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ANTI-NEUROPEPTIDE Y PLASMA IMMUNOGLOBULINS ARE DISTINCTLY ASSOCIATED WITH ALTERED MOOD AND APPETITE IN DEPRESSIVE DISORDER

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Introduction: Neuropeptide Y (NPY) has potent antidepressant and orexigenic properties suggesting that altered NPY signaling can be relevant to etiology of altered mood and appetite commonly co-occurring in depressive disorder.

Objective: Study if plasma levels and affinities of anti-NPY immunoglobulins(autoAbs) are affected in depression.

Methods: Plasma levels of NPY-reactive total/free IgG, IgM and IgA autoAbs were measured by ELISA in 14 patients with mild and in 9 patients with moderate depression and 20 controls. Affinity of autoAbs was assayed by the plasmon resonance. Depressant-like effect of human autoAbs was studied in mice using forced-swim test(FST) after IV injections of patients' and controls' IgG. Effects of affinity anti-NPY to antagonize NPY-induced antidepressant and orexigenic effects were studied in mice.

Results: Plasma levels of NPY total IgG autoAbs were lower in patients with moderate depression than in patients with mild depression and healthy controls. MADRS scores correlated negatively with levels of NPY free autoAbs but not with their affinity values were not significantly among study groups. Body mass index(BMI) correlated negatively with affinities of NPY IgG autoAbs. Immobility time in FST was increased by I.V. injection of IgG of patients and controls and correlated negatively with levels of NPY total IgG autoAbs. Low and high affinity NPY IgG autoAbs antagonized NPY-induced anti-immobility effect. Higher affinity autoAbs antagonized more NPY-induced food intake.

Conclusion: These data suggest that changes of plasma levels of anti-NPY autoAbs are relevant to altered mood while changes of their affinity may be involved in altered appetite in depressive disorder.