

TRAIT MARKERS FOR ALCOHOLISM: CLINICAL UTILITY

Authors: Farren CK, Tipton KF

Abstract:

Because alcoholism is a multi-factorial psychiatric disorder, with both psychosocial and biochemical/genetic factors leading to its manifestation in any one individual, the presence of biochemical/ genetic factors alone may not lead to the manifestation of the disorder. There are numerous difficulties associated with identification of a trait abnormality in a disorder that requires suitable socio-cultural permissiveness with distinct behavioural characteristics to manifest a disorder that may not require that predisposing trait abnormality in order to develop. Numerous studies have been performed in the past to potentially identify a biochemical or genetic trait abnormality in alcoholism, and not all of them have addressed significant methodological flaws in this type of research. This review addresses some of the difficulties inherent in this research, and aims for a comprehensive review of the highlights of the search for a clinically useful trait abnormality. Some series of investigations hold promise that a trait marker for a particular subset of alcoholics may be developed, e.g. severe alcoholism and the dopamine D2 receptor gene; the level of reaction to alcoholism in family history-positive alcoholics; β -endorphin abnormalities in specific family groups of alcoholics; reduced P3 wave event-related potentials as markers and predictors of development of substance abuse in predisposed youths; reduced growth hormone response to apomorphine as a predictor of relapse to alcoholism in early abstinence; abnormal adenylyl cyclase activity in certain defined subgroups of alcoholics; and abnormal platelet monoamine oxidase levels in subjects with a behavioural predisposition to addictive disorders. The review concludes that while there has not yet been an identification of a comprehensive trait marker for alcoholism, there is hope for identification subgroups of alcoholics with consistent biological markers within that subgroup that may well prove fruitful over time. It will then be up to a future generation of clinicians to take that information and develop prevention programmes that can incorporate this information to help the predisposed individual avoid alcohol problems.