Cognitive Impairment in Tramadol & Synthetic Cannabinoids Use Disorder Patients

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Background: Studies have suggested that Patients with polysubstance abuse (n = 76) and tramadol alone abuse (n = 24) were more likely to have cognitive impairment (CI) (81% and 66.7%, respectively) than the control subjects (28%) as reflected by the total Montreal cognitive assessment (MoCA) scores. All cognitive domains were significantly impaired among tramadol-abuse patients, whereas tramadol-alone patients had significant impairment in all cognitive domains except attention, visuoconstructional (cube), and trail-making test. The most affected cognitive domains were memory, visuospatial skills, and verbal fluency. Reliable estimates of tramadol and synthetic cannabinoids addiction prevalence are important to prevent, treat, and identify causes of addiction, especially in light of recent work revealing a high prevalence of cognitive impairment among drug abusers.

Aim of the Work: to assess the cognitive function among tramadol & synthetic cannabinoid use disorder patients in addiction clinic of Ain shams university hospitals, as well as comparing the cognitive function between them and healthy adults.

Patients and Methods: This is a Cross sectional case-control observational study conducted in Ain Shams University hospitals. This present study aimed at analyzing the data of 30 tramadol dependent, 30 synthetic cannabinoid dependent patients & 30 healthy controls, diagnosed by DSM-4 and then they will undergo SCIDI (to exclude any psychiatric comorbidity), SCIDII (for personality disorders), addiction severity index, Wechsler memory scale (for different memory functions), trail making test (for visual attention and task switching) and Benton visual retention test (for visual perception and visual memory), over a period from October 2018 to August 2019.

Results: A total of 30 tramadol dependent patients, 14 (46.67) were diagnosed as major depressive disorder, 14 (46.67%) as antisocial personality disorder, 23 (76.67) as borderline personality disorder. 26 (86.67 %) patients showed impairment in Benton visual test, 10 (33.33%) patients showed impairment in trail making test. 29 (96.69%) out of 30 patients showed impairment in verbal paired association I & II and visual memory span scales, 30 (100%) out of 30 patients showed impairment in visual paired association I&II and digit span scales. A total 30 synthetic cannabinoid patients, 9 (30%) were diagnosed as psychotic disorder, 7 (23.33%) as bipolar disorder, 1 (3.33%) as major depressive disorder, 19 (63.33%) as antisocial personality disorder, 27 (90%) as borderline personality disorder. 29 (96.67%) patients showed impairment in Benton visual test, 22 (73.33%) patients showed impairment in trail making test. 30 (100%) out of 30 patients showed impairment in visual paired association I&II, verbal paired association I&II, visual memory span and digit span.

Conclusion: This study provides observation of impaired cognitive function in chronic tramadol and SC users. Tramadol and SC users have shown impairments in visual, auditory, working, immediate, delayed memory and task shifting, as well as an elevation of comorbid psychiatric and personality disorders as psychotic, bipolar and depressive disorders. Also, there was comorbid antisocial and borderline personality disorders. Further research is required to examine the effects of acute and chronic SC consumption on cognitive function with comprehensive explorations of demographic background and objective measurements of substance use.

Key words: tramadol, synthetic cannabinoids, addiction, cognition.