

AB148. Transfer-time dependent mortality analysis of odontoid fractures: a retrospective review

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Background: Management of odontoid fractures has often resulted in undesirable outcomes, with high rates of complications and mortality reported for both the conservative and operative approach. The purpose of this study is to assess how transfer-time affects mortality rates in patients managed non-operatively.

Methods: A retrospective review was performed at our institution for patients that presented between 22nd June 2016 and July 31st 2019 with an odontoid fracture. Patients were categorized into two cohorts, with 72 hours implemented as the baseline for distinguishing early and late cohorts. Demographic characteristics and clinical

parameters were collated and compared. Additionally, Kaplan-Meier survival analyses and Cox proportional hazard regression were performed to address survival function.

Results: One hundred and thirty-four patients were identified (early cohort-98, late cohort-36). No statistical significance existed between groups for demographic characteristics or clinical parameters for general comparative analysis. An increased mortality trended towards significance in the late group ($P=0.08$). When subject to univariate survival analysis, the presence of comorbidities listed on the Charlson Comorbidity Index (CCI) proved statistically significant in influencing mortality rates in the late cohort ($HR=3.50$, $P=0.04$, $CI: 1.06, 11.50$).

Conclusions: This is the first study that highlights the importance of transfer-time on overall survival rates in odontoid fractures. The authors recommend that patients with significant comorbidities (such as those listed on the CCI) of whom suffer an odontoid fracture, are referred for treatment to a spinal injuries unit or appropriate department within 72 hours in order to reduce the potential risk of increased mortality associated with a delayed transfer-time.

Keywords: Cervical spine; odontoid fractures; spine surgery

doi: 10.21037/map.2020.AB148

Cite this abstract as: McDonnell JM, Ahern DP, Kelly E, Butler J. Transfer-time dependent mortality analysis of odontoid fractures: a retrospective review. *Mesentery Peritoneum* 2020;4:AB148.