TABLE E-1 Characteristics of Seventy-One Analyses of Thromboprophylaxis After Total Joint Arthroplasty*

Study	Design of Study	Modality in Study Group	Modality in Control Group	Total Number of Evaluated Patients (Study Group/Control Group)	Quantitative Results Regarding Primary Efficacy†	Authors' Conclusion Regarding Modality of Study Group on Primary Efficacy	Relationship Between Quantitative Results and Authors' Conclusion	Qualitative Conclusion
Industry-sponsored studies								
Lachiewicz (2004)[14]	RCT	ASA and PCD1‡	ASA and PCD2	423 (206/217)	0.410 (0.220 to 0.762)	Significantly lower rate of DVT	Concordant	Favorable
Silbersack (2004)[15]	RCT	LMWH and PCD‡	LMWH and GCS	131 (68/63)	NA	More effective	Concordant	Favorable
Eriksson (2004)[16]	Cohort	DTI‡ nine doses	Other doses	225	NA	Dose adjustment, satisfactory antithrombotic potential	NA	Neutral
Pitto (2004)[17]	RCT	PCD	LMWH	200 (100/100)	0.485 (0.118 to 1.994)	$p < 0.05$ statistical error	Discrepant	Favorable
Eriksson (2005)[18]	RCT	DTI‡ four doses	LMWH	1464 (1164/300)	0.742 (0.548 to 1.005)	Dose adjustment, more effective	Discrepant	Favorable
Kearon (2005)[19]	Cohort	ART-123‡ two doses	Other doses	262	NA	Effective	NA	Neutral
Leizorovicz (2005)[20]	Epidemiology	No prophylaxis	—	2420	NA	Not low incidence, thromboprophylaxis should be considered	NA	Favorable
Colwell (2005)[21]	RCT	DTI‡	WFR	1949 (982/967)	0.621 (0.508 to 0.760)	Superior efficacy	Concordant	Favorable
Piovella (2005)[22]	Epidemiology	No prophylaxis	—	295	NA	Common, similar to patients in	NA	Favorable

						Western countries		
Turpie (2005)[23]	RCT	FXaI‡ five doses	LMWH	366 (296/70)	0.567 (0.333 to 0.966)	Dose adjustment, potential efficacy similar to LMWH	Concordant	Neutral
Bonneux (2006)[24]	RCT	FPN‡	LMWH	109 (55/54)	p > 0.05	No significant difference	Concordant	Neutral
Colwell (2006)[25]	RCT	FPN‡ alternate regimen	FPN‡ standard regimen	2000 (997/1003)	0.955 (0.506 to 1.800)	Larger window of time	Concordant	Favorable
Eriksson (2006)[26]	RCT	FXaI‡ five doses	LMWH	618 (511/107)	0.357 (0.213 to 0.600)	Dose adjustment, efficacy similar to LMWH	Concordant	Neutral
Haas (2006)[27]	RCT	FXaI‡	Heparin	1628 (813/815)	0.610 (0.377 to 0.988)	Significantly reduces the risk of VTE	Concordant	Favorable
Senaran (2006)[28]	RCT	LMWH‡	Heparin	100 (50/50)	1.000 (0.135 to 7.392)	As effective as standard heparin	Concordant	Neutral
Eriksson (2006)[29]	RCT	FXaI‡ five doses	LMWH	548 (442/106)	0.813 (0.458 to 1.441)	Compared favorably with LMWH	Discrepant	Favorable
Westrich (2006)[30]	RCT	PCD‡ and LMWH‡	PCD‡ and ASA	264 (135/129)	0.755 (0.389 to 1.464)	Not superior	Concordant	Neutral
Eriksson (2007)[31]	RCT	FXaI‡ six doses	LMWH	466 (359/107)	1.093 (0.616 to 1.940)	Dose adjustment, proof of principle for FXaI	Concordant	Neutral
Lassen (2007)[32]	RCT	FXaI‡ six doses	LMWH/WFR	856 (638/218)	0.349 (0.223 to 0.544)	Dose adjustment, promising benefit-risk profile	Concordant	Neutral
Samama	Case series	Injectable	—	1080	NA	Relatively low	NA	Favorable

