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Appendix Table #1: Detailed Search Strategy, MEDLINE

Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R) 1946 to August 09, 2019

Search Strategy: August 12, 2019

#	Searches	Results	Annotations
1	Colles' Fracture/	847	
2	((Colles? or typica* or Barton?? or Galeazzi?? or Smith or atypic*) adj1 fractur*).ti,ab,kf,kw.	1626	
3	(Distal adj3 (radius or radial or radii) adj3 fractur*).ti,ab,kf,kw.	4742	
4	or/1-3 [distal radius fracture set]	6298	
5	Radius Fractures/	8799	
6	((radius or radial or radii) adj3 fractur*).ti,ab,kf,kw.	7076	
7	or/5-6 [radius fractures set]	11128	
8	fracture fixation/ or closed fracture reduction/ or fracture fixation, internal/ or fracture fixation, intramedullary/ or open fracture reduction/	57879	
9	internal fixators/ or bone plates/	22491	
10	external fixators/ or casts, surgical/ or splints/	21812	
11	(reduction? or "internal fixat*" or "volar locking plate?" or casting? or immobili?ation*).ti,ab,kf,kw.	1124417	
12	(surgery or therapy).fs. or (treatment* or therap* or surger* or surgical*).ti,ab,kf,kw.	8320483	
13	or/8-12 [treatment set]	8956725	
14	aged/ or "aged, 80 and over"/ or frail elderly/ or middle aged/	4835773	
15	(aged or elderly or "middle age?" or "senior citizen?" or senium).ti,ab,kf,kw.	735871	
16	or/14-15 [aged set]	5170998	
17	randomized controlled trial.pt.	487026	
18	controlled clinical trial.pt.	93207	
19	randomized.ab.	451327	
20	placebo.ab.	199915	
21	therapy.fs.	1784738	therapy.fs. instead of drug therapy.fs
22	randomly.ab.	316067	
23	groups.ab.	1942138	
24	or/17-23	4184310	
25	exp animals/ not humans.sh.	4607646	
26	24 not 25 [Cochrane filter for HSS for trials]	3719269	

27	("31169572" or "25491556" or "22159849").ui. [exemplars]	3
28	and/4,13,16,26 [Distal radius fractures]	1051
29	(and/7,13,16,26) not 28 [Radius fractures set]	393
30	or/28-29 [Final set]	1444
31	30 or 27 [Final set finds exemplars]	1444
32	remove duplicates from 30	1440

Appendix Table #2 - Excluded studies after full text review and reasoning

Title	Authors	Journal	Exclusion Reason
Assessment of Distal Radius Fracture Complications Among Adults 60 Years or Older A Secondary Analysis of the WRIST Randomized Clinical Trial	Chung et al. (2019)	Jama Network Open	Nonrandomized nonoperative group
Volar internal plate fixation versus plaster in displaced extra-articular distal radius fractures: A randomized controlled trial	Mulders et al. (2017)	Journal of Hand Surgery	Published Abstract/Subset of Full Study with No Unique Patients
A prospective randomized trial comparing nonoperative treatment with volar locking plate fixation for displaced and unstable distal radial fractures in patients sixty-five years of age and older	Arora et al. (2012)	Orthopedics	Summary of original publication
[Operative versus non-operative therapy of unstable distal radius fractures in patients elderly 65 years old]	Stengel (2013)	Unfallchirurg	Duplicate publication - published in another journal
The treatment of displaced intra-articular distal radius fractures in elderly patients	Bartl et al. (2014)	Deutsches Arzteblatt International	Duplicate publication - published in another journal;
Surgical versus conservative treatment of distal radius fractures in elderly	Trevisan et al. (2013)	Aging - Clinical and Experimental Research	Review article
Redisplaced unstable fractures of the distal radius: a prospective randomised comparison of four methods of treatment	McQueen et al. (1996)	Journal of Bone and Joint Surgery	Wrong intervention
Outcomes and financial implications of intra-articular distal radius fractures: a comparative study of open reduction internal fixation (ORIF) with volar locking plates versus nonoperative management	Toon et al. (2017)	Journal of Orthopaedics and Traumatology	Nonrandomized prospective study
Internal Plate Fixation vs. Plaster in Complete Articular Distal Radial Fractures	NCT02651779 (2016)	https://clinicaltrials.gov	RCT protocol and final study published separately
Volar Internal Plate Fixation vs. Plaster in Extra- Articular Distal Radial Fractures	NCT02030496 (2014)	https://clinicaltrials.gov	RCT protocol and final study published separately

A Clinical Trial for the Surgical Treatment of Elderly Distal Radius Fractures	Nct, (2012)	https://clinicaltrials.gov/show/study/NCT01589692	Duplicate publication - published in another journal
Distal Radius Fractures in Patients Over 65 Years, Operation or Cast?	NCT02336035 (2015)	https://clinicaltrials.gov	Ongoing Clinical Trial
Outcomes and complications of fractures of distal radius (AO type B and C): volar plating versus nonoperative treatment	Sharma et al. (2014)	Journal of Orthopaedic Science	Wrong age group (<55y)
Predicting Outcomes After Distal Radius Fracture: A 24-Center International Clinical Trial of Older Adults	Chung et al. (2019)	Journal of Hand Surgery	Wrong outcomes
Comparison between cast immobilization versus volar locking plate fixation of distal radius fractures in active elderly patients, the Asian perspective	Chan et al. (2014)	Hand Surgery	Nonrandomized prospective study

