.3	0	0	0	1.3	0.7
1.5	5.8	2	1.9	2.4	2	2.6	2.3	3.4	2.3	2	11.2	0.4
0	0	0	0	0	0	0	0	0	0	24.8	0	0
1.4	0.2	1.3	1.2	0.2	1.2	1.7	1.8	3.2	6.2	1.2	1.1	2.2
0.1	0	0.1	0.1	0.2	0.5	0.7	0.1	0.2	0.9	0.5	0.1	0.2
0.3	0	0.3	0.3	10.2	0.3	0.4	0.4	0.8	1.5	0.3	0.3	0.5
0.8	6.7	0.3	0.2	0.7	0.6	0.8	0.4	0.7	3.7	0.6	2.8	1.2
10	0.5	0.2	0.2	0.8	0.2	0.2	0.2	0.3	2.2	0.2	0.3	0.6
0.6	0.3	1.2	1.3	0.5	0.1	0.1	0.9	0.3	2.2	0.1	0	2.5
6.4	6	3.5	3.3	7.6	3.3	4.3	3.8	5.2	17.1	3.3	4.1	5.2
0.3	0.1	0.5	0.5	0.2	0.2	0.3	0.4	0.4	1.4	0.2	0.1	12.4
0.1	0.2	0.6	0.6	0.3	0.2	0.3	14	0.6	0.1	0.2	0.2	1.2
3.9	0.4	3.3	2.9	4.4	11	14.7	4.4	7.8	1.6	11	2.7	1.8
0.3	0	0.3	0.3	17.5	0.3	0.4	0.4	0.8	1.5	0.3	0.3	0.5
0.1	0.1	0.3	3.8	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.7
0.3	0.6	7.2	1.7	0.8	0.6	0.7	0.5	1.4	0.3	0.6	0.6	3.2
0.1	6.2	0.6	0.6	0.5	0.2	0.3	0.8	1.4	0.6	0.2	2	0.3
0.4	0.6	0.6	0.6	0.7	0.6	0.8	0.7	1.2	0.6	0.6	0.6	0.1
1	2	4.5	5.2	2.6	1.8	2.3	1.6	4.5	1	1.8	1.9	10
3.3	5.4	5.2	4.8	6.2	4.8	6.4	6.2	9.6	4.6	4.8	5.3	0.9
0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.5	0.4	0.1	0.2	11.7
0.1	0.2	0.6	0.6	0.3	0.2	0.3	13.4	0.6	0.1	0.2	0.2	1.2
0	0	0	0	0	24.8	0	0	0	0	0	0	0
0.4	5.5	0.1	0.1	0.1	1.7	2.2	0.1	0.2	0.7	1.7	2.1	0
9.5	0.5	0.4	0.4	0.3	1.3	1.7	0.5	0.8	0.4	1.3	0.4	0.1
0.5	0.3	1	1.1	0.1	1.2	1.5	0.6	0.2	0	1.2	0.1	1.9
4.7	5.1	3.8	3.6	4.4	8.8	11.6	4.4	6.5	3.9	8.8	4.1	1.6
0.1	0	0.1	0.1	0.1	0.3	0.4	0.1	0	0.2	0.3	0	4.9
0.1	0.1	0.3	22	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.7
0.3	0.6	19.5	1.7	0.8	0.6	0.7	0.5	1.4	0.3	0.6	0.6	3.2
0.3	1.9	0.3	0.3	0.4	0.4	0.5	0.4	0.6	0.5	0.4	0.9	0.1
14.2	1	0.7	0.6	1.1	1.1	1.5	0.7	1.1	1.8	1.1	0.7	0.6
0.4	0.6	0.6	0.6	0.7	0.6	0.8	0.7	1.2	0.6	0.6	0.6	0.1
2.9	4.4	10.7	10.8	4.8	3.9	5.2	8.9	6.9	4.5	3.9	4.4	8.9
0.3	0.2	0.8	0.8	0.3	0.2	0.3	0.4	0.2	0.8	0.2	0.1	19.2

