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| **Title:**  Overview of the Etiologies & Outcomes of Traumatic Brain Injury in Different Pediatric Age Groups before and during the COVID-19 Pandemics  **Authors:**  Liu Jian Feng1, Chow Shuk Wan Joyce2, Cheung Fung Ching3  **Institution(s):**  1Department of Neurosurgery, Queen Elizabeth Hospital (QEH), Hong Kong.  **Abstract:**  **Objective:** 1) to identify the common etiologies of traumatic brain injury (TBI) in different pediatric age groups; 2) to compare causes of pediatric TBI before and during the COVID-19 period; 3) to identify the surgical outcomes of those who underwent an emergency operation because of their head injury  **Method:** This is a retrospective review by selecting pediatric patients admitted with a TBI to QEH from 2016 to 2020. We divide them into different age groups, including neonates (0 month-1 month), infants (1 month-1 year), toddler (1-3 years), pre-school (3-6 years), school-age (6-12 years), and adolescent (12-18 years), and review their admission notes, discharge summary, and outpatient follow-up documents. Their data were entered into an excel spreadsheet. Frequency and percentages are used to present the categories variable. For the outcome analysis, we use Glasgow Outcome Score (GOS) as the primary outcome, while the secondary outcome to be the length of the hospital stay.  **Result:** (preliminary result based on data in 2020, please see remarks)  A total of 156 patient’s data was retrieved from the CDAS system. The most common cause of TBI in infants (n = 31) and toddler (n = 38) groups was ‘fall from bed’ and occupied 58% and 43% respectively. Compared to pre-school kids (n=33), TBI was often found in recreational activities (55%). There are no specific causes identified among school-age children (n = 30). However, for the adolescent group (n = 24), assault (42%) is the most significant cause and followed by TBI during sports injuries (25%). Overall, the outcome of Paediatrics TBI is promising, with majorities (84%) stayed in the hospital for less than or equal to 3 days. Even though minorities (0.04%) of cases may require emergency surgeries, all patients can achieve good recovery afterward.  **Conclusion:**  Overall, majorities of the Paediatrics TBI are found in those aged less than 3, with the most common reason being ‘fall from bed’ followed by TBI during the reactional activities. They demonstrate good recovery potential in the long run.  **Remark:** The above result and conclusion are based on the statistics in 2020. After reviewing the data, we would like to extend our inclusion criteria to include those admitted with TBI in recent 5 years. Firstly, to compare their causes before and during the COVID period. Secondly, to involve more patients who underwent surgery to compare their surgical outcomes. |

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