Appendix Table #3 – Additional demographic data by study

Study	Average Age VLP/CRC	%Female VLP/CRC	% Dominant Hand VLP/CRC
Arora (2011)	76/77	77.8/73.0	41.7/56.8
Bartl (2014)	75/74	89.5/86.4	NR ¹
Martinez-Mendez (2018)	67/70	78.0/78.7	70.0/63.8
Sirnio (2019)	70/72	93.3/100	NR
Mulders (2019)	67/66	81.0/90.9	52.4/63.6
Saving (2019)	80/78	94.8/87.5	46.6/35.9

¹NR – not reported

Appendix Table #4 - Summary of all reported complications

	Arora (2011)		Bartl (2014)		Martinez-Mendez (2018)		Mulders (2019)		Saving (2019)		Sirnio (2019)	
Complication	VLP ¹	CRC	VLP	CRC	VLP	CRC	VLP	CRC	VLP	CRC	VLP	CRC
Extensor Tendon Rupture	1	0	1	1	1	0	NR ²	NR	NR	NR	NR	NR
Flexor Tendon Rupture	NR	NR	1	1	NR	NR	3	1	1	0	NR	NR
Plate Fixation	NR	NR	NR	NR	NR	NR	NR	NR	0	2	NR	NR
Afib and Myocardial Ischemia	NR	NR	NR	NR	NR	NR	NR	NR	1	0	NR	NR
Corrective Osteotomy	NR	NR	NR	NR	NR	NR	0	4	0	3	NR	NR
Extensor tenosynovitis	5	0	NR	NR	NR	NR	0	0	NR	NR	NR	NR
Flexor Tenosynovitis	4	0	NR	NR	NR	NR	1	1	NR	NR	1	0
Flexor Tenosynovitis requiring Plate removal	4	0	NR	NR	NR	NR	0	0	2	0	NR	NR
Carpal Tunnel Syndrome	1	0	1	2	1	0	0	1	2	5	1	3
Carpal Tunnel Syndrome requiring Carpal Tunnel Release and Plate extraction*	1	0	0	0	1	0	0	0	2	5	1	3
Nerve Numbness	0	0	NR	NR	NR	NR	NR	NR	7	5	NR	NR
Complex Regional Pain Syndrome	2	5	0	1	0	1	1	3	0	2	0	0
Infection	0	0	0	0	0	0	2	1	2	0	0	0
Scar adherence or keloid	NR	NR	1	0	NR	NR	NR	NR	2	0	NR	NR
Dupuytren	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	1
Dequervain	NR	NR	NR	NR	NR	NR	0	1	NR	NR	0	0
Skin Pressure Mark	NR	NR	0	1	NR	NR	NR	NR	NR	NR	NR	NR
Malunion**	0	37	0	37	0	12	0	9	NR	NR	0	10

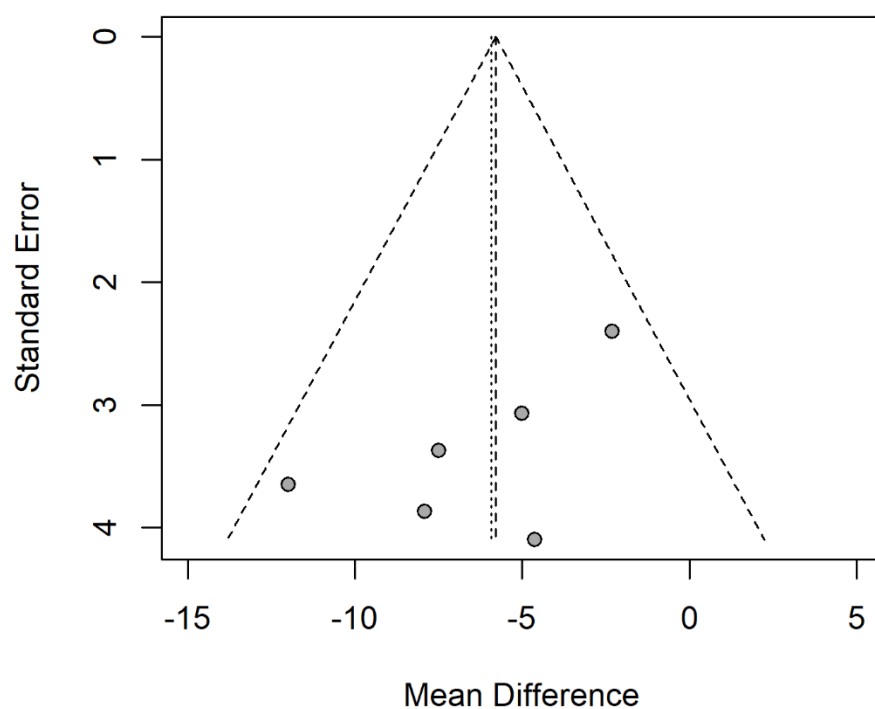
Total Complications	18	5	4	43	3	1	7	12	19	22	4	7
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*Plate Extraction for VLP group

**Malunion definition is provided in appendix

¹VLP (Volar Locking Plate)

²NR (Not Reported)



Appendix Figure I: Funnel Plot