

DEBATE

MILD TRAUMATIC BRAIN INJURIES AND THEIR SEQUELAE. I: THE NEED FOR SCREENING

The need for systematic screening of patients with craniofacial fractures for traumatic brain injury (TBI) arises from time to time. Therefore, an article by Puljula et al. (1), published in the April edition of *Injury*, is a valuable and logical addition to the practice. The authors show that a large number of mild traumatic brain injuries (MTBI) are left unrecognized. Patients with dramatic craniofacial fractures should always be screened for TBI. The most frequent, as well as the most common, diagnosis of MTBI is concussion (2). Concussion may occur with or without direct impact to the head. As a head injury with a temporary loss of brain function, concussion may present a variety of symptoms, and the forces involved can disrupt cellular processes in the brain. Common causes of MTBI among civilians include sports injuries (3), vehicle accidents, and falls; the last two causes being the most common among adults. Participants in sports that involve combat are at an, almost occupational, risk for sustaining concussions. Papers on TBI most often refer to 107 injuries in 427 professional boxing participants described during a 16-year period (4). These data are consequently gladly cited (5). Among those injured, almost all (90%) of the injuries were found to be to the head, neck and face, with 16% resulting in concussions. In the paper published in *Injury*, sport-related head injuries were disregarded, even though sport injuries are recognized as the most frequent cause of TBI (1).

The global incidence rate of TBI is estimated at 200 per 100,000 people per year. In 1990, estimates of the total worldwide TBIs/year were over 9,500,000, but this may be a conservative figure, as some categories (e.g. fall-related TBIs with short-term consequences) were not included. As presented by Bryan-Hancock & Harrison i.e. (6), the Injury Expert Group within the Global Burden of Disease 2005 (GBD) Project shows that the incidence, prevalence and expected duration of disability due to TBI differs between global regions. Inasmuch as they did not present any absolute figures, GDB Project's report upholds data presented in a review by Anderson et al. (7).

In addition, the use of Olesen et al.'s paper (8) as a reference for the influence of MTBI on the outcome of rehabilitation should be questioned repeatedly, since it deals with all TBIs. Specifically, in the continuation of Table I (p. 159), Olesen et al. report the total number of traumatized subjects. The paper by Cassidy et al., which was published more recently, corresponds more closely with GBD Project's report, the late being more recent. Jennet, however, in his comprehensive article on the epidemiology of head injury, found 70–90% of TBIs to be mild (9). He considers their occurrence so frequent that they clog up the healthcare system and cause unwarranted

concern. Jennet (9) concludes that only a small proportion of those injured develop serious early complications, and a larger number develops post-concussion symptoms.

Although this letter is critical of Puljula et al.'s paper (1), our intention is primarily to stimulate fruitful scientific discussion and to highlight the need to document TBI in subjects with craniofacial fractures. Consultation about the need for follow-up visits should be encouraged. If possible, patients with craniofacial fractures should be examined by a clinician specialised in a field related to neuroscience.

The success of rehabilitation may be seriously threatened due to a significant number of overlooked MTBIs arising from craniofacial fractures.

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