ACB vs O	ACB vs LP/S	ACB vs LB	ACB vs ITM	ACB vs FIC	ACB vs F/S/O	ACB vs F/S	ACB vs F/O	ACB vs EA	ACB vs ACB/S	AA vs Placebo	AA vs PA	AA vs O
0	0	0	0	0	0	0	0	0	0	29.9	33.5	34.4
15.9	12.7	13.1	12.3	14.7	12.1	17.4	14	15	12.1	1.4	1.4	1.5
10.2	9.4	8.3	7.8	9.8	8.6	12.3	8.6	12.3	8.6	0.7	0.2	0.2
1.6	1.4	1.9	1.8	1.4	1.2	1.8	1.7	1.7	1.2	0.2	0.7	0
12.3	10.7	9.1	8.7	9.6	8.4	12	9.1	11.9	8.4	2.3	2.3	1.7
0	0	0	0	0	0	0	0	0	30.3	0	0	0
0.4	2.6	0.5	0.3	1.5	0.5	0.7	1	8.6	0.5	0.2	1.3	1.6
0	0.1	0	0	0.3	0.6	0.9	0.1	1.2	0.6	0.1	0.1	0.1
0.1	0.6	0.1	0.1	12.7	0.1	0.2	0.3	2.1	0.1	0	0.3	0.4
3.2	3.9	2.6	2.5	4.1	2	2.8	2.6	7.9	2	0.6	0.2	0.3
0.2	10.5	0	0	0.7	0.5	0.7	0	2.2	0.5	0.7	0.3	0.1
0.1	0.7	1.5	1.5	0.7	0.1	0.1	1	2.6	0.1	0.2	1.9	0.1
2.2	2.1	0	0.1	5.1	0	0	0.3	14.4	0	7	4.2	2.6
0.1	0.4	0.5	0.5	0.4	0.2	0.3	0.4	1.7	0.2	8.3	0.7	0.2
0	0.1	0.9	1	0.1	0	0.1	17.3	0.2	0	0.2	1	0.3
1.1	6.9	1.2	0.8	2.6	16.1	23.1	2.5	1.6	16.1	1.7	3.1	3.8
0.1	0.6	0.1	0.1	22.7	0.1	0.2	0.3	2.1	0.1	0	0.3	0.4
0	0.1	0.5	4.7	0.1	0	0	0.3	0.1	0	0.1	0.6	0.2
0.1	0.3	9.4	2.6	0.4	0.1	0.1	1.3	0.4	0.1	0.4	2.7	0.7
3.3	2.1	2.8	2.6	2.9	2.2	3.1	3.1	1.9	2.2	0.4	0.6	0.7
19.9	0.3	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.7	0.7	16.4
0.2	1.1	7.4	8	1.1	0.3	0.4	4	1.4	0.3	1.3	8.4	2.2
1.2	2.4	0.8	0.5	2	0.8	1.1	1.9	1.6	0.8	5.6	5.7	4.7
0	0.3	0.3	0.4	0	0.1	0.1	0.1	0.7	0.1	7.5	0.3	0.3
0	0.1	0.9	1	0.1	0	0.1	16.1	0.2	0	0.2	1	0.3
0	0	0	0	0	30.3	0	0	0	0	0	0	0
2.8	2.8	2.3	2.2	2.2	4.1	5.8	2.4	1.9	4.1	0.1	0.1	0.1
0.1	10.1	0.1	0	0.2	1.1	1.6	0.1	1.1	1.1	0.4	0.5	0.4
0.1	0.4	1.4	1.4	0	1.3	1.9	0.9	0.1	1.3	0.4	1.7	0.1
1.6	0.2	0.3	0.2	1	6.7	9.6	0.9	0.9	6.7	4.8	4.3	3.2
0	0.1	0.2	0.2	0.1	0.4	0.6	0.1	0.3	0.4	3.2	0.2	0
0	0.1	0.5	25.9	0.1	0	0	0.3	0.1	0	0.1	0.6	0.2
0.1	0.3	23	2.6	0.4	0.1	0.1	1.3	0.4	0.1	0.4	2.7	0.7
0.9	0.7	0.6	0.5	0.5	0.4	0.6	0.5	0.6	0.4	0.4	0.4	0.3
0.3	13.6	0	0	0.5	0.6	0.9	0.1	1.1	0.6	1	0.8	0.5
20.1	0.3	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.7	0.7	18
1.6	1.8	8.4	8.6	1.2	0.6	0.8	6.2	0.5	0.6	8	15.2	3.4
0	0.2	1	1.1	0.3	0.1	0.2	0.6	0.8	0.1	10.8	1.2	0.1

