Abstract

Craving has been defined as the motivation to self-administer a substance previously consumed. It has been hypothesized that craving contributes significantly to compulsive drug use and relapse after a period of abstinence in humans. Neuropsychological and brain-imaging studies have identified numerous brain regions that may be involved in craving. In this paper, the neuropsychological mechanisms of craving for nicotine are reviewed, focusing on three systems that appear to be involved in craving states. First of all, the reward system, responsible for the development of dependence and craving. Secondly, the emotional and associative system, which is related to conditioned craving. And third, the system involved in the neural basis of cognitive and decision-making processes. The most influential theoretical models on craving are also reviewed, including those based on conditioning mechanisms, on cognitive mechanisms and on cognitive-behavioral mechanisms, as well as the neurobiological model. Factors related to the evaluation and treatment of craving are also discussed, with particular emphasis on clinical aspects. Finally, we stress the importance of a multidisciplinary approach for achieving a common model on craving and improving the diagnostic tools and treatment strategies.

Keywords

Craving, smoking, neuropsychological mechanisms, nicotine dependence, theoretical models.