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Factors Associated with Depression Risk in Post-Concussive Syndrome Patients in Hawaii

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Background: Post-Concussion Syndrome (PCS) describes symptoms persisting beyond the typical recovery period for mild traumatic brain injury (mTBI). While a confirmed correlation between mTBI and depression risk exists, literature investigating risk factors for depression in the context of PCS (DPCS) remains scarce. This study aims to assess patient demographics, concussion etiologies, clinical course, substance use, and medication use associated with DPCS risk.

Methods: This single-center, retrospective study included patients diagnosed with PCS between January 2020 and January 2023. Data comprised demographics, concussion etiology, loss of consciousness (LOC) following injury, PCS symptoms, Patient Health Questionnaire (PHQ)-2/PHQ-9 surveys, and substance and CNS-active medications pre- and post-PCS diagnosis. Statistical analysis involved Fisher's exact tests and Wilcoxon rank sum tests.

Results: Of the initial 297 patients, 82% received depression screening, with 31% exhibiting higher DPCS risk based on PHQ-2 scores. The following factors were associated with increased risk: Patients with an unspecified LOC duration (p=0.037); patients presenting with confusion (p=0.014), insomnia (p=0.035), or memory loss (p=0.003) at PCS diagnosis; pre-TBI tobacco use (p=0.039), pre- (p=0.003) and post-TBI marijuana use (p=0.009); and patients who used selective serotonin reuptake inhibitors (p=0.005), serotonin-norepinephrine reuptake inhibitors (p=0.010), atypical antidepressants (p=0.040), or mood stabilizers (0.022) pre-TBI or atypical antidepressants (p=0.005) post-TBI.

Conclusions: This study highlights several risk factors for DPCS, which may inform improved PCS patient management and emphasizes the need for standardized screening protocols for DPCS.