ACB/S vs PCA	ACB/S vs PA	ACB/S vs O	ACB/S vs LP/S	ACB/S vs LP	ACB/S vs LB	ACB/S vs ITM	ACB/S vs FIC	ACB/S vs F/S/O	ACB/S vs F/O	ACB/S vs F	ACB/S vs EA	ACB vs Placebo
0	0	0	0	0	0	0	0	0	0	0	0	0
1.5	0.1	0.1	0.8	5	0.2	0	0.5	0	0.5	1.7	1	13.7
1.1	0.9	0.9	0.2	8.9	0.7	0.7	0.3	0	0.7	1	0.5	9.3
0	0.7	0	0	0.5	0.5	0.5	0	0	0.3	0	0	1.7
2.6	0.3	0.9	1.1	3.4	0.1	0.2	0.2	0	0.1	0.8	0.4	9.6
32.9	30.6	29.9	30.1	30.5	26.3	24.8	28.7	50	27.3	39.5	30	0
1.7	0.4	0.1	2.7	1.4	0	0.1	1.6	0	0.4	1.7	6.8	1.4
0.7	0.6	0.6	0.7	0.7	0.5	0.5	0.8	0	0.5	0.6	1.4	0.2
0.4	0.1	0	0.7	0.3	0	0	10.2	0	0.1	0.4	1.7	0.4
0.8	0.6	0.5	1.5	6	0.4	0.4	1.5	0	0.3	0.2	3.9	3.7
0.2	0.5	0.3	8.7	0.7	0.4	0.4	1	0	0.4	0.6	2.1	0.4
0.1	1.6	0	0.7	0.4	1.1	1.1	0.6	0	0.8	0.1	2	0.2
4.3	0.2	1.7	1.8	2.1	0	0.1	4.1	0	0.2	0.8	10.6	3.5
0.3	0.4	0.1	0.6	0.4	0.2	0.3	0.5	0	0.2	0	1.5	9.5
0.3	1.2	0	0.2	0	0.8	0.8	0.1	0	14.2	0.3	0.2	0.4
14.7	16.5	16.7	9.9	14	14.9	13.8	17.4	0	16.5	26.5	14.7	1
0.4	0.1	0	0.7	0.3	0	0	18.5	0	0.1	0.4	1.7	0.4
0.2	0.7	0	0.1	0	0.4	3.8	0	0	0.3	0.2	0.1	0.3
0.7	3.2	0.1	0.4	0	7.7	2.2	0.2	0	1.1	0.8	0.4	1.2
0.3	0.3	0.4	0.3	6.5	0.4	0.3	0.3	0	0.6	1.3	0.7	2.6
0.8	0.1	15	0.3	0.1	0	0	0.1	0	0.1	0.4	0.2	0.1
2.3	9.9	0.2	1.3	0.1	6.3	6.7	0.6	0	3.6	2.4	1.3	3.6
6.4	0.7	1.6	2.9	0.4	0	0.2	0.9	0	0.9	3.4	1.9	0.7
0.1	0.4	0.1	0.2	0	0.2	0.3	0	0	0	0.4	0.5	8.9
0.3	1.2	0	0.2	0	0.8	0.8	0.1	0	13.1	0.3	0.2	0.4
0	0	0	0	0	0	0	0	50	0	0	0	0
2.2	1.9	1.9	1.6	7.6	1.7	1.6	2.1	0	1.7	2.4	2.6	2.4
1.7	1.2	1.2	10.1	1.1	1	0.9	1.2	0	0.9	1.2	1.9	0
1.5	3	1.3	1	1.1	2.3	2.2	1.3	0	1.9	1.7	1.4	0.5
11.6	6.9	7.8	6.5	5.6	5.6	5.4	5.6	0	5.3	6.5	7.3	1
0.4	0.6	0.4	0.3	0.4	0.5	0.5	0.4	0	0.5	0.5	0.6	3.7
0.2	0.7	0	0.1	0	0.4	21	0	0	0.3	0.2	0.1	0.3
0.7	3.2	0.1	0.4	0	18.6	2.2	0.2	0	1.1	0.8	0.4	1.2
0.5	0.1	0.2	0.2	1.4	0.1	0.1	0	0	0.1	0	0	0.5
1.5	0.7	0.9	11.3	0.4	0.5	0.5	0.2	0	0.5	0.6	0.2	0.4
0.8	0.1	15	0.3	0.1	0	0	0.1	0	0.1	0.4	0.2	0.1
5.2	9	1.8	2.2	0.4	6.3	6.5	0.4	0	4.6	1.7	0.9	4.4
0.3	1.4	0.2	0	0	1	1	0.1	0	0.7	0.1	0.4	12.3

