

Cognitive impairment among drug abusers

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Abstract

Drug dependency have increased markedly particularly among adolescents and young adults. Drug abusers often exhibit deficits on neuropsychological testing. These deficits are usually attributed to drug induced brain dysfunction. This study was carried out on 45 subjects; 30 substance dependent and 15 healthy individuals. 20 patients were cannabis abusers, 19 were codeine abusers, 18 were benzodiazepine abusers, 12 were heroin abusers, 8 were alcohol abusers, and 6 were barbiturates abusers. Both patients and controls were subjected to full psychiatric, neurological, and cognitive assessment. The neuropsychological tests done included, WAIS; Scales to assess memory(logical memory A&B, orientation and mental control); organic battery(Bender Gestalt recall and copy tests, trail making tests A&B, block counting test) and minimental state scale. Abusers group showed deterioration on most neuropsychological tests compared to control subjects. Heroin abusers showed the highest cognitive impairment followed by benzodiazepine abusers then alcohol abusers. Codeine and cannabis abusers showed the least cognitive impairment. Correlation study between the age of addicts and scores on different neuropsychological tests revealed a significant negative correlation with WAIS and minimental state. Correlation study between the duration of addiction and cognitive function revealed a significant negative correlation with WAIS, BG recall, and minimental state. We concluded that drug abuse often exhibit deficits on neuropsychological tests indicating impaired cognitive functions. These deficits are attributed to the type of drug abused. The relationship between cognitive deficits and duration of addiction was approved. Again the impairment of cognitive performance was age related.

Introduction

Drug dependency, drug abuse, and drug seeking behavior have increased markedly, particularly among adolescence and the young adult population around the world (Koob and Moal, 2001). Addiction is a complex disease process of the brain that results from recurring drug intoxication and is modulated by genetic, developmental, experiential and environmental factors (Hasin et al, 2002). Recently in Egypt the phenomenon of the spread of drug abuse had changed from a social into a complex national problem of very high social and economic costs imposing extra burden on economy (Okasha et al, 1990). Addiction is responsible for the extensive morbidity and mortality associated with drug abuse and dependency (Brown, 2001). Beatty and Borrel, 2000, considered that chronic drug and alcohol abusers often exhibit persistent deficits on neuropsychological tests. These deficits are usually attributed to drug induced brain dysfunction. Some factors have been postulated to be correlated with severity of impairment in cognitive functions among drug abusers including age, type of drug abused, and total duration of abuse (Alwan et al, 1997; Aboul Magd et al, 1999, and Goldstein and Volkow, 2002).

Aim of the work

The aim of this work is to assess the effect of drugs of abuse on different neuropsychological dimensions of cognitive functioning in drug abusers. Furthermore we aim at trying to lay stress on some factors that may affect the deterioration of the cognitive functions among drug abusers.

Subjects and Methods

Subjects

This study was conducted in a case-control cross-sectional design. 30 substance dependent subjects were examined. The inclusion criteria of subjects taken are: male gender, age range between 15-45 years, educational level minimally up to secondary school, no history of medical problems as DM or hypertension, no history of organic disorder, no history of mental disorder and no history of head trauma, epilepsy, or fever. All are in the detoxification period.

A control group consists of 15 male subjects chosen from the first degree patients relatives are also studied. They are matched with patients group regarding age and educational level. They have no history of drug abuse, treatment for addiction and no history of organic, medical, or mental disorder.