

Effects of Acute Stress on Thyroid Function

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Abstract : Background and Objectives: The relationship between the adrenal axis and the thyroid axis is very complex. Several studies have shown a possible relationship between the activation of the HPA axis and the function of the thyroid gland. The aim of it study was to investigate the structure and activity of the thyroid gland after adrenal activating treatment in female Wistar rats and to evaluate the circulating cortisol in a population of women with thyroid dysfunction. Material and methods: The work was carried out in female Wistar rats divided into two groups: a control group (T) and a treated group (S) receiving a daily intramuscular injection of Cortrosyn at a rate of 0.01 mg/100g of body weight (BW) for 20 days and in a population of women of reproductive age divided into two groups: the control population (C) and the population with thyroid dysfunction (hypothyroidism and hyperthyroidism). Hormone levels are determined by radioimmunoassay and immunoradiometry. The thyroid gland is fixed for histological study. Results : Administration of Cortrosyn to rats at doses of 0.01 mg/100 g BW shows a significant decrease in food and water consumption, resulting in reduced body weight and changes in the structure of the thyroid gland. Significant changes in plasma thyroid hormone levels in our animals and significant changes in plasma cortisol levels in the hyperthyroid were observed with an interrelationship between the two glands. Conclusion: These results demonstrate that activating factors of the HPA axis such as stress can cause structural and hormonal changes in the thyroid gland.

Keywords : thyroid, hyperthyroidism, hypothyroidism, stress, cortisol.

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