F/O vs LB	F/O vs ITM	F/O vs FIC	F/O vs F/S/O	F/O vs F/S	F vs LP/S	F vs F/S/O	EA vs O	EA vs LB	EA vs ITM	EA vs F/S/O	EA vs F/O	ACB/S vs Placebo
0	0	0	0	0	0	0	0	0	0	0	0	0
0.6	0.7	0.1	0.5	0.7	2.8	1.7	1.2	1.2	1	1	1.7	0
0	0.1	0.6	0.7	1	0.7	1	1.9	1.5	1.4	0.5	1.5	0.3
0.3	0.3	0.4	0.3	0.4	0	0	0	0.6	0.6	0	0.4	0.2
0.4	0.4	0.1	0.1	0.2	2.2	0.8	0.7	0.3	0.2	0.4	0.6	0.1
0	0	0	0	0	0	0	0	0	0	0	0	28.3
0.6	0.8	2.5	0.4	0.6	5.3	1.7	8.8	7.3	6.8	6.8	8	1.6
0	0	0.3	0.5	0.7	0.3	0.6	1.1	0.9	0.9	1.4	1	0.7
0.2	0.2	12.1	0.1	0.1	1.3	0.4	2.2	1.8	1.7	1.7	2	0.4
0.2	0.2	1.3	0.3	0.5	1.8	0.2	4.5	3.6	3.4	3.9	3.9	1.3
0	0	0.7	0.4	0.6	12.2	0.6	2.4	1.8	1.7	2.1	1.8	0.8
0.6	0.7	1.7	0.8	1	1.1	0.1	2.7	3.5	3.5	2	3.1	0
0.3	0.4	4.7	0.2	0.3	1.6	0.8	16.3	11.3	10.9	10.6	11.4	2.9
0.1	0.2	0.8	0.2	0.2	0.8	0	1.8	1.9	1.8	1.5	1.8	7.6
20.2	18.6	17.9	14.2	19.5	0.5	0.3	0.2	0.8	0.9	0.2	17	0.4
1.6	1.9	0	16.5	22.7	13.6	26.5	2.6	2.4	2	14.7	3.8	14.2
0.2	0.2	22.3	0.1	0.1	1.3	0.4	2.2	1.8	1.7	1.7	2	0.4
0.3	5.5	0.4	0.3	0.3	0.3	0.2	0.1	0.4	4.6	0.1	0.2	0.2
10.4	1.7	1.7	1.1	1.6	1.3	0.8	0.5	8.9	2.2	0.4	0.9	1
0.3	0.3	0.3	0.6	0.8	1.7	1.3	1.4	1.3	1.1	0.7	1.5	0.2
0.2	0.2	0	0.1	0.1	0.9	0.4	19.6	0.2	0.2	0.2	0.4	0
4.5	5.4	5.2	3.6	4.9	4.1	2.4	1.5	6.3	7	1.3	2.8	3.3
1.3	1.6	0	0.9	1.2	7.3	3.4	0.3	2	1.6	1.9	3.1	0.1
0.3	0.3	0.1	0	0.1	0.7	0.4	0.7	0.2	0.2	0.5	0.5	7.3
21	19.6	16.4	13.1	18.1	0.5	0.3	0.2	0.8	0.9	0.2	16.1	0.4
0	0	0	27.3	0	0	39.5	0	0	0	30	0	0
0	0	0.3	1.7	2.4	0.3	2.4	0.9	0.8	0.7	2.6	0.8	1.8
0.1	0.1	0.3	0.9	1.3	12.1	1.2	0.9	0.9	0.8	1.9	1	1.1
0.7	0.8	0.9	1.9	2.6	0.4	1.7	0.1	1.3	1.4	1.4	0.8	1.7
0.7	0.8	0	5.3	7.3	2	6.5	0.7	1.1	0.9	7.3	1.6	5.4
0.1	0.1	0	0.5	0.6	0.1	0.5	0.2	0	0	0.6	0.1	3.4
0.3	32.7	0.4	0.3	0.3	0.3	0.2	0.1	0.4	26	0.1	0.2	0.2
30.9	1.7	1.7	1.1	1.6	1.3	0.8	0.5	23.2	2.2	0.4	0.9	1
0.1	0.1	0.1	0.1	0.1	0.3	0	0.3	0.1	0.1	0	0.1	0
0.1	0.1	0.4	0.5	0.7	15.5	0.6	1.4	0.9	0.8	0.2	0.8	0.3
0.2	0.2	0	0.1	0.1	0.9	0.4	20.2	0.2	0.2	0.2	0.4	0
3	3.5	5.2	4.6	6.3	4.5	1.7	1.1	8.7	8.9	0.9	6.6	3.1
0.5	0.6	0.9	0.7	0.9	0.2	0.1	0.8	1.6	1.6	0.4	1.3	10

F/S/O vs LP	F/S/O vs LB	F/S/O vs ITM	F/S/O vs FIC	F/S vs O	F/S vs LB	F/S vs ITM	FIS vs FIC	F/O vs Placebo	F/O vs PCA	F/O vs O	F/O vs LP/S	F/O vs LP
0	0	0	0	0	0	0	0	0	0	0	0	0
5	0.2	0	0.5	0.1	0.2	0.1	0.6	0.7	2.5	0.7	1.4	5.7
8.9	0.7	0.7	0.3	1.2	1	0.9	0.4	0.6	0.3	0.1	0.6	9.9
0.5	0.5	0.5	0	0	0.6	0.6	0	0.1	0.4	0.4	0.3	0.9
3.4	0.1	0.2	0.2	1.3	0.2	0.2	0.3	0.3	3.2	1.2	1.2	3.3
0	0	0	0	0	0	0	0	0	0	0	0	0
1.4	0	0.1	1.6	0.2	0	0.1	2.3	2.8	2.5	0.7	3.1	1.9
0.7	0.5	0.5	0.8	0.8	0.7	0.6	1.1	0.3	0.1	0	0.2	0.1
0.3	0	0	10.2	0	0	0	14.3	0.7	0.6	0.2	0.8	0.5
6	0.4	0.4	1.5	0.7	0.6	0.6	2.1	1.2	0.5	0.1	1.1	6.4
0.7	0.4	0.4	1	0.5	0.6	0.5	1.5	0.5	0.3	0.1	8.9	0.3
0.4	1.1	1.1	0.6	0	1.5	1.5	0.9	1	1.2	1	1.5	1.3
2.1	0	0.1	4.1	2.4	0	0.1	5.8	3.6	5.3	2.2	1.5	1.9
0.4	0.2	0.3	0.5	0.2	0.3	0.3	0.7	10.1	0.6	0.4	0.7	0.6
0	0.8	0.8	0.1	0	1	1.1	0.1	19.4	19.3	17.6	15	16.1
14	14.9	13.8	17.4	23.8	20.3	18.4	24.4	4	6	1.6	8.1	4.5
0.3	0	0	18.5	0	0	0	26	0.7	0.6	0.2	0.8	0.5
0	0.4	3.8	0	0	0.6	5.1	0.1	0	0.2	0.3	0.2	0.3
0	7.7	2.2	0.2	0.1	10.5	2.9	0.3	0.2	0.7	1.3	0.8	1.2
6.5	0.4	0.3	0.3	0.5	0.6	0.5	0.5	0.6	1.1	0.3	0.9	7.3
0.1	0	0	0.1	21.4	0	0	0.2	0.2	1	17.1	0.4	0.2
0.1	6.3	6.7	0.6	0.3	8.6	9	0.9	0.6	2.2	4.2	2.6	3.9
0.4	0	0.2	0.9	2.4	0	0.3	1.3	1.4	8.5	2.9	3.7	1.4
0	0.2	0.3	0	0.1	0.3	0.3	0	9.8	0.1	0.2	0.2	0
0	0.8	0.8	0.1	0	1	1.1	0.1	19	18.5	16.3	14.2	14.9
30.5	26.3	24.8	28.7	0	0	0	0	0	0	0	0	0
7.6	1.7	1.6	2.1	2.8	2.3	2.1	2.9	0	0.2	0.1	0.3	5.8
1.1	1	0.9	1.2	1.8	1.3	1.2	1.7	0.2	0.7	0.2	8.8	0.1
1.1	2.3	2.2	1.3	1.9	3.1	3	1.8	0.4	0.9	0.9	1.1	1
5.6	5.6	5.4	5.6	11.1	7.6	7.1	7.9	0.1	6	2.2	0.6	0.3
0.4	0.5	0.5	0.4	0.6	0.7	0.6	0.6	4	0.1	0.1	0.1	0.1
0	0.4	21	0	0	0.6	28	0.1	0	0.2	0.3	0.2	0.3
0	18.6	2.2	0.2	0.1	25.3	2.9	0.3	0.2	0.7	1.3	0.8	1.2
1.4	0.1	0.1	0	0.3	0.1	0.1	0	0	0.5	0.2	0.1	1.5
0.4	0.5	0.5	0.2	1.3	0.7	0.7	0.3	0.3	1	0.4	11.5	0.2
0.1	0	0	0.1	21.3	0	0	0.2	0.2	1	16.8	0.4	0.2
0.4	6.3	6.5	0.4	2.5	8.6	8.6	0.6	2.2	12.3	7.7	7	5.6
0	1	1	0.1	0.2	1.3	1.3	0.1	14.5	0.6	0.6	0.7	0.7

