

Impact of Anxiety and Mood Disorders on the Development of Complex Regional Pain Syndrome Following Fractures in Pediatric Patients: A Propensity Matched Cohort Analysis

Pooya Hosseinzadeh, David A Momtaz, Jad Jack Lawand, Blaire Christine Peterson, Daniel E Pereira¹, Abdullah Ghali, Rohit Siddabattula, Mahara Mohseni

¹Department of Orthopedics

INTRODUCTION:

Complex regional pain syndrome (CRPS) is a debilitating condition that can arise after fractures, particularly impacting the pediatric population. The interplay between anxiety and mood disorders and the risk of developing CRPS post-fracture remains underexplored. This study aims to investigate the impact of anxiety and mood disorders on the incidence of CRPS following fractures in children and adolescents.

METHODS: Using a large national database in the United States, we conducted a retrospective cohort study using data from January 2003 to March 2023, encompassing pediatric patients (<18 years) who sustained fractures. The cohort consisted of 83,342 patients, divided into those with lower and upper fractures. Each group was further stratified into those with anxiety and mood disorders (AMD) and those without (No-AMD), with a 1:1 matching based on fracture type. The primary outcome was the development of CRPS within a two-year follow-up period. Statistical analysis included risk ratio calculations and 95% confidence intervals to determine the association between AMD and CRPS.

RESULTS: In the upper fracture group, the incidence of CRPS was significantly higher in the AMD cohort (0.14%) compared to the No-AMD cohort (0.021%) with a risk ratio of 6.67 (95% CI, 4.17 to 8.42; $p < 0.0001$). Similarly, in the lower fracture group, the incidence of CRPS was higher in the AMD cohort (0.37%) versus the No-AMD cohort (0.035%) with a risk ratio of 10.61 (95% CI, 8.35 to 12.71; $p < 0.0001$). The study sample's demographic characteristics showed a mean age of 12.61 years ($SD \pm 3.56$), with a balanced distribution across gender and race.

DISCUSSION AND CONCLUSION:

Our findings indicate that anxiety and mood disorders significantly increase the risk of developing CRPS in pediatric patients following fractures. This study highlights the need for careful monitoring and management of psychological conditions in children with fractures to mitigate the risk of CRPS. These insights can guide clinical practices and improve outcomes in pediatric fracture care.

