Concussion in motocross accident

Nearly half of all motocross competitors under the age of 18 reported concussion symptoms. Preventive measures are necessary to limit the negative impact from concussions. The risk of concussive injury can be decreased for pediatric motocross riders if they receive professional help with proper helmet fitting and through implementation of stricter guidelines regarding sponsorship ¹.

All patients aged 18 years or less who were treated for a motorbike injury at a Level 1 regional trauma center between 2000 and 2007 were identified through in-house surgical and trauma registries. Type, mechanism, and severity of CNS-related injuries were assessed, including: incidence of traumatic brain injury (TBI), loss of consciousness (LOC), Glasgow Coma Scale (GCS) score, head CT findings, neurological deficits, spinal fractures, cervical strain, and use of protective gear, including helmets.

During the 8-year period of study, 298 accidents were evaluated in 248 patients. The patients' mean age at the time of injury was 14.2 ± 2.7 years. Head injury or TBI was identified in 60 (20.1%) of 298 cases (involving 58 of 248 patients). Fifty-seven cases were associated with LOC, and abnormalities were identified on head CT in 10 patients; these abnormalities included skull fractures and epidural, subdural, subarachnoid, and intraparenchymal hemorrhages. The GCS score was abnormal in 11 cases and ranged from 3 to 15, with an overall mean of 14.5. No patients required cranial surgery. Helmet use was confirmed in 43 (71.6%) of the cases involving TBI. Spine fractures were identified in 13 patients (4.3%) and 5 required surgical fixation for their injury. CONCLUSIONS The authors found a high occurrence of head injuries following pediatric off-road motorcycle riding or motocross accidents despite the use of helmets. Additionally, this study severely underestimates the rate of mild TBIs in this patient population.

The data indicate that motocross is a high-risk sport despite the use of protective gear. Riders and parents should be counseled accordingly about the risks prior to participation. $^{2)}$.

1)

Luo TD, Clarke MJ, Zimmerman AK, Quinn M, Daniels DJ, McIntosh AL. Concussion symptoms in youth motocross riders: a prospective, observational study. J Neurosurg Pediatr. 2015 Mar;15(3):255-60. doi: 10.3171/2014.11.PEDS14127. Epub 2015 Jan 2. PubMed PMID: 25555121.

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