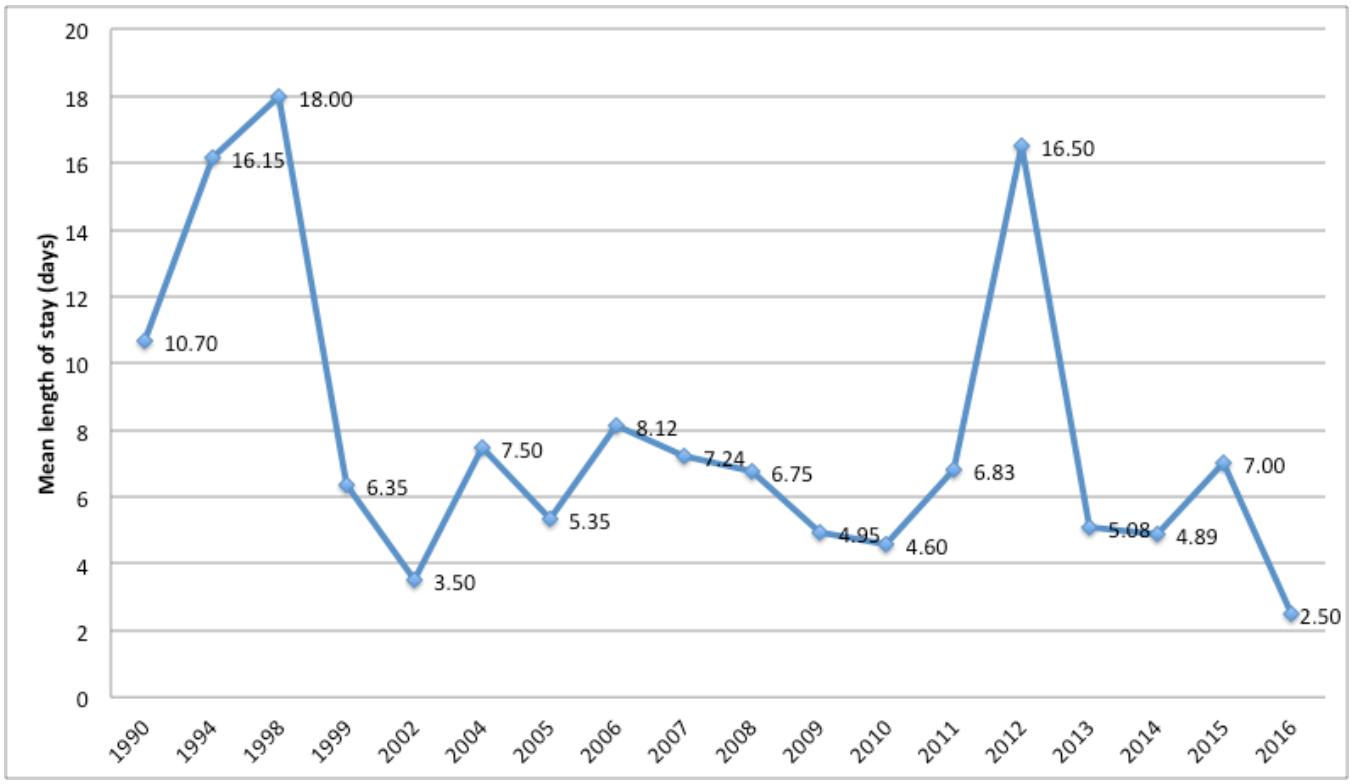
FIC vs Placebo	FIC vs PCA	FIC vs PA	FIC vs O	FIC vs LP/S	FIC vs LP	FIC vs LB	FIC vs ITM	F/S/O vs Placebo	F/S/O vs PCA	F/S/O vs PA	F/S/O vs O	F/S/O vs LP/S
0	0	0	0	0	0	0	0	0	0	0	0	0
0.6	2.4	0.7	0.6	1.5	6.6	0.3	0.4	0	1.5	0.1	0.1	0.8
0.1	0.9	0.7	0.7	0	11	0.6	0.6	0.3	1.1	0.9	0.9	0.2
0.3	0	0.8	0	0	0.6	0.5	0.6	0.2	0	0.7	0	0
0.4	3.3	0.7	1.3	1.4	3.8	0.4	0.4	0.1	2.6	0.3	0.9	1.1
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.2	1.6	1.9	1.2	0.4	1.8	1.5	1.6	1.7	0.4	0.1	2.7
0.1	0.2	0.3	0.3	0.1	0.2	0.3	0.3	0.7	0.7	0.6	0.6	0.7
13.8	14.1	13.1	12.6	12.8	13.3	11	10.2	0.4	0.4	0.1	0	0.7
0.2	1	1.2	1.3	0	9	1.1	1	1.3	0.8	0.6	0.5	1.5
0.2	1.1	0.7	0.9	11	0.4	0.6	0.6	0.8	0.2	0.5	0.3	8.7
0.9	0.7	2.7	0.8	0	0.3	2	2	0	0.1	1.6	0	0.7
1.6	10.5	5.5	7.1	2.8	2.8	4.5	4.2	2.9	4.3	0.2	1.7	1.8
10.7	0.3	1.1	0.5	0.1	0.2	0.8	0.8	7.6	0.3	0.4	0.1	0.6
0.6	0.4	1.5	0.1	0.3	0.1	1	1	0.4	0.3	1.2	0	0.2
3.8	6.1	2.4	1.7	9.3	5.3	1.2	1.4	14.2	14.7	16.5	16.7	9.9
23.5	24.2	23.5	22.9	21.1	23.1	20	18.5	0.4	0.4	0.1	0	0.7
0.4	0.3	0.9	0.1	0.2	0.1	0.6	4.5	0.2	0.2	0.7	0	0.1
1.6	1.1	4	0.3	0.7	0.3	9.3	2.7	1	0.7	3.2	0.1	0.4
0.2	0.8	0	0	0.8	8.2	0.1	0.1	0.2	0.3	0.3	0.4	0.3
0.2	1	0.2	17.9	0.5	0.2	0.1	0.1	0	0.8	0.1	15	0.3
5.1	3.6	12.6	1	2.2	1	8.1	8.4	3.3	2.3	9.9	0.2	1.3
1.3	8.6	2	3.1	4.3	1.7	1	1.2	0.1	6.4	0.7	1.6	2.9
9.6	0.2	0.5	0.1	0.3	0.1	0.3	0.3	7.3	0.1	0.4	0.1	0.2
0.6	0.4	1.5	0.1	0.3	0.1	1	1	0.4	0.3	1.2	0	0.2
0	0	0	0	0	0	0	0	28.3	32.9	30.6	29.9	30.1
0.3	0.2	0.3	0.2	0.6	6.5	0.3	0.2	1.8	2.2	1.9	1.9	1.6
0.1	0.4	0.2	0	9.9	0.2	0.2	0.2	1.1	1.7	1.2	1.2	10.1
0.6	0.1	2	0	0.4	0.3	1.3	1.3	1.7	1.5	3	1.3	1
0.1	6.1	1.1	2.3	0.7	0.4	0.5	0.6	5.4	11.6	6.9	7.8	6.5
3.9	0.1	0.2	0.1	0.1	0.1	0.1	0.1	3.4	0.4	0.6	0.4	0.3
0.4	0.3	0.9	0.1	0.2	0.1	0.6	24.3	0.2	0.2	0.7	0	0.1
1.6	1.1	4	0.3	0.7	0.3	21.7	2.7	1	0.7	3.2	0.1	0.4
0.1	0.6	0.2	0.3	0.2	1.7	0.1	0.1	0	0.5	0.1	0.2	0.2
0.1	1.5	0.6	0.8	12.9	0.2	0.4	0.4	0.3	1.5	0.7	0.9	11.3
0.2	1	0.2	17.6	0.5	0.2	0.1	0.1	0	0.8	0.1	15	0.3
3.5	6.7	10.2	2.6	2.9	1	7	7	3.1	5.2	9	1.8	2.2
13	0.4	1.8	0.3	0.1	0.1	1.2	1.2	10	0.3	1.4	0.2	0

