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|  | **The Hong Kong Neurosurgical Society Limited**  **& Hong Kong Neurosurgical Society**  **28th Annual Scientific Meeting**  **26th & 27th November 2021** |  |
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***ABSTRACT FORM***

Abstract submission deadline: 10th September 2021

Please submit your abstract by e-mail to [hoht@ha.org.hk](mailto:hoht@ha.org.hk) using the format as in the sample.

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| **Title:**  A Multicenter Study of Patients with Sports- and Recreational Cycling-Related Traumatic Brain Injury in Hong Kong  **Authors:**  Eric YH Cheung1, Peter YM Woo1, Fion WY Lau1, Nancy WS Law1, Carly KY Mak1, Peony Tan1, Bertrand Siu1, Anson Wong1, Calvin HK Mak2, Kwong-Yau Chan1, Kwong-Yui Yam3, Kai-Yuen Pang4, Yin-Chung Po5, Wai-Man Lui6, Danny TM Chan7, Wai-Sang Poon7  **Institution(s):**  1Department of Neurosurgery, Kwong Wah Hospital  2Department of Neurosurgery, Queen Elizabeth Hospital  3Department of Neurosurgery, Tuen Mun Hospital  4Department of Neurosurgery, Pamela Youde Nethersole Eastern Hospital  5Department of Neurosurgery, Princess Margaret Hospital  6Division of Neurosurgery, Department of Surgery, Queen Mary Hospital  7Division of Neurosurgery, Department of Surgery, Prince of Wales Hospital  **Abstract:**  OBJECTIVE  To determine the epidemiology of sports-related TBI in Hong Kong and predictors for recreational cycling-induced intracranial hemorrhage, including the effect of helmet wearing.  METHODS  This was a five-year retrospective multi-centre study of public hospital patients diagnosed with  sports-related TBI. Computed tomography scans were reviewed by an independent assessor. The  primary endpoint was traumatic intracranial hemorrhage. The secondary endpoint was  unfavourable Glasgow Outcome Scale outcome at discharge from hospital  RESULTS  720 patients were hospitalized for sports-related TBI (crude incidence: 1.9 per 100 000). The most  popular sport was cycling (59%, 426). For cycling-related TBI the incidence was 1.1 per 100 000.  Cyclists were prone to having intracranial hemorrhage (OR: 2.3; 95% CI 1.7-3.2) and unfavourable  GOS (OR 2.8; CI: 1.3-6.2), compared to patients with TBI due to other sports. 47% of cyclists had  intracranial hemorrhage, but only 15% wore a helmet. Significant factors were: age > 60 years,  antiplatelet medication, moderate or severe TBI, skull fractures and helmet wearing (OR 0.6; CI:  0.3-0.9). Among mild TBI cyclists (88%, 375/426), helmet wearing was protective against  intracranial hemorrhage (OR 0.5, 95% CI: 0.3-0.9), in particular epidural (OR 0.8, 95% CI: 0.7-0.9)  and acute subdural hematomas (OR 0.3, 95% CI: 0.1-0.8) as well as skull fractures (OR 0.4,  95%CI: 0.2-0.9) regardless of age, antiplatelet medication intake and mechanism of injury. Only  7% (31/426) of cyclists had unfavourable outcomes upon discharge from hospital  CONCLUSIONS  The incidence of sports-related TBI is low in Hong Kong. Head-injured cyclists have a higher risk  of intracranial hemorrhage and unfavourable outcomes. Helmet wearing has a protective effect  against intracranial hemorrhage and skull fractures among mildly injured cyclists. |

(268 words)