

Familial Transmission of Substance Dependence: Alcohol, Marijuana, Cocaine, and Habitual Smoking: A Report From the Collaborative Study on the Genetics of Alcoholism

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Abstract

Background: Alcoholism and substance dependence frequently co-occur. Accordingly, we evaluated the familial transmission of alcohol, marijuana, and cocaine dependence and habitual smoking in the Collaborative Study on the Genetics of Alcoholism.

Methods: Subjects (n=1212) who met criteria for both DSM-III-R alcohol dependence and Feighner definite alcoholism and their siblings (n=2755) were recruited for study. A comparison sample was also recruited (probands, n=217; siblings, n=254). Subjects were interviewed with the Semi-Structured Assessment for the Genetics of Alcoholism. The familial aggregation of drug dependence and habitual smoking in siblings of alcohol-dependent and non-alcohol-dependent probands was measured by means of the Cox proportional hazards model.

Results: Rates of alcohol, marijuana, and cocaine dependence and habitual smoking were increased in siblings of alcohol-dependent probands compared with siblings of controls. For siblings of alcohol-dependent probands, 49.3% to 50.1% of brothers and 22.4% to 25.0% of sisters were alcohol dependent (lifetime diagnosis), but this elevated risk was not further increased by comorbid substance dependence in probands. Siblings of marijuana-dependent probands had an elevated risk of developing marijuana dependence (relative risk [RR], 1.78) and siblings of cocaine-dependent probands had an elevated risk of developing cocaine dependence (RR, 1.71). There was a similar finding for habitual smoking (RR, 1.77 in siblings of habitual-smoking probands).

Conclusions: Alcohol, marijuana, and cocaine dependence and habitual smoking are all familial, and there is evidence of both common and specific addictive factors transmitted in families. This specificity suggests independent causative factors in the development of each type of substance dependence.