LP vs O	LP vs LP/S	LB vs Placebo	LB vs PCA	LB vs O	LB vs LP/S	LB vs LP	ITM vs Placebo	ITM vs PCA	ITM vs O	ITM vs LP/S	ITM vs LP	ITM vs LB
0	0	0	0	0	0	0	0	0	0	0	0	0
5.7	4.9	0.2	1.9	0.3	1	5	0.1	1.7	0.1	0.8	4.7	0.2
11.3	10.7	0.6	0.2	0	0.6	9.5	0.6	0.2	0	0.6	9	0
0.6	0.6	0.3	0.6	0.6	0.5	1	0.4	0.7	0.6	0.5	1	0.1
5	5.3	0	2.8	0.9	0.9	3.4	0.1	2.5	0.8	0.8	3.3	0.1
0	0	0	0	0	0	0	0	0	0	0	0	0
1.4	1.6	2.1	1.8	0.1	2.6	1.3	1.8	1.6	0	2.4	1.1	0.2
0.1	0.1	0.2	0.1	0	0.1	0.1	0.2	0.1	0	0.1	0.1	0
0.4	0.4	0.5	0.5	0	0.6	0.3	0.4	0.4	0	0.6	0.3	0.1
7.4	8.8	1	0.3	0	1	6.3	0.9	0.3	0.1	0.9	6	0.1
0.4	11.2	0.5	0.3	0.1	8.7	0.2	0.5	0.3	0.1	8.3	0.2	0
0.5	0.3	1.5	1.7	1.4	1.8	1.6	1.5	1.7	1.4	1.9	1.7	0.2
4.3	0.3	3.7	4.8	1.9	1.7	2	3.6	4.5	1.7	1.7	2	0.1
0.3	0.2	9.4	0.7	0.5	0.8	0.6	9	0.7	0.5	0.8	0.6	0
0	0.2	0.6	0.8	0.9	0.7	0.9	0.7	0.9	1	0.8	0.9	0.2
3.4	4.6	2.4	4.5	0.3	6.8	3.2	1.9	3.9	0	6.2	2.7	0.5
0.4	0.4	0.5	0.5	0	0.6	0.3	0.4	0.4	0	0.6	0.3	0.1
0	0.1	0.3	0.4	0.5	0.4	0.5	5	5.2	4.8	4.1	4.3	6.4
0	0.4	9.3	9.9	9.6	7.9	8.6	1.7	2.2	2.7	2	2.4	9.7
7.9	7.3	0.4	0.9	0.1	0.7	6.8	0.3	0.8	0	0.7	6.4	0.1
17.5	0.3	0	0.8	16.5	0.3	0.1	0	0.8	15.6	0.3	0	0.1
0.1	1.3	4.5	6.2	7.7	5.7	7	5.4	7	8.3	6.3	7.5	1.5
1.4	2.9	0.2	7.1	1.8	2.7	0.4	0.2	6.4	1.4	2.3	0.2	0.4
0.1	0.2	9	0.1	0.4	0.1	0.2	8.5	0.2	0.4	0.1	0.3	0.1
0	0.2	0.6	0.8	0.9	0.7	0.9	0.7	0.9	1	0.8	0.9	0.2
0	0	0	0	0	0	0	0	0	0	0	0	0
6.5	7	0	0.2	0.1	0.3	5.5	0	0.1	0	0.3	5.2	0
0.2	10.7	0.1	0.6	0.2	8.5	0	0.1	0.5	0.1	8.1	0	0
0.3	0.1	1	1.4	1.4	1.5	1.4	1.1	1.5	1.4	1.6	1.5	0.2
2.7	1.1	0.7	5.2	1.6	0.1	0.8	0.9	4.8	1.4	0	0.9	0.2
0	0	3.7	0.2	0.2	0.2	0.2	3.5	0.2	0.2	0.2	0.2	0
0	0.1	0.3	0.4	0.5	0.4	0.5	29.6	29.7	26.5	23.1	23.7	40.6
0	0.4	27.1	26.7	23.4	20.5	20.9	1.7	2.2	2.7	2	2.4	37.4
1.9	1.9	0.1	0.4	0.1	0.1	1.5	0.1	0.4	0.1	0.1	1.4	0
0.6	13.8	0.4	0.9	0.3	11.3	0.2	0.4	0.8	0.3	10.8	0.2	0
17.6	0.3	0	0.8	16.5	0.3	0.1	0	0.8	15.7	0.3	0	0.1
1.6	2.1	4.7	14.6	9.9	8.9	7.5	5.2	14.6	10	9	7.6	1
0.2	0.1	14.1	1	1	1.1	1.1	13.6	1.1	1.1	1.1	1.1	0.2

