The treatment and handling of substance dependence with Ayahuasca: Reflections on current and future research

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This paper presents a series of reflections on the therapeutic potential of the ritual use of ayahuasca in the treatment and handling of substance dependence problems. Ayahuasca is a psychoactive mixture typically made from the Amazonian plants Banisteriopsis caapi and Psychotria viridis, among other possible admixtures. The mixture contains dimethyltryptamine (DMT), a controlled substance subject to national and international drug laws. Ayahuasca has been traditionally used in indigenous, mestizo shamanic, and religious rituals in South America. In the last 20 years, its use has spread beyond the Amazon to the world, and has been accompanied by great controversy. One of the main aspects of this controversy is related to the native claims of the therapeutic potential of ayahuasca, especially in the treatment of drug abuse and depression. This claim has engendered increased academic discussion, with the production of a series of Ph.D.'s and conferences on the topic that, nevertheless, remain little known outside of South America. This presentation will analyze anthropological and psychiatric data on the ritual use of ayahuasca for "healing" dependence in psychotherapeutic centers (in Peru and Brazil), as well as within the ayahuasca religions (in Brazil). Methodological, ethical, and political considerations for current and future research in this area are further discussed, and an interdisciplinary agenda for studies on the use of ayahuasca to treat or handle substance dependence is proposed.

Biography

Beatriz Caiuby Labate has a Ph.D. in Social Anthropology from the Universidade Estadual de Campinas, Brazil. Since 2009, she has been a Research Associate at the Institute of Medical Psychology, Heidelberg University. She is also researcher with the Nucleus for Interdisciplinary Studies of Psychoactives (NEIP), and editor of its site (http://www.neip.info). She is author, co-author, and co-editor of eight books, two with English translations, and one journal special edition. For more information, see: http://bialabate.net/

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Contribution of serotonin (5-HT) to the alcohol addiction cycle: A transgenic approach

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During the last two decades, the use of genetically manipulated animal models in alcohol research has greatly improved the understanding of the mechanisms underlying alcohol addiction. In this regard, the contribution of genetic mouse models targeting specific components of the serotonin system during the different phases of alcohol addiction has been focused on the initial reinforcement processes, while craving, relapse and the compulsive aspect of drinking remain to be further explored. These aspects are particularly important as serotonergic hypo function has been associated with impulsive and compulsive behavior, and therefore it might influence the transition from controlled to compulsive alcohol use. In this study we examined the consequences of serotonin depletion in adult mice to alcohol addiction cycle and other reward-related behavioural phenotypes using an advanced transgenic approach. To that end, we generated inducible mice lacking the vesicular monoamine transporter Vmat2 in serotonergic neurons (Vmat2^{TPHCreERT2} mice), and tested them in each particular phase of the alcohol addiction cycle: the initiation and maintenance of alcohol consumption, alcohol-seeking during abstinence and relapse-like drinking. We found that Vmat2^{TPHCreERT2} mice showed increased alcohol seeking behavior as demonstrated by increased operant self-administration and cue-induced reinstatement, -a measure of craving- in response alcohol conditioned stimuli.We also tested the compulsive drinking in the mice by the use of alcohol deprivation effect (ADE) and the quinine tests. During the ADE test, quinine-induced taste adulteration was not able of reducing the ADE in Vmat2^{TPHCreERT2} mice, indicating compulsive drinking. Despite this compulsive drinking phenotype, mice showed no basal impulsive phenotype in the 5 choice serial reaction task (5CSRT). In conclusion, a 75% reduction of brain 5-HT levels in adult Vmat2^{TPHCreERT2} mice results in increased alcohol seeking, relapse and compulsive drinking, without affecting basal impulsivity. Understanding which aspects of impulsivity predisposes to alcohol addiction, or result from neuroadaptations associated with long-term exposure to alcohol will enhance our knowledge of the behavioral and neural pathways of these pathologies.

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