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SUBSTANCE ABUSE AND BRAIN INJURY

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Research documents that many individuals who sustain head injuries have histories of recreational drug and alcohol abuse and, in many cases, consumed such substances immediately prior to their accidents. Although this paper focuses primarily on abuse of recreational drugs and alcohol, it is critical to keep in mind the possible role of other substances in complicating and confounding the total picture in head injury

- Misuse, abuse or mixing of non-prescription (OTC) drugs may also interfere with recovery following a head injury, and/or may complicate long term adjustment to residual deficits.
- Survivors may also abuse more common substances such as tobacco, caffeine and vitamins.
- Survivors and their families may utilize megavitamin therapy in the belief such a practice will speed recovery. The effect of such a practice is unknown but vitamins are powerful chemical substances which can disrupt metabolism and, in large doses, may betoxic.

The Chronology of Substance Abuse in Head Injury

Pre-injury substance abuse: In addition to the social, psychological and behavioral problems involved in substance abuse, pathological changes, some of which are irreversible, have been demonstrated within the brain and central nervous system. The absolute amount of brain damage depends upon the drug(s) utilized, their purity and the frequency/duration of abuse.

Acute care: Differential diagnosis is more difficult when a head injury is accompanied by moderate to high levels of blood alcohol or drugs: the behaviors noted following acute intoxication and overdose are similar to those following head injury (lethargy or agitation, confusion, disorientation, respiratory depression, etc.). Patients may be discharged from the emergency room with a diagnosis of intoxication when they have also sustained an undiagnosed head injury.

Acute rehabilitation: By the time the individual enters rehabilitation, physiological withdrawal from recreational drugs or alcohol has usually been completed. Unfortunately, psychological dependency has not usually been addressed so the problem continues to pose an underground threat. Patients and family members are not likely to voluntarily admit to substance abuse in fear of making the patient appear a poorer candidate for rehabilitation; accompanying medical records may not include this information. In rehabilitation the patient interacts with others who may have histories of drug and alcohol abuse. The relative social freedom of many rehabilitation settings allows drugs and alcohol to be introduced or re-introduced. Home passes may begin and peers may visit, some of whom may be chemical users.

A number of myths exist about the positive effects of drugs, especially marijuana, on post-injury medical problems such spasticity, ataxia, and dysarthria. As a consequence, even the individual who has no history of drug use may experiment with such substances in an attempt to relieve troublesome symptoms.

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Community Care: Once discharged into the community, opportunities to resume previous relationships and behavior patterns surface. With the structure of the rehabilitation setting withdrawn, the individual has significantly more free time and less activities with which to fill that time. In many cases, former friends rarely visit. Family members return to their own lives out of economic and social necessity.

Physical, cognitive, emotional and behavioral limitations frequently preclude many favored pre-injury activities. Since the cognitive and physical requirements for successful drug and alcohol abuse are minimal, such behaviors are readily accessible to even severely injured individuals and may well provide both a link with the past and an entrée into peer groups. Individuals who previously refused marijuana, alcohol or other drugs may now accept such substances in an attempt to be "one of the guys".

Within the unadapted home and community, the full impact of various deficits may be experienced for the first time. Rather than deal with the emotional consequences of such awareness (e.g., depression, frustration and boredom) the individual may seek refuge in the bottle, especially if such a pattern existed in the past. In sharp contrast to the rejection experienced in other social situations, members of the drug culture extend a warm and friendly welcome and cognitive and physical limitations are readily accepted.

Family members may be uncomfortable denying alcohol to an adult who was previously allowed to drink: "everything else has been taken away; I can't take away that one remaining pleasure." Which is understandable but ignores the fact that tolerance for alcohol is decreased following a head injury and even in small amounts further decreases cognitive and physical functioning. In this framework, it may be easier for the caregiver to refuse alcohol.

Those individuals with less severe disabilities may well be able to obtain drugs and alcohol independently but with limited financial resources, they may purchase such items at the expense of more essential resources. They may also fall easy prey to unscrupulous drug dealers and pushers who sell oregano as marijuana.