LP vs PA	0	5.8	11.6	1.4	4.4	0	1.2	0.1	0.3	7.8	0.3	2.4	2.7	0.9	1.4	2.9	0.3	0.8	3.7	8.1	0	11.5	0.3	0.5	1.4	0	6.8	0.1	2.2	1.4	0.3	0.8	3.7	1.9	0.4	0	11.1	1.6
LP vs Placebo	0	5.9	10.8	0.9	4.1	0	0.4	0.1	0.1	8.5	0.2	0.5	1.2	10	0.5	1.5	0.1	0.3	1.3	7.8	0	3.9	0.4	9.1	0.5	0	6.6	0.1	0.8	0.2	3.9	0.3	1.3	1.7	0.1	0	4.4	12.5
LP/S vs O	0	0.9	0.8	0	0.2	0	3.1	0.2	0.8	1.2	10.6	0.8	4.1	0.5	0.2	8	0.8	0.1	0.4	0.8	17.2	1.3	1.4	0.3	0.2	0	0.4	10.3	0.4	1.6	0.1	0.1	0.4	0.1	14.3	18	0.4	0.2
LP/S vs PA	0	0.8	0.8	0.8	0.9	0	2.8	0.1	0.7	1.1	10.9	2.7	2.3	1.1	1.2	7.4	0.7	0.7	3.2	0.8	0.3	10	2.5	0.2	1.2	0	0.3	10.5	2.3	0.3	0.3	0.7	3.2	0.1	14.1	0.3	13	1.7
LP/S vs Placebo	0	1	0.1	0.3	1.1	0	1.2	0	0.3	0.2	11	0.8	1.4	10	0.3	6	0.3	0.2	0.8	0.6	0.4	2.6	3.1	8.6	0.3	0	0.3	10.2	0.9	0.8	3.8	0.2	0.8	0.2	13.3	0.4	6.3	12.2
O vs PA	0	0.1	0	0.9	0.8	0	0.3	0	0.1	0.2	0.2	2.2	2.1	0.7	1.6	0.8	0.1	0.9	4.2	0.1	20.7	13.2	1.3	0.7	1.6	0	0.1	0.1	2.2	1.5	0.3	0.9	4.2	0.1	0.3	21	14.7	1.7
O vs Placebo	0	0.1	0.6	0.3	0.9	0	1.8	0.2	0.4	1	0.6	0.1	5.3	9.2	0.5	1.9	0.4	0.3	1.2	0.2	16.9	3.7	1.7	8.8	0.5	0	0.1	0.1	0.5	2.3	3.6	0.3	1.2	0.2	0.7	16.9	5.7	12.1
PCA vs Placebo	0	2	0.9	0.3	3.3	0	0.3	0.1	0.1	0.8	0.9	0.2	9.9	11.9	0.2	2.4	0.1	0.1	0.6	0.6	1	1.9	8	10.8	0.2	0	0.2	0.6	0.5	6.9	4.6	0.1	0.6	0.6	1.5	1	11.4	15.4
Entire network	4.3	3	3	0.5	2.6	4.3	2.1	0.4	2	2.2	1.9	1.1	4	1.7	2.6	8.2	3.2	0.9	2.3	1.7	2.4	4.3	2.8	1.3	2.5	4.3	1.9	1.9	1.2	4	0.7	3.9	4.2	0.4	2.2	2.4	5.5	2.1

