EFFECT OF CALCIUM INTAKE ON THE INTERRELATIONSHIP BETWEEN BONE TURNOVER AND ENERGETIC METABOLISM IN GENETICALLY PREDISPOSED OBESE RATS.

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Introduction: According to literature, bone, fat mass and pancreas are interrelated through osteocalcin (BGP), bone resorption, insulin and leptin levels. Ca intake might affect these interrelationships by inducing changes in bone resorption. Obesity could also affect bone and pancreas interrelationship through the effect of, leptin in the osteoblastic insulin receptor or in sequestering vitamin D in fat pad.

Objective: to evaluate changes in these interrelationship by feeding a low, normal or high Ca diet (LCa NCa and HCa, respectively), in growing genetically predisposed obese IIImb/β (O) rats

Materials and methods:

Experimental design:

- Pregnancy and lactation continued with the same experimental diet
- Weaning: male pup (40-45 g BW). They continued feeding the same maternal experimental diet "ad libitum", until 50 days of age.

Determinations:

Food consumption, intake efficiency and body weight (BW): 3 times/week.

At the end of the study:

- Serum Ca, phosphorus (P), BGP, CTX, 25OHD, glucose and insulin;
- Ca absorption percentage, total body of Ca, P and Ca/P ratio;
- Liver weight, fat absorption, total body fat, adipose perigonadal and retroperitoneal percentage (PG+RP%) pads

Results:

- The interrelationships between bone, fat mass and pancreas was not only modified by Ca intake but also by the dietary Ca/P ratio, in genetically predisposed obese IIImb/β rats.

Conclusion: The interrelationships between bone, fat mass and pancreas was not only modified by Ca intake but also by the dietary Ca/P ratio, in genetically predisposed obese IIImb/β rats.