(2007)[33]		antithrombotics				incidence of VTE		
Abad (2007)[34]	Case series	LMWH‡	—	1009	NA	Low rates of VTE, makes neuroaxial anesthesia/analgesia procedures easier	NA	Favorable
Agnelli (2007)[35]	RCT	FXaI‡ six doses	LMWH	360 (294/66)	1.183 (0.619 to 2.260)	Dose adjustment, noninferior to LMWH	Concordant	Neutral
Eriksson (2007)[36]	RCT	DTI‡ two doses	LMWH	2651 (1754/897)	1.098 (0.799 to 1.509)	Effective as LMWH	Concordant	Neutral
Leizorovicz (2007)[37]	Epidemiology	No prophylaxis	—	326	NA	High incidence, thromboprophylaxis should be considered	NA	Favorable
Trocóniz (2007)[38]	RCT	DTI‡ nine doses	Other doses	287	NA	Dose adjustment	NA	Neutral
Eisele (2007)[39]	RCT	LMWH and PCD‡	LMWH	1803 (901/902)	0.264 (0.087 to 0.798)	Significantly more effective	Concordant	Favorable
Eriksson (2007)[40]	RCT	FXaI‡ four doses	LMWH	147 (116/31)	0.771 (0.340 to 1.752)	Dose adjustment, effective	Concordant	Neutral
Eriksson (2007)[41]	RCT	DTI‡ three doses	LMWH	1541 (1029/512)	1.034 (0.831 to 1.286)	As effective as LMWH	Concordant	Neutral
Cohen (2007)[42]	RCT	FPN‡ and GCS	FPN‡	795 (395/400)	0.868 (0.462 to 1.631)	Similarly effective	Concordant	Neutral
Lassen (2008)[43]	RCT	FXaI‡	LMWH	1702 (824/878)	0.455 (0.341 to 0.606)	Superior to LMWH	Concordant	Favorable
Edwards (2008)[44]	Cohort	LMWH and PCD‡	LMWH	277 (141/136)	0.311 (0.119 to 0.815)	Significant reduction on rate of DVT	Concordant	Favorable
Eriksson (2008)[45]	RCT	FXaI‡	LMWH	3153 (1595/1558)	0.295 (0.173 to 0.503)	Significantly more effective	Concordant	Favorable
Fuji (2008)[46]	RCT	FPN‡ four	Placebo	1001 (832/169)	0.151 (0.105	Dose	Concordant	Favorable

		doses			to 0.216)	adjustment, favorable benefit-to-risk ratio		
Kakkar (2008)[47]	RCT	FXaI‡	LMWH	1733 (864/869)	0.195 (0.115 to 0.332)	Significantly more effective	Concordant	Favorable
Lassen (2008)[48]	RCT	SR123781A ‡ five doses	LMWH	736 (610/126)	1.533 (0.790 to 2.974)	Dose adjustment, reasonable risk-to-benefit ratio	Concordant	Neutral
Mueck (2008)[49]	RCT	FXaI‡ ten doses	Other doses	758	NA	Dose adjustment, predictable PK and PD	NA	Neutral
Mueck (2008)[50]	RCT	FXaI‡ five doses	LMWH	517	NA	Dose adjustment, predictable PK	NA	Neutral
Otero-Fernández (2008)[51]	Case series	LMWH‡	—	6456	NA	Low rate of VTE	NA	Neutral
Fuji (2008)[52]	RCT	LMWH‡ three doses	Placebo	651 (486/165)	0.438 (0.306 to 0.629)	Dose adjustment, significantly lower risk of VTE	Concordant	Neutral
Turpie (2009)[53]	RCT	FXaI‡	LMWH	1921 (965/956)	0.661 (0.477 to 0.915)	Significantly superior to LMWH	Concordant	Favorable
Turpie (2009)[54]	RCT	FXaI‡ two doses	LMWH	175 (135/40)	1.946 (0.633 to 5.984)	Dose adjustment, well tolerated	Concordant	Neutral
Lassen (2009)[55]	RCT	AVE5026‡ five doses	LMWH	464 (383/81)	0.504 (0.301 to 0.843)	Dose adjustment, adequate benefit-to-risk ratio	Concordant	Neutral
Ginsberg (2009)[56]	RCT	DTI‡	LMWH	1896 (1253/643)	1.416 (1.144 to 1.754)	Inferior efficacy to	Concordant	Unfavorable