The deficits which commonly follow head injury are such that the affected individual may well be questioned and/or arrested by local authorities as drunk or high: slurred speech, unsteady gait, poor memory, and altered moods can quite easily be misinterpreted. Survivors may then feel "I got the name, I might as well have the game."

Detecting Substance Abuse

Given the memory deficits experienced by many survivors, expectation of accurate self-reporting of substance abuse may be unrealistic. The individual may truly not recall having consumed inappropriate chemical substances or may underestimate amounts consumed. At the same time, however, cognitive and behavioral limitations make it less likely that the abusing individual will be able to successfully hide patterns of substance abuse. For those involved in providing supervision, detection may be quite difficult: substance abuse behaviors are similar to those frequently seen after head injury: unsteady gait, decreased memory, uninhibited behavior, euphoria, sleep disturbance, altered appetite, visual disturbances, etc. But drug or alcohol effects are superimposed upon the injured individual's *typical* post-injury cognitive, physical, emotional and behavioral patterns. Detection becomes a process of noting decreases in functional abilities which are not explainable on any other basis and which coincide with time periods where alcohol or drugs might have been consumed. It is critical, however, to ensure that

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such functional decreases are not explainable in terms of acute illnesses (e.g. respiratory infections, hydrocephalus, development of seizures) or newly instituted medications.

Preventing Substance Abuse

Given the difficulty altering patterns of substance abuse in individuals who have not sustained head injuries, it is not surprising that the same problem is experienced when working with survivors. Since many survivors are unable to obtain employment, the threat of job loss is an empty one. And given social norms which exert strong pressure on family members to take care of individuals who are ill, threats to remove family support are rarely credible. Repeated attempts to "persuade" the injured individual to avoid chemical substances are usually unsuccessful. This is largely attributable to the kinds of cognitive and behavioral deficits typically found after head injury: decreased judgment and reasoning; impaired abstraction; decreased generalization ability; and impaired memory. The iindividual with moderate to severe head deficits may vehemently deny the existence of any disabilities and feel attempts to change pre-injury behavior are unnecessary and inappropriate.

Probably the best way to prevent substance abuse following head injury is to ensure sufficient meaningful relationships and activities to maximize quality of life: if there are no voids, there will usually be no attempts to fill them with chemicals. While it is impossible to force others to interact with survivors, using appropriate behavior management techniques can maximize the social behavior of the survivor. Exploration of community services such as support groups, YMCA/YWCA, UCP, adapted recreational services, and community colleges, may aid in the search for appropriate social opportunities.

Wherever possible, survivors should be involved in active rehabilitation to remediate deficits and to ensure maximal recovery. Once the individual's medical status is stable, continued reliance on the medical model may encourage dependency upon medical approaches to deficit remediation, including use of chemicals for behavior control. At that point in the recovery process, cognitive and behavioral rehabilitation approaches are more likely to be successful in preventing substance abuse since they require injured individuals to accept responsibility for their own behavior, provide consistent objective feedback on performance, and more directly address the long term deficits which lead to substance abuse.

Caregivers who are aware of substance abuse problems need to ensure that cues to engage in such activity are withdrawn from the environment. Alcohol may need to be removed from the house or stored in locations which are inaccessible to the survivor. This may also include denying opportunities for social relationships with pre-injury friends who are known to abuse chemicals. Obviously, the caregiver becomes the "heavy" when such tactics are required but there is no reasonable alternative. Reasonable limitations on access to funds may be necessary to prevent purchase of chemical substances.

Conclusion

Substance abuse can frequently be prevented, even when it was present prior to the injury. While many individuals with a history of substance abuse may benefit from formal drug and alcohol rehabilitation programs, such programs are not usually designed to address the physical and cognitive limitations of those who have sustained head injuries. Should enrollment in such a program be considered, it is essential that program personnel be fully apprised of the medical problems of the survivor to ensure that medical needs are met. Family members must be aware

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that some individuals who sustain head injuries will continue with or develop patterns of substance abuse which are intractable. While this is unfortunate, feelings of guilt and failure are not justified if reasonable attempts, including enlisting professional assistance if necessary, have been made. It is unrealistic to expect all individuals who have sustained head injuries to avoid substance abuse when it is so prevalent in our society.

References:

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