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Evaluation of Postoperative Complications, Length of Stay, and Discharge Disposition Following Single-Level Anterior Lumbar Interbody Fusion in Elderly and Octogenarian Patients

Purpose: This study aims to evaluate postoperative complications, length of stay (LOS), and discharge disposition
following ALIF across different age groups.
Methods: A total of 92,800 weighted cases of patients aged 50 and older who underwent single-level ALIF in the
National Inpatient Sample (NIS) from 2016 to 2020. Patients were stratified into age cohorts (50-64, 65-79, 80+).
Exclusions were made for non-elective cases and missing data on key variables. Primary outcomes included postoperative complications (anemia, DVT, myocardial infarction, stroke, acute kidney injury, sepsis, anesthesia-
related complications), LOS, and discharge disposition. Statistical analyses were conducted using chi-square tests,
with a Bonferroni correction applied, and a level of statistical significance set at 0.005.
Results: The study identified significant variations in outcomes across age groups. The mean age differed significantly ($P < 0.001$). Older patients had higher rates of comorbidities and complications, with acute post-
hemorrhagic anemia being most prevalent in the 65-79 group (16.78%) and sepsis more common in the 80+ group
(0.90%). The LOS increased with age ($P < 0.001$), and total admission charges were highest in the 65-79 age group
($P = 0.004$). Routine discharge rates decreased significantly with age, while non-routine discharges increased ($P <$
0.001).
Conclusion: Age significantly influences postoperative outcomes following ALIF. Patients aged 65 and older are at
increased risk for various complications, longer hospital stays, and non-routine discharges. These findings highlight
the need for tailored perioperative care and robust discharge planning to improve outcomes for elderly patients
undergoing ALIF.