

The Impact of Liver Disease on Short-term In-Hospital Outcomes in Patients undergoing Total Knee Arthroplasty

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Background

Total Knee Arthroplasty (TKA) is an increasingly common procedure done in the US. Wound healing and complications from surgery are known to be affected by liver disease due to decreased clotting factor production and altered function of hepatic reticuloendothelial cells. However, there's little data on the effect of liver disease on in-hospital outcomes in patients undergoing TKA. The purpose of this study was to investigate age of admission, length of stay (LOS), in-hospital charges, and rate of mortality of patients who received a TKA when they had a known liver disease.

Methods

This retrospective cohort study utilized the Nationwide Inpatient Sample to identify patients (18+) from 2012-2015 with a primary procedural history of TKA. ICD-9 codes were used to identify patients with liver disease, and exclude patients with missing identifiers (age, gender, death). Data analyses assessed hospital age of admission, LOS, total hospital charges, and rate of mortality. Statistical analysis was performed using chi-square and independent sample t-tests.

Results

We identified a total of 482,462 patient encounters during the study who underwent TKA. 3624 (0.8%) had a diagnosis of liver disease. Patient encounters with underlying liver disease had a significantly lower age of admission (60.7yrs vs 62.8yrs; $p < .001$), and significantly higher LOS (3.81 days vs 3.34 days; $p < .001$), total hospital charges (\$55,716.14 vs \$52,189.46; $p < .001$), and rate of mortality (.63% vs .42%; $p < .05$).

Conclusion

In TKA patients with liver disease, age of admission was significantly lower, while LOS, total hospital charges, and rate of mortality were significantly higher in TKA patients without liver disease. Physicians should be cognizant and consider careful perioperative planning. Electrolyte and nutritional abnormalities should be corrected to help reduce negative outcomes. Special care should be taken in monitoring liver function before, during, and after the procedure.

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The authors have no conflicts of interest to disclose.