

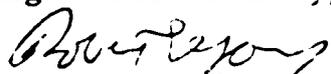
FROM: SGHME

10 February 1975

SUBJECT: Final Report on Project F-29(72), Effect of Thyrotropin-releasing Hormone (TRH) on pituitary secretion of growth hormone (HGH) and Thyrotropin (TSH) inpatients with acromegaly

TO: SGS/Dr. McPhaul

1. Introduction: This investigation was prompted by the observation in a few patients with acromegaly that TRH caused a rise in growth hormone whereas the normal subjects the usual response is no change or a decrease.
2. Methods: Eight patients with active acromegaly were studied. All had the routine test used in acromegaly of glucose suppression of growth hormone levels and either arginine or insulin stimulation with growth hormone levels, in addition to the TRH Test. In addition, all patients had growth hormone levels drawn every half hour over a five hour period corresponding to the time of day when the above mentioned tests were done to establish the normal variation in that patient of growth hormone levels. The growth hormone and TSH assays were performed by double antibody radioimmunoassay previously perfected in our laboratory.
3. Results: Baseline growth hormone levels in the patients varied between 20 and 180 nanograms/milliliter, and none of the patients had suppression of their growth hormone levels when given glucose. Also as expected by previous reports response to arginine and insulin varied with one patient showing a paradoxical fall in growth hormone levels, the others showing various increments in growth hormone levels. In response to TRH seven of the eight patients had a significant rise in growth hormone levels. The levels of growth hormone determined after TRH were higher than obtained in any of the above stimulation studies. The one patient who did not respond to TRH had very high baseline levels of 180 ng/ml range which did not respond to any of the various stimulation studies. The baseline TSH levels in these patients were normal and the response to TRH in terms of TSH were also normal. No complications or side effects were observed from the TRH test.
4. Conclusion: The results were in accord with what has now appeared in several articles in the literature. Contrary to response in normals TRH has marked growth hormone releasing effect on acromegalics and the magnitude of growth hormone release effect is greater than that with either arginine or insulin hypoglycemia.


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