PERSISTENT POST-CONCUSSION SYNDROME

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This literature is a result of a review of the most recent studies done on concussion and post concussion syndrome.

A concussion is a traumatic brain injury that alters the way your brain functions. Although concussions usually are caused by a blow to the head, they can also occur when the head and upper body are violently shaken. These injuries can cause a loss of consciousness, but most concussions do not.

Concussions are common, particularly if you play contact sports. But every concussion injures your brain to some extent. This injury needs time and rest to heal properly. Most concussive traumatic brain injuries are mild, and people usually recover fully. But mild repeated concussive force can cause additive effects leading to permanent brain damage.

Most of the post concussion symptoms are nonspecific; those include headache, Dizziness, Fatigue, Irritability, Anxiety, Insomnia, Loss of concentration and memory, Noise and light sensitivity. The severity of post concussion syndrome does not appear to associate with the severity of the initial injury. Effects are usually temporary but can include headaches and problems with concentration, memory, balance and coordination.

Usually post concussion symptoms occur within the first seven to 10 days after the injury and disappear gradually within first 3 months. Persistent percussion syndrome is defined as persistent of symptoms of concussion more than 1 year duration following head injury. Persistent PCS, as currently defined, is not specific to mild TBI. Some studies have suggested that somatic and cognitive symptoms are most likely to be able to distinguish PCS after mild TBI from that present in the general population. Therefore it is clear that further researches are necessary into these factors in order to create more specific PCS diagnostic criteria.

Some studies have been done extensively for further classification of post concussion syndrome according to the pathophysiology of this disorder. Such as Physiological, vestibulo-ocular and cervicogenic post-concussion disorders: Future studies incorporating neuro-imaging and exercise science techniques are needed to validate this novel classification system of pathophysiological approach to acute concussion and PCS.

Researchers have hoped this evidence-based classification system will provide directions for effective treatment for concussion. New classification system will enable to identify the specific post-concussion disorders (PCDs) caused by impairments in global brain metabolism (Physiologic PCD) or neurological sub-system dysfunction (Vestibulo-ocular PCD and Cervicogenic PCD) that can be distinguished by features of the clinical history, physical examination and treadmill exercise testing. This
novel approach also allows for the initiation of evidence-based, multi-disciplinary therapeutic interventions that can improve individual symptoms and promote efficient neurological recovery.

According to some recent studies, understanding, assessing and treating the psychological factors associated with concussion are effective means of preventing or shortening the length of post-concussion syndrome. The pathophysiology of depression following a concussion appears to be consistent with the cortico-limbic model of depression. Additionally, some individuals may be at risk for neurobiological depression and/or anxiety following a concussion and also demonstrated that pre-morbid and concurrent anxiety increases the risk for prolonged concussion recovery. Cognitive biases and misattribution of symptoms also contribute to lengthy recovery from concussion.

Sports concussion headache (SCH) is a common topic; yet poorly researched and understood but commonly talk about. Somatic complaints including headache are frequently reported by both amateur and professional athletes. There is always a dearth of evidence-based medicine to provide practitioners with an understanding of sports concussion headache risk factors, epidemiology, biomechanical risk factors and/or injury thresholds, etiology, assessment, treatment or prognosis.

The two most commonly encountered symptoms following sport-related concussion are vestibular and balance issues. It has been implicated that dizziness following concussion occurs in ∼67–77% of cases and it is one of the major risk factors for a prolonged recovery. Balance impairments also occur after concussion and last 3–10 days post-injury. Vestibular rehabilitation has been shown to improve outcomes in patients with vestibular impairments, with demonstrating success in decreasing symptoms and increasing function following concussion. Recommendations regarding the best management practices of sport-related concussion suggest including tests of balance within the multifactorial assessment paradigm for concussive injuries.

According to some studies there is a new hope that known and emerging Neuropsychological and psychological rehabilitation interventions will be helpful for minimizing the morbidity of refractory sport-related post-concussive syndrome. Further, rehabilitation interventions proven useful with similar injuries or illnesses, particularly non-sports-related mild TBI, will be reviewed for applicability. Such interventions include Cognitive-Behavioural psychotherapy, biofeedback, cranial electrical stimulation, neurofeedback and cognitive rehabilitation.

Prescribed rest is a widely recommended treatment for concussion, but its utility is unclear following the acute stage of recovery. Some studies have carried out to examine the effects of 1-week of prescribed rest in concussed adolescent athletes. It has been shown that a substantial percentage of adolescents with persistent symptoms following concussion showed improvement in symptoms and cognitive functioning following education, reassurance and 1-week of prescribed rest.
In addition, it has also been proven that medically prescribed excessive cognitive and physical rest may contribute to a protracted concussion recovery. Supervised and graduated physical activity, the introduction of anxiety reduction techniques and cognitive-behavioural therapy of cognitive biases and misattribution are effective means of shortening the length of post-concussion syndrome.

There is very high levels of post-injury unemployment and measurable cognitive deficits can be permanent features can be seen in persistent post concussion syndrome. Quality-of-life is directly related to morbidity. Age, pre-/post-morbid concomitant factors, neuropsychological deficits and emotional status are key variables in understanding the phenomenon of permanent PCS. Important vulnerability factors in the development of such may therefore be older age and any additional compromise to an individual's emotional or cognitive capacities.

In conclusion persistent post concussion syndrome carries a greater morbidity to the affected individual. Some recent studies have focused on new classification system based on the pathophysiology of concussion hoping to establish effective evidence based treatment protocols. There is definite association of premorbid psychological condition of the individual for the Persistence and severity of symptoms. Therefore neuropsychological and psychological strategies could be used in the assessment and the treatment of the Persistent Concussion Syndrome. Majority of victims suffer balance and vestibular disorders following sport related concussion. Supervised and graduated physical activity, the anxiety reduction techniques and cognitive-behavioral therapies are effective means of shortening the length of post-concussion syndrome.

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