Editorials

Warm up

A whiff of the future
I was intrigued to read in the press recently, a story based on a new study published by de Boer in the journal, *Geology*, that in Ancient Greece, the oracle at Delphi was probably in a state of drug-induced trance when advising supplicants. Plutarch, the historian, who was also the high priest at the temple of Apollo in Delphi, describes how the high priestess who spoke the oracles inhaled “sweet smelling vapours” in her chasm under the temple. De Boer and his coworkers discovered that the walls of this chasm or adytum contain volatile gases from the bituminous limestone that lies beneath the temple. The most common of these gases was ethylene, which smells sweet and moreover breathing it often induces a state of euphoria. Sometimes people have a more violent reaction. They become delirious and thrash around—a state that Plutarch also recorded. The high priestess, it seems, was as much a glue sniffer as a guru.

It is interesting how attitudes change. What was seen in Ancient Greece as prophecy would today be seen as a social problem. Glue sniffing and other illicit drug use are banes of urban society. In sport, drug use is widespread. Both recreational drugs as well as performance enhancing or ergogenic agents are a commonplace feature of elite competition. We are no longer shocked when athletes are sent home from competition, stripped of their records or medals or stopped at customs inspections with banned substances. We have recently had the situation of athletes at the world athletic championships threatening to strike if an athlete known to have tested positive to erythropoetin was allowed to compete. What a situation!

It is not surprising that the outgoing International Olympic Committee (IOC) president despairs that the drug use was so endemic, that detection, and ultimately removal of all drug use within elite sport was a forlorn hope. We can only hope that the new IOC supremo, Dr Jacques Rogge, will be true to his medical training by upholding the Hippocratic tradition and continuing the drug battle at the IOC.

It also seems strange, as an IOC outsider, that more sophisticated testing is not performed. Prior to the Sydney 2000 Olympics, speculation about the introduction of testing for EPO and Growth Hormone testing was widespread and the ultimate EPO test strategy that was introduced was confusing. Whilst there may have been very good reasons for this approach, it may be cognizant of the IOC to be more transparent in its anti-drug strategy. We, as sports clinicians, are on the same side and we also see the negative effects of banned drug use first hand.

Perhaps prophecy as to the future of the drug dilemma in sport should take a leaf from the ancient oracle. A little chemical help is always welcome!

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What’s in a name?

I was disappointed to see a recent editorial in one of our sister sport medicine journals. The journal issue concerned was a supplement devoted to sport related concussive injuries. While such noble sentiments are to be supported nevertheless the terminology of concussion once again is becoming confused. The authors use the term “mild traumatic brain injury” to describe the clinical entity of concussion. A seemingly small change yet one that has important implications for the understanding of the clinical problem, and more importantly serves to confuse clinicians reading published articles on the topic. It may be useful for clinicians to understand the background of this issue.

One of the major limitations in this field is that there is no universal agreement on the standard definition or nature of concussion. The historical context of this injury refers to a transient disturbance of neurological function caused by “shaking” of the brain that accompanies low velocity brain injuries. The clinical manifestations of concussion as a transient neurological syndrome without structural brain injury have been known since the 10th century AD. Following pioneering experimental work demonstrating the transient and functional nature of concussion by Denny-Brown et al, the term “acceleration concussion” was proposed as the generic descriptor that should be applied to all forms of traumatic brain injury. This concept is that the term concussion should be synonymous with traumatic brain injury. A variation on this view holds that concussion refers to the mechanism of injury and motion of the brain within the skull rather than any clinical symptoms or pathology. In some quarters, this view has been modified to incorporate a threshold effect beyond which permanent or structural brain damage may occur, and that the degree of pathological damage is dependent upon the duration and magnitude of rotational forces on the brain following impact. The clinical manifestations of concussion as a transient neurological syndrome without structural brain injury have been known since the 10th century AD.

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Headache in sport

The prevalence and nature of headache in sport is largely unknown. The only published study on sport related headache was a survey performed on university students participating in varsity sport. The authors found that headaches were reported by 35% of all respondents with participating in varsity sport. The authors found that headache was a survey performed on university students.

Concussion may result in a graded set of clinical syndromes that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential stereotyped course.

Normal conventional (computer tomography and magnetic resonance scanning) neuroimaging studies.

In attempting to resolve this confusion, an “all encompassing” definition along the lines of the neurosurgical approach or even simply defining concussion as “a (transient) post-traumatic impairment in neurological function” remains inadequate. It may be that with further research a more specific time limited categorisation may be incorporated, however, at the present time, evidence is lacking as to a precise separation from more severe categories of brain injury.

The use of the term “mild traumatic brain injury”, however, is inadequate to define the problem and more importantly is inappropriate to understand the conceptual relationship between mild brain injury as defined by the GCS and the historical understanding of concussion.

To use the terms interchangeably is incorrect conceptually and adds to, rather than detracts from, the existing confusion in understanding the problem. We should all speak with one voice on this issue—concussion!

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Few studies in sport have utilised the International Headache Society diagnostic criteria to ensure uniformity in headache categorisation. Furthermore, such research based criteria remain to be tested in the sporting situation.

The accurate diagnosis of headache syndromes in sport has important treatment implications. In professional sport, many conventional headache medications (such as beta-adrenergic antagonists, caffeine, codeine-containing preparations, dextropropoxyphene, narcotics, and opioids etc) are banned agents under International Olympic Commission rules. Accordingly the ability of a team physician to accurately diagnose and treat the specific headache requires an understanding of the symptomatology and nature of headaches that may present in these situations.

Editor