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THYROID AXIS ACTIVITY AND SUICIDAL BEHAVIOR IN DEPRESSED PATIENTS

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Objectives: The aim of this study was to investigate the relationship between suicidal behavior and hypothalamic-pituitary thyroid (HPT) axis activity in depressed patients.

Methods: The serum levels of thyrotropin (TSH), free thyroxine (FT4), and free triiodothyronine (FT3) were evaluated before and after 8 AM and 11 PM TRH challenges, on the same day, in 95 medication-free DSM-IV euthyroid major depressed inpatients and 44 healthy hospitalized controls

Results: Compared to controls:

1) patients with a positive suicide history (PSH; n=53) showed lower basal FT4 (at 8AM: $p < 0.005$; at 11PM: $p < 0.03$), but normal FT3 levels, while patients with a negative suicide history (NSH; n=42) showed normal FT4 and FT3 levels;

2) TSH responses to TRH (delta TSH) were blunted in NSHs (at 8 AM: $p < 0.03$; at 11PM: $p < 0.00001$), but not in PSHs.

Compared to NSHs, basal FT4 levels were reduced in PSHs (at 8AM: $p < 0.002$; at 11PM: $p < 0.006$). HPT parameters were not significantly different between recent suicide attempters (RSA; n=32) and past suicide attempters (PSA; n=21). However, compared to controls, RSAs showed lower 11PM-deltaTSH ($p < 0.04$) and lower basal FT4 values (at 8AM: $p < 0.002$; at 11PM: $p < 0.008$).

Conclusions: Our results indicate that various degrees of HPT axis dysregulation are associated with the history of suicide. In NSHs, one may hypothesize that hypersecretion of hypothalamic TRH (as reflected by decreased TRH receptor responsiveness) represents a compensatory mechanism to maintain normal thyroid hormone secretion. In PSHs this mechanism is ineffective.