Contribution matrix for pain at rest – 24 hr; Numbers indicate percentage. Blue color; direct comparisons, green color; mixed comparisons, and yellow color indicate indirect comparisons.

Mean duration of hospital stay by year



STATA commands

First download the network command. You can do that by typing within STATA
net from http://www.mrc-bsu.cam.ac.uk/IW_Stata/

Then choose 'meta' and it will guide you

For the commands of network graphs you type within STATA
net from http://www.mtm.uoi.gr

Download network_graphs

Note that the examples below are for the pain at rest – 24 hr. The commands need to be modified each time accordingly

Setup the data

Once you open the data, type within stata
network setup m sd n, trt(t) stud(id) smd ref(PCA)

This would bring the data to the right format for conducting NMA (m=mean, sd=standard deviation, n=sample size, t=treatment, id=study, smd=standardized mean difference, ref(PCA) means that the reference treatment is PCA). If the data are not combined correctly you will get the following error message

variables id t do not uniquely identify the observations

Then type within STATA
network convert pairs

To convert the data in the right format for drawing the network plot and inconsistency plot, type edit to see the data

for the network plot type (TREATMENTS ALPHABETICALLY AS THEY ARE GIVEN BY STATA ABOVE)

networkplot _t1 _t2,lab(ACB ACB/S AP EA F F/S F/S/O FIC LB LP LP/S O PA PCA Placebo SA)

For contribution matrix

netweight y _stderr _t1 _t2

The ifplot command sorts inconsistency factors

set matsize 11000

```
ifplot _y _stderr _t1 _t2 id, lab(ACB AP EA FIC F F/S F/S/O LB LP LP/S O PA PCA Placebo SA)
```

For the egger test and funnel plot

```
network convert pairs

netfunnel _y _stderr _t1 _t2 if _t2=="N"

metabias _y _stderr if _t2=="N",egger
```

For consistency tests

```
network meta c
```

For the node-split analysis

```
network sidesplit
```

For ranking treatments you should type

```
mvmeta, pbest(min, zero all reps(1000) gen(prob))

sucra prob*, mvmeta rankog lab (ACB AP EA FIC F F/S F/S/O LB LP LP/S O PA PCA Placebo SA)
```

To estimate the relative effectiveness between each pair of treatments (league table) type

```
netleague,mvmeta
```

To employ an inconsistency model type

```
network meta i
```

For the meta-regression analyses

```
network setup m sd n, trt(t) stud(id) smd ref(EA)
set matsize 11000
set more off
network meta consistency, eq(_y*:Bupivacaine Ropivacaine)
```

the example above used to tested the difference between bupivacaine and ropivacaine, and for each meta-regression analysis should be adjusted.

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