Seasonal Trends in Operative Pediatric Supracondylar and Femur Fractures at a Pediatric Level 1 Trauma Center

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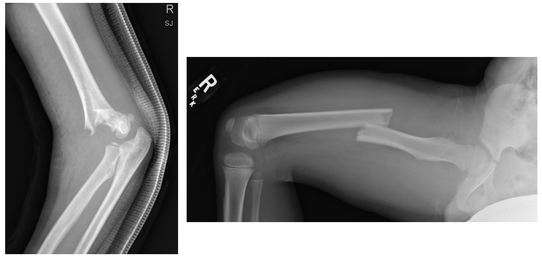
BACKGROUND

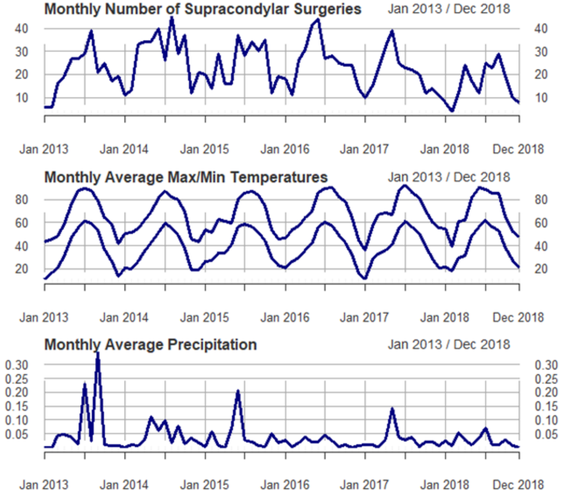
- Supracondylar humerus and femoral shaft fractures are two common injuries managed by pediatric trauma centers.
- While anecdotally we see an increase in many injuries with warmer weather, no studies in the United States have evaluated this subjective trend.
- The purpose of this study was to describe the seasonal variation in the incidence of operative pediatric supracondylar humerus and femur fractures.

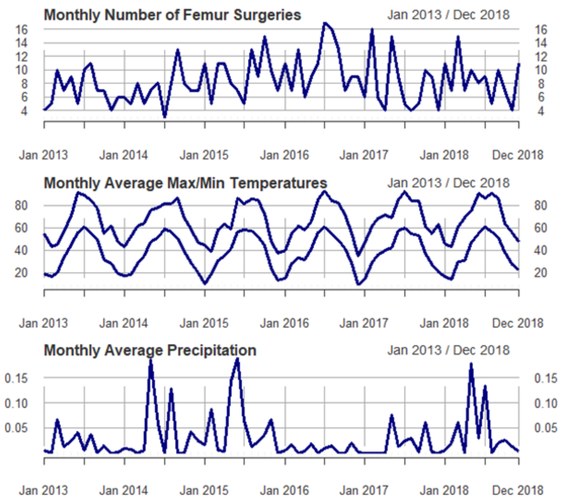


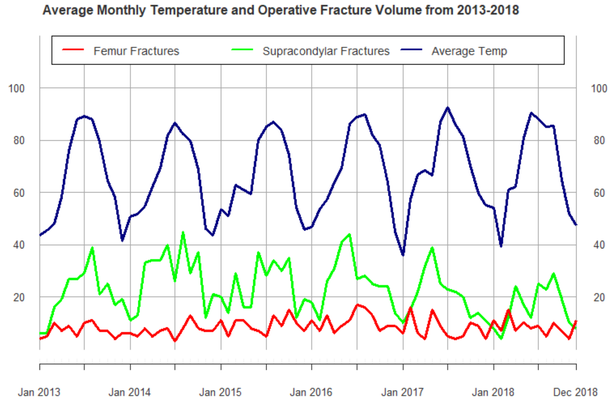
METHODS

- IRB-approved, retrospective review of 1626 supracondylar humerus and 607 femur fractures treated operatively between 2012 and 2018 at a single level 1 pediatric trauma center.
- Dates of injury were identified as weekday versus weekend, and temperature and precipitation data was obtained through the National Weather Service.

RESULTS







- Supracondylar humerus and femur fractures account for 6-25% of orthopedic admissions
- For every 10ºF increase in temperature, there was a 10% increased likelihood of femur fracture and 25% increased likelihood of supracondylar humerus fracture (p=0.03 and p=<0.0001 respectively)
- Femur fractures less likely to occur on weekdays compared to weekends (OR 0.65, p=0.0001) and on days with precipitation (OR 0.39, p= 0.03)
- Supracondylar humerus fractures demonstrated no significant weekly or precipitation-related trends

CONCLUSIONS

- As often anecdotally reported, supracondylar humerus fracture volumes mirror temperature variations annually.
- Femur fractures appear to have more complex trends, with higher volumes on weekends regardless of season.
- Geographic variation in temperature, precipitation and proximity to seasonal activities such as snow skiing may contribute to injury volumes.

IMPLICATIONS

- Given the large relative burden of trauma on orthopedic admissions, further understanding of seasonal trends in pediatric orthopedic injuries can provide valuable information to develop strategies for more efficient resource allocation at pediatric trauma centers.

DISCLOSURES

None