

Comparative safety of anesthetic technique for hip fracture surgery in adults

APPENDIX

Table A1. Selected baseline characteristics of patients with and without conclusive information on anesthesia type. Values are numbers (percentages) unless stated otherwise

	General anesthesia N = 61,554	Regional anesthesia N = 6,939	General and regional anesthesia N = 4,791	No conclusive information on anesthesia N = 32,149
Personal characteristics				
Age, median (IQR)	82 (74, 88)	83 (77, 88)	83 (76, 88)	83 (75, 88)
18-54 years	2235 (3.6)	99 (1.4)	88 (1.8)	961 (3.0)
55-69 years	8224 (13.4)	681 (9.8)	531 (11.1)	3920 (12.2)
70-79 years	13941 (22.6)	1581 (22.8)	1107 (23.1)	7116 (22.1)
80-84 years	12830 (20.8)	1540 (22.2)	1026 (21.4)	7018 (21.8)
≥85 years	24324 (39.5)	3038 (43.8)	2039 (42.6)	13134 (40.9)
Female sex	43527 (70.7)	5063 (73.0)	3429 (71.6)	22972 (71.5)
Ethnicity:				
White	48768 (79.2)	5068 (73.0)	4084 (85.2)	22652 (70.5)
Black	2949 (4.8)	211 (3.0)	247 (5.2)	812 (2.5)
Hispanic	1938 (3.1)	594 (8.6)	39 (0.8)	591 (1.8)
Other or unknown	7899 (12.8)	1066 (15.4)	421 (8.8)	8094 (25.2)
Hospitalization and surgery characteristics				
Type of admission:				
Emergency room	34852 (56.6)	4322 (62.3)	2676 (55.9)	18848 (58.6)
Non-healthcare facility	18554 (30.1)	1817 (26.2)	1342 (28.0)	9005 (28.0)
Other	8148 (13.3)	800 (11.5)	773 (16.1)	4296 (13.4)
Calendar year				
2007	3805 (6.2)	536 (7.7)	267 (5.6)	2335 (7.3)
2008	14364 (23.3)	1865 (26.9)	1227 (25.6)	8125 (25.3)
2009	15204 (24.7)	1650 (23.8)	1306 (27.3)	8061 (25.1)
2010	16117 (26.2)	1693 (24.4)	1188 (24.8)	7758 (24.1)
2011	12064 (19.6)	1195 (17.2)	803 (16.8)	5870 (18.3)
Length of stay, median (IQR)	6 (5, 8)	6 (5, 8)	6 (5, 8)	6 (5, 8)
Days before surgery, median (IQR)	1 (1, 2)	1 (1, 2)	1 (1, 2)	1 (1, 2)
Type of surgical procedure:				
Closed reduction of fracture	14359 (23.3)	1483 (21.4)	1047 (21.9)	6655 (20.7)
Open reduction of fracture	21541 (35.0)	2398 (34.6)	1470 (30.7)	12394 (38.6)
Total hip replacement	2622 (4.3)	297 (4.3)	232 (4.8)	1478 (4.6)
Partial hip replacement	23252 (37.8)	2790 (40.2)	2067 (43.1)	11733 (36.5)

Other hip procedure	3598 (5.9)	362 (5.2)	336 (7.0)	2277 (7.1)
Comorbidities				
Type of fracture:				
Transcervical fracture	15951 (25.9)	1974 (28.4)	1332 (27.8)	8424 (26.2)
Intertrochanteric fracture	26874 (43.7)	2988 (43.1)	1941 (40.5)	13625 (42.4)
Subtrochanteric fracture	3831 (6.2)	365 (5.3)	243 (5.1)	2026 (6.3)
Trochanteric fracture	1299 (2.1)	152 (2.2)	106 (2.2)	715 (2.2)
Unspecified part of neck of femur	23754 (38.6)	2680 (38.6)	1978 (41.3)	13178 (41.0)
Pathologic fracture of neck of femur	1813 (2.9)	168 (2.4)	111 (2.3)	815 (2.5)
Charlson comorbidity score, median (IQR)	1 (0, 2)	1 (0, 2)	1 (0, 2)	1 (0, 2)
Inpatient use of drugs and services before surgery				
Angiotensin converting enzyme inhibitor	8937 (14.5)	933 (13.4)	673 (14.0)	4309 (13.4)
β -blocker	21362 (34.7)	2258 (32.5)	1582 (33.0)	10635 (33.1)
Anti-diabetic drugs	9043 (14.7)	919 (13.2)	664 (13.9)	3969 (12.3)
Aspirin	4166 (6.8)	393 (5.7)	355 (7.4)	2210 (6.9)
Intravenous heparin	900 (1.5)	81 (1.2)	61 (1.3)	506 (1.6)
Intensive care unit admission	4767 (7.7)	432 (6.2)	259 (5.4)	1727 (5.4)
Packed red blood cells transfusion:				
0 unit	55024 (89.4)	6393 (92.1)	4290 (89.5)	28667 (89.2)
1 unit	2010 (3.3)	202 (2.9)	139 (2.9)	1197 (3.7)
≥ 2 units	4520 (7.3)	344 (5.0)	362 (7.6)	2285 (7.1)
Hospital characteristics				
Teaching hospital	22114 (35.9)	1318 (19.0)	1273 (26.6)	11195 (34.8)
Urban hospital	54790 (89.0)	5805 (83.7)	3650 (76.2)	27849 (86.6)
Hip fracture surgery volume				
High volume	38278 (62.2)	4028 (58.0)	2741 (57.2)	22353 (69.5)
Medium volume	18369 (29.8)	1915 (27.6)	1710 (35.7)	7474 (23.2)
Low volume	4907 (8.0)	996 (14.4)	340 (7.1)	2322 (7.2)

Table A2. Number of events and risk of inhospital mortality in patients with and without conclusive information on anesthesia type

	General anesthesia	Regional anesthesia	General and regional anesthesia	No conclusive information on anesthesia
N patients	61,554	6,939	4,791	32,149
N in-hospital deaths	1,362	144	115	740
Risk of in-hospital death %	2.2	2.1	2.4	2.3
Unadjusted analysis Risk ratio (95% CI)	Ref.	0.94 (0.79 to 1.11)	1.09 (0.90 to 1.32)	1.04 (0.95 to 1.14)