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Abstract Title: The Role of Whiplash Associated Disorders (WAD) on Concussion Recovery: A Retrospective Study

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ABSTRACT:

Abstract Theme: Mild TBI / Concussion

Topic(s) of Interest: Clinical Research

Purpose of Project: The overall purpose of our study was to examine the effect of WAD on concussion outcomes among adults evaluated within 7 days of injury and followed generally up to 8 weeks post-injury, but longer if deemed necessary by the clinician. We hypothesized that adults deemed to also have a neck injury would have a greater total symptom rating at initial evaluation and longer time until recovery.

Methods, Procedure, Results/Outcome, Conclusion: The study design is a retrospective study based on collected data from individuals seen through the Hull-Ellis Concussion and Research Clinic, a specialized, multi-disciplinary clinic at Toronto Rehabilitation Institute. Patients with acute concussion are referred from six partnered Emergency Departments. The authors analyzed the charts of the individuals that were admitted to the clinic between July 2019 and March 2020. Individuals are eligible for care and research participation at the Hull-Ellis Clinic if they are diagnosed with a concussion at one of the participating EDs and can be assessed by a Hull-Ellis physician within 7 days of their injury. Following this, a physician reassesses individuals in 1 week and every 2 weeks, thereafter, until usually 8-weeks post-injury, but longer if clinically indicated. The presence of WAD was determined by the presence of neck pain, with or without cervicogenic headaches, and cervical spine tenderness or restricted range of motion on physical examination by a clinic physician.

82 medical files were reviewed retrospectively. 19 cases were excluded due to missing data and 63 cases were included in the study. 25 (40%) patients included were deemed to have a concurrent WAD. The WAD group had an increased proportions of females (76%) compared to the no WAD group. The WAD group presented with higher symptom severity (mean of 59/132 (SD 32) versus 39/132 (SD 26) for the no WAD group) and number of symptoms (mean of 18/22 (SD 5) versus 15/22 (SD 6) for the no WAD group) on the SCAT5 on initial assessment. By the end of the follow-up, on average 11 days longer for patients with WAD, fewer individuals with WAD had recovered from their concussion than those without WAD (44% with WAD versus 66% without WAD).

Our findings show that the combination of both concussion and neck symptoms can result in an overall greater frequency and intensity of initial symptoms compared to those that do not have a concomitant WAD. Thus, a longer duration is required for recovery of all injury-related symptoms. As emerging research suggests that neck treatment aids concussion recovery, recognition of cervical injury in tandem with a diagnosed concussion soon after injury may facilitate earlier referral to appropriate rehabilitation and may enhance individualized concussion management strategies.