						LMWH		
Agnelli (2009)[57]	RCT	DTI‡	LMWH	743 (386/357)	0.691 (0.154 to 3.110)	Similar efficacy but increased risk of liver toxicity	Concordant	Unfavorable
Lassen (2009)[58]	RCT	FXaI‡	LMWH	2287 (1157/1130)	1.017 (0.763 to 1.356)	Favorable benefit-to-risk ratio	Discrepant	Favorable
Colwell (2010)[59]	RCT	PCD‡	LMWH	395 (199/196)	0.984 (0.400 to 2.419)	Significantly less major bleeding with similar rates of VTE	Concordant	Favorable
Eriksson (2010)[60]	RCT	YM150‡ five doses	LMWH	708 (581/127)	1.165 (0.716 to 1.894)	Dose adjustment, comparable efficacy to LMWH	Concordant	Neutral
Fuji (2010)[61]	RCT	FXaI‡	Placebo	445 (356/89)	0.257 (0.157 to 0.421)	Dose adjustment, significant dose-dependent reduction in VTE	Concordant	Neutral
Lassen (2010)[62]	RCT	FXaI‡	LMWH	3866 (1949/1917)	0.350 (0.224 to 0.546)	Lower rate of VTE	Concordant	Favorable
Lassen (2010)[63]	RCT	FXaI‡	LMWH	1973 (976/997)	0.550 (0.438 to 0.691)	More effective	Concordant	Favorable
Raskob (2010)[64]	RCT	FXaI‡	LMWH	774 (630/144)	0.303 (0.206 to 0.444)	Dose adjustment, effective	Concordant	Neutral
Weitz (2010)[65]	RCT	FXaI‡	LMWH	730 (621/109)	1.240 (0.761 to 2.018)	Dose adjustment, effective	Concordant	Neutral
Non-industry-sponsored studies								
Wang (2004)[66]	RCT	Heparin	Indomethac	101 (50/51)	0.417 (0.184	Significantly	Concordant	Favorable

			in/placebo		to 0.945)	low DVT		
Pulido (2004)[67]	Case series	LMWH	—	60	NA	Effective prophylaxis for DVT	NA	Neutral
Westrich (2005)[68]	RCT	ASA and intraop. heparin	ASA and placebo	134 (69/65)	1.243 (0.434 to 3.557)	Strongly supports this protocol	Discrepant	Favorable
Bagaria (2006)[69]	Epidemiology	No prophylaxis	—	147	NA	Incidence of VTE is significantly lower than in the Western population	NA	Unfavorable
Gelfer (2006)[70]	RCT	PCD and ASA	LMWH	121 (61/60)	0.178 (0.056 to 0.566)	More effective than LMWH	Concordant	Favorable
González Della Valle (2006)[71]	Case series	PCD and ASA	—	1947	NA	Low rate of VTE, favorably with other forms of prophylaxis	NA	Favorable
Giannoni (2006)[72]	Case series	LMWH and PCD	—	34	NA	Significantly reduced the incidence of DVT	NA	Favorable
Burnett (2007)[73]	Case series	LMWH	—	290	NA	Less effective, higher complications	NA	Unfavorable
Asnis (2007)[74]	RCT	WFR with nomogram	WFR without nomogram	216 (106/110)	0.858 (0.254 to 2.901)	Effective	Concordant	Neutral
Lachiewicz (2007)[75]	Case series	ASA and PCD	—	599	NA	Confirm the efficacy, recommend this protocol	NA	Favorable
Chandrasekaran (2009)[76]	Cohort	Early ambulation	Late ambulation	100 (50/50)	0.346 (0.128 to 0.936)	Significant reduction in the incidence of VTE	Concordant	Favorable

Barrellier (2010)[77]	RCT	Short prophylaxis	Extended prophylaxis	842 (420/422)	1.738 (0.786 to 3.841)	Extended prophylaxis likely to be the most appropriate strategy	Discrepant	Unfavorable
Pendleton (2010)[78]	Cohort	Standard dosing WFR	Modified dosing WFR	351 (308/43)	NA	Effective	Concordant	Neutral
Yamaguchi (2010)[79]	Case series	FPN	—	101	NA	Significantly reduced	NA	Favorable
Unidentified studies								
Williams (2006)[80]	Cohort	Below-the-knee stocking	Above-the-knee stocking	47 (24/23)	p > 0.05	No statistical difference, preferred by patients	Discrepant	Favorable
Niazi (2006)[81]	Case series	LMWH	—	55	NA	Safe	NA	Neutral
Maezawa (2008)[82]	Cohort	Intraop. heparin	No prophylaxis	48	NA	Recommend this protocol	NA	Favorable
Pitto (2008)[83]	RCT	PCD and ASA	PCD, ASA, and GCS	800 (400/400)	0.814 (0.334 to 1.986)	Does not reduce the efficacy of DVT prophylaxis	Concordant	Neutral
Kimura (2009)[84]	Cohort	Heparin and WFR	Historical control	56 (26/30)	NA	Safe	NA	Neutral

*RCT = randomized controlled trial, ASA = aspirin, PCD = pneumatic compression device, DVT = deep-vein thrombosis, LMWH = low molecular weight heparin, GCS = graduated compression stockings, DTI = direct thrombin inhibitor, NA = not available, WFR = warfarin, FXaI = factor Xa inhibitor, FPN = fondaparinux, PK = pharmacokinetics, PD = pharmacodynamics, and VTE = venous thromboembolism. †Unless otherwise indicated, the values are given as the odds ratio and 95% confidence interval. ‡Sponsor modality.