

Evidence for Reduced Dopamine D2 Receptor Sensitivity in Postwithdrawal Alcoholics

Farren, C. K., Clare, A. W., Ziedonis, D., Hammeedi, F. A. and Dinan, T. G. (1995), Evidence for Reduced Dopamine D2 Receptor Sensitivity in Postwithdrawal Alcoholics. *Alcoholism: Clinical and Experimental Research*, 19: 1520–1524. doi: 10.1111/j.1530-0277.1995.tb01017.x

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Keywords: Bromocriptine; Dopamine; Growth Hormone; Alcoholic

Abstract:

Dopamine D2 receptor sensitivity was assessed in the postwithdrawal period in alcoholics. Growth hormone (GH) responses to dopamine D2 agonist bromocriptine were measured in eight DSM-III-R alcohol-dependent subjects who were 2 weeks or more postalcohol withdrawal. Their responses were compared with eight nonalcoholic controls. After an overnight fast, each subject received 1.25 mg of bromocriptine orally, and serial samples of GH were taken over a 3-hr period. There was a significantly blunted delta GH response (mean \pm SE) in the alcoholic group, 2.3 mU/liter (\pm 1.4) relative to controls, 7.7 mU/liter (\pm 1.2) ($t= 2.96$, $df= 14$, $p= 0.01$). There was a significantly blunted peak GH response (mean \pm SE) in the alcoholic group, 5.36 mU/liter (\pm 2.1) relative to controls, 9.04 mU/liter (\pm 5.0). This difference also reached statistical significance ($t= 2.32$, $df= 14$, $p= 0.035$). A repeated-measures ANOVA yielded a significant within-subjects effect of time [$F(4,54) = 4.08$, $p= 0.0057$], a significant with-in-subjects effect of group [$F(1,14) = 5.6$, $p= 0.0329$], and an almost significant group x time interaction [$F(4,54) = 2.45$, $p= 0.056$]. This result implies a relative dopamine D2 receptor subsensitivity in alcoholics in the postwithdrawal period.