

## Effects of induced-hypo and hyper-prolactinemia in male rabbit's liver

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Prolactin is a polypeptide hormone secreted from of the anterior pituitary gland. The hormone levels can result from physiological causes, such as pregnancy and stress, or pharmacological causes, including the use of neuroleptics and opiates. Prolactin influences a large spectrum of mammalian tissues, including the mammary glands, gonads, immune cells, and liver's function and growth.

This study was performed on New Zealand male rabbits with access *ad libitum* to food and water until the end of the experiment (30 days). The animals divided into three groups were daily injected with sulpiride (7,5 mg/ml/kg), bromocriptine (400 µg/ml/kg), or saline solution (control group). Animals were decapitated and liver homogenates prepared. The level of total prolactin was determined in serum and liver tissue homogenates of normal, bromocriptine and sulpiride- treated male rabbits by an Immunoradiometric assay (IRMA). The characteristics of the binding of I<sup>125</sup> labeled anti-prolactin antibody with prolactin in liver homogenates were investigated using the technical basis of radio receptor assay (RRA) and different factors were studied (antigen concentration, antibody concentration, pH, time , temperature) .The activity of two enzymes, glutamic pyruvic transaminase (GPT) and alkaline phosphatase (AP) was determined in liver homogenates of the studied groups with appropriate kits.

This study shows the presence of the prolactin in male rabbit's liver with a significant increase ( $P \leq 0.01$ ) of hormone levels in serum and liver homogenate of the group treated with sulpiride compared to control group. However, in bromocriptine group, there was a significant decrease ( $P < 0.01$ ) in prolactin levels after the day 15. The study of I<sup>125</sup> labeled anti-prolactin antibody with prolactin complex confirmed that it is unstable and temperature-dependant . The protein concentration and relative liver weights increases significantly ( $P < 0.05$ ) in the sulpiride group .Our results indicated an alteration of enzyme activities following prolactin levels in serum and liver homogenates especially in the case of GPT .

We conclude that the administration of sulpiride affects metabolic prolactin functions on rabbit's liver. In addition, the ability to measure free hormone by the IRMA method in the liver could help to investigate prolactin in other healthy tissues or in pathological cases such as breast cancer .

Key words: Prolactin, liver, rabbit, metabolic effects, IRMA, enzymes.