

Appendix Table 3. Results of the Modeled Analyses of the Costs of Using Low-Molecular-Weight Heparin Compared with Unfractionated Heparin for Treatment of Venous Thromboembolism*

Study, Year (Reference)	Least Costly Strategy	Strategy with Greatest Benefits	Incremental Cost-Effectiveness	Cost Savings	Sensitivity Analysis	Comments
Hull et al., 1997 (115)	Inpatient tinzaparin	Inpatient tinzaparin	Tinzaparin dominates	\$401 per person with tinzaparin, (11% savings)	Robust to all 1-way analyses; when cost of tinzaparin is 5.8 times base cost it is not cost-saving	If 37% of patients are treated as outpatients, cost saving of \$913 per person
Rodger et al., 1998 (118)	Outpatient LMWH if eligible and inpatient LMWH if not	Either LMWH inpatient or outpatient LMWH if eligible and inpatient LMWH if not	LMWH dominates whether outpatient or inpatient	\$767 per person with LMWH outpatient/inpatient relative to UFH (23% savings)	Using "worst-case" estimates, cost-effectiveness of inpatient LMWH relative to inpatient UFH is \$25 667 per life saved at 3 mo	If one assumes equivalent efficacy and safety in all arms, LMWH is cheaper to deliver in any setting and dominates
Gould et al., 1999 (14)	Inpatient UFH	Inpatient enoxaparin	\$6910 per LY or \$7820 per QALY with enoxaparin	Cost-saving when 8% of enoxaparin-treated patients are outpatients, or when 13% have an early discharge; sensitive to frequency of late complications, robust to other variables	Robustly cost-effective; becomes cost-saving if LMWH-treated patients are outpatients	
Estrada et al., 2000 (112)	Outpatient LMWH and inpatient UFH	Outpatient and inpatient LMWH	\$9600 per recurrence averted; \$80 000 per death averted with outpatient/inpatient LMWH relative to LMWH outpatient	\$310 per person for LMWH outpatient and inpatient relative to UFH (10% savings)	Sensitive to the percentage of patients eligible for outpatient therapy; if fewer than 14%, UFH lower cost than LMWH outpatient/inpatient; model sensitive to costs of UFH	Lower costs primarily due to saving hospitalization costs
Lloyd et al., 1997 (116)	Inpatient nadroparin	Assumed to be equivalent for model	NA	\$153 per person with nadroparin (57% savings)	Robust to all 1-way analyses; cost-savings less if nadroparin-treated patients are required to have APTT measurement	
van den Belt et al., 1998 (114)	Outpatient fraxaparine	Assumed to be equivalent for model	NA	5528 Dutch guilders per person with fraxaparine (64% savings)	Fraxaparine is cost-saving even if 50% of patients require home care visits; cost-saving even if 50% require inpatient care	
O'Brien et al., 1999 (117)	Outpatient enoxaparin	Higher social functioning on SF-36 with enoxaparin, otherwise no difference in health-related quality-of-life measures or events	NA	\$3045 per person with enoxaparin (57% savings)	Robust to all 1-way analyses	
DeLissovoy et al., 2000 (109)	Not stated	Inpatient enoxaparin twice daily; fewest readmissions for recurrent DVT and for all causes	NA	None	Robust to all 1-way analyses	Blood testing and costs of medication offset by fewer readmissions with enoxaparin
Tillman et al., 2000 (119)	Outpatient enoxaparin	Unknown	NA	\$2828 per person with enoxaparin (60% savings)	Enoxaparin not cost-saving if drug cost increases 750% or hospitalization costs drop 77%	Rates of events in the UFH arm not explicitly stated
Boucher et al., 2003 (121)	Outpatient LMWH	Assumed to be equivalent for model	NA	\$1578 Canadian per person with outpatient treatment (91% savings)	"Worst-case scenario," 87% savings with outpatient treatment	Acknowledges that some of the savings is shifted to patients who must purchase LMWH

Continued on following page

Appendix Table 3—Continued

Study, Year (Reference)	Least Costly Strategy	Strategy with Greatest Benefits	Incremental Cost-Effectiveness	Cost Savings	Sensitivity Analysis	Comments
Caro et al., 2002 (122)	Outpatient tinzaparin	Outpatient tinzaparin	Tinzaparin dominates	\$5016 per person with outpatient treatment (49% savings); short-term costs only \$4890 (34% with inclusion of subsequent costs)	Tinzaparin is cost-saving even if all patients are treated as inpatients, or if price is increase up to 2.8 times; robust to varying management costs, discount rate, and event rates up to a 55% increase in rates	Suggests that strong results favoring tinzaparin are due to tinzaparin's superior efficacy relative to that of other LMWHs, although based on only 1 trial
Avritscher et al., 2004 (120)	Dalteparin	Assumed to be equivalent for model	NA	\$1569 per person with dalteparin (32% savings)	Robust in all 1-way analyses; costs of dalteparin would need to increase 5-fold to match costs of UFH	Savings from shorter hospital stays, lower laboratory costs, less intensive monitoring, some cost-shifting after discharge
Aujesky et al., 2005 (110)	Inpatient UFH	Inpatient LMWH	\$1209 per QALY favoring LMWH	None	Robust to all 1-way analyses, cost-saving if LMWH costs <\$51 daily; cost-saving if 8% of LMWH are discharged early	
Gómez-Outes et al., 2006 (111)	Inpatient bemparin followed by long-term bemparin	Inpatient bemparin followed by oral anticoagulant	Both bemparin arms dominate over the UFH arm	\$769 A vs. C (19% savings) \$908 B vs. C (22% savings)†	Robust in all 1-way analyses, most sensitive to rate of recurrence	Savings mostly due to lower hospital-stay costs

* APTT = activated partial thromboplastin time; DVT = deep venous thrombosis; LMWH = low-molecular-weight heparin; LY = life-year; NA = not available; QALY = quality-adjusted life-year; SF-36 = Short Form-36 Health Survey; UFH = unfractionated heparin.

† A = inpatient bemparin (115 U/d) and oral anticoagulant; B = inpatient bemparin (115 U/d) and long-term bemparin; C = inpatient UFH and oral anticoagulant.