Cognitive remediation for traumatic head injury

Traumatic brain injury is a leading cause of death among persons under 35, and approximately 80,000-90,000 persons suffer long term disability following a head injury (Chua et al, 2007). The most common consequences of traumatic head injury are cognitive impairments. Dependent on the nature and the severity of the injury, such impairments may involve acquired deficits in attention, organization, memory, and the ability to solve new problems, monitor one’s own behavior and emotions. Additionally, head injury and the resulting deficits can lead to depression and anxiety. The primary mode of therapy for long-term effects of head injury consists of cognitive remediation, or neuropsychological rehabilitation as it is sometimes called. Cognitive remediation is a therapeutic approach targeting specific cognitive functions, such as attention, organization, planning or memory that constitute individual’s weaknesses or impairments. A course of cognitive remediation consists of neuropsychological testing, which is needed to determine the individual’s specific areas of weakness. Then and a set of structured exercises designed to develop the deficient areas and to introduce more effective ways of compensating for these deficits. Such exercises may be delivered via a computer program, individual or group activities, or by way of exercises individually tailored around personal daily activities. In addition, patients are taught compensatory strategies designed to work around areas that cannot be remediated. The length and frequency of the treatment depends on the nature and extent of the deficits.

A recent review of the state of the field of cognitive rehabilitation by Chau and colleagues (2007), suggests that the most effective programs are those that are more intensive (meeting more times a week and for longer periods) and that start soon after the trauma. A number of cognitive remediation techniques tailored to specific needs of persons with head injuries have emerged in the past several years. One such technique is errorless learning, which involves providing a person with head injury with the correct answers until they master new information, and not allowing them to make mistakes. While normal people can learn from their mistakes, this ability is commonly impaired in someone with a head injury. A number of effective exercises have been developed for improving specific cognitive deficits, and these can be combined into individualized programs targeted at patient’s particular impairments. Supplementing cognitive remediation with pharmacological treatment to improve mood and reduce fatigue has also been shown as effective.

The gains made during training have been shown to last after the training has been discontinued, and to generalize to daily activities. A recent review of literature by Geusген et al (2007) in the Journal of Rehabilitation Medicine found that most studies investigating generalization of gains achieved in cognitive remediation treatment have found at least some improvements on unpracticed tasks, and laboratory simulated and real-world daily tasks.

Head injury can be a devastating event that impacts many areas of one’s life. Cognitive remediation is a valuable tool in the treatment of traumatic head injury. A review of several cases of remarkable recoveries from serious head trauma, conducted by Larry Schuetz (2007) provides both insight and hope for patients with similar conditions. He found that the patients that made the most dramatic recoveries were those who continued to improve, elaborate, and rely on cognitive compensation strategies which they learned. Ongoing reliance on and elaboration of these strategies allowed such individuals to effectively manage the impact of their disability, and lead successful lives.

