The Monitored Anesthesia Care and Soft-Tissue Infiltration with Local AAC-STILA) Technique Decreases Incidence of Short-Term Postoperative Altered Mental Status in Older Hip Fracture Patients

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Purpose: The purpose was to compare the incidence of short-term postoperative altered mental status (AMS) of geriatric patients undergoing operative repair of hip fractures under the Monitored Anesthesia Care and Soft-Tissue Infiltration with Local Anesthesia (MAC-STILA) technique in comparison to general anesthesia (GA).

Methods: A consecutive series of hip fracture (OTA 31A and 31B) patients who underwent operative repair at one of four hospitals within a single academic medical center were identified from a prospective database. A cohort of patients who received GA underwent propensity matching to a cohort of patients who received MAC-STILA in a 2:1 ratio based on age, sex, body-mass index (BMI), American Society of Anesthesiologists (ASA) score, baseline ambulatory status, preoperative assistive device, fracture pattern, implant type, and hospital. The MAC-STILA and general cohort of patients were compared using standard methods over the following parameters: Charlson comorbidity index (CCI), intraoperative vital signs (systolic and diastolic blood pressure [BP], respiratory rate [RR], and heart rate [HR]), and postoperative AMS up to 3 days postoperatively. A logistic regression model was used to evaluate the difference in incidence of AMS between cohorts when controlling for patient age, baseline ambulatory status, ASA, CCI, and preoperative mental status. Permutation testing was used to confirm the results.

Results: 79 MAC-STILA patients were compared to 158 GA patients. GA patients had significantly higher CCI (2.1 ± 1.9 vs 1.6 ± 1.6, P<0.001). MAC-STILA patients maintained higher minimum intraoperative systolic (96.4 ± 18.4 vs 83.4 ± 16.2, P<0.001) and diastolic BP (52.9 ± 9.7 vs 45.2 ± 10.6, P<0.001) , but minimum (60.8 ± 8.9 vs 63.4 ± 13.1, P = 0.079) and maximum (107.8 ± 21.2 vs 168.8 ± 834.6, P = 0.361) hazard ratios were not significantly different between the groups. There was no difference in postoperative visual analog scale (VAS) pain scores, postoperative ambulation, or postoperative complications including hypotension, shock, pneumonia, deep vein thrombosis, urinary tract infection, anemia, respiratory failure, cardiac arrest, and inpatient mortality. Multivariate logistic regression demonstrated that MAC-STILA patients were associated with 85% lower odds of AMS on postoperative days 0 to 3 compared to GA patients (P = 0.003).

Conclusion: The MAC-STILA technique is associated with lower odds of short-term postoperative AMS compared to GA in hip fracture patients undergoing operative repair.

POSTER ABSTRACTS

MAC-STILA versus Spinal Anesthesia for Treatment of Proximal Femur Fractures

| Characteristic | Overall N = 118[1] | Anesthesia Type | | p-value[2] |
		MAC-STILA N = 80[1]	Spinal N = 38[1]	
Age (years)	80.7 +/- 10.9	82.8 +/- 10.5	76.4 +/- 10.4	**0.003**
Sex				0.362
F	77 (65.3%)	50 (62.5%)	27 (71.1%)	
M	41 (34.7%)	30 (37.5%)	11 (28.9%)	
BMI	24.2 +/- 4.8	24.4 +/- 5.0	23.9 +/- 4.4	0.610
ASA				**<0.001**
0	2 (1.7%)	2 (2.5%)	0 (0.0%)	
1	3 (2.5%)	0 (0.0%)	3 (7.9%)	
2	22 (18.6%)	9 (11.2%)	13 (34.2%)	
3	63 (53.4%)	52 (65.0%)	11 (28.9%)	
4	27 (22.9%)	16 (20.0%)	11 (28.9%)	
5	1 (0.8%)	1 (1.3%)	0 (0.0%)	
Baseline ambulatory status				0.714
Community ambulator	78 (66.1%)	52 (65.0%)	26 (68.4%)	
Household ambulator	40 (33.9%)	28 (35.0%)	12 (31.6%)	
Baseline assistive device	76 (64.4%)	60 (75.0%)	16 (42.1%)	**<0.001**
Length of stay (days)	6.6 +/- 4.9	6.7 +/- 5.1	6.4 +/- 4.5	0.731
Discharge setting				0.710
Home	29 (25.7%)	19 (25.0%)	10 (27.0%)	
Long-term care	3 (2.7%)	3 (3.9%)	0 (0.0%)	
SAR	81 (71.7%)	54 (71.1%)	27 (73.0%)	
Any complication	51 (43.2%)	31 (38.8%)	20 (52.6%)	0.155
30-day mortality	9 (7.6%)	8 (10.0%)	1 (2.6%)	0.268
30-day readmission	13 (11.0%)	10 (12.5%)	3 (7.9%)	0.545
VAS on POD1	4.2 +/- 3.3	3.6 +/- 3.7	5.0 +/- 2.4	**0.026**

[1] Mean +/- SD; n (%)
[2] Welch Two Sample t-test; Pearson's Chi-squared test; Fisher's exact test

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