Early Intervention in Cauda Equina Syndrome for Better Outcomes: Myth or Reality? United States National Inpatient Sample (NIS) Database Analysis 2002-2011

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Introduction

Aim of the study was to determine if timing of intervention in the management of Cauda Equina syndrome (CES) had an impact on patient outcomes.

Methods

Analysis of patients in the NIS database undergoing surgical management for CES between 2002-2011was performed. Effect of early management (Group A: <24 hours vs >24 hours; Group B: <48 hours vs >48 hours) on mortality, unfavorable discharge, prolonged length of stay(LOS), and high-end hospital charges were investigated. Group A and B were analyzed separately.

Results

12,374 patients underwent surgery (Group A: 11,478 patients; Group B: 12,107 patients) for CES between 2002-2011. In group A, mortality rate (0.5% vs. 1.0%), unfavorable discharge (32.4% vs. 34.6%), prolonged LOS (23.4% vs. 27.6%) and hospital charges ($76655 vs. 79603) were slightly higher in patients undergoing intervention post 24 hours. Multivariable regression model showed no difference in mortality (OR: 2.353, 95% CI: 0.524-10.565; p=0.063), unfavorable discharge (OR: 1.106, 95% CI: 0.949-1.289; p=0.199), high-end charges (OR: 1.077, 95% CI: 0.921-1.260; p=0.353) and venous thromboembolism (VTE) (OR: 1.315, 95% CI: 0.975-1.773; p=0.073) in patients undergoing surgery post 24 hours; prolonged LOS was

In group B, mortality rate (0.5% vs. 0.7%), unfavorable discharge (32.5% vs. 34.5%), prolonged LOS (23.8% vs. 24.0%) and hospital charges ($76,793 vs. 80,284) were higher in patients undergoing intervention post 48 hours admission. Multivariable regression model showed no difference in mortality (OR: 1.424, 95% CI: 0.336-6.028; p=0.631), unfavorable discharge (OR: 1.115, 95% CI: 0.849-1.419; p=0.435), prolonged LOS (OR: 0.96, 95% CI: 0.71-1.30; p=0.795), high-end charges (OR: 1.273, 95% CI: 0.969-1.674; p=0.083), and VTE (OR: 1.451, 95% CI: 0.874-2.408; p=0.150) between the two groups in Group B.

Conclusions

NIS-database analysis does not show any statistical evidence of better outcomes, length of stay or cost effectiveness of early intervention vs. late intervention.