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11.12 Retinol Binding Protein (RBP-4) and Sympathetic Interaction in Overweight Hypertensives: Effect of Intensive Dietetic Treatment

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Introduction. Body weight reduction represents the main step in the management of overweight-obese hypertensive patients. Plasma RBP-4 levels are elevated in several experimental models of insulin resistance even if their relationship is less clear.

Aim. Our study evaluated the effect of an intensive dietetic treatment on blood pressure levels, on homeostasis model assessment of insulin resistance index (HOMA-IR), on body weight change in a group of patients affected by high blood pressure (stage 1), overweight or obese (n=31, age 19-66 years, BMI 28,3-34,4 Kg/m2).

Methods. Plasma RBP-4 and catecholamine levels were determined before and after the dietetic treatment period. Diet was administered for 24 weeks (caloric intake 1700 Kcal/die, Na <130 mEq/die, K 4 g/die, Ca 1100 mg/die and Mg 430 mg/die) and checked by periodic urine sampling and analysis of electrolyte secretion (every 6 weeks).

Results. After 24 weeks, 25 patients completed the study (drop out of 6 patients) body weight was reduced (range 1,1-9,7 Kg) and blood pressure levels were normalized (28%, <140/90 mm Hg) in 7 out of 25 patients. HOMA-IR was reduced (-13%, $p<0.05$) as well as plasma RBP-4 (34,4 + 7,3 umol/l before and 26,4 + 5,9 umol/l after diet period, -16 % ($p<0.05$); a trend of reduction was observed in plasma norepinephrine levels (from 191 + 54 to 173 + 42 pg/ml, -13 %, $p=0.067$). No significant correlation was found between RBP-4 and norepinephrine plasma levels.

Conclusions. An intensive low-caloric dietetic treatment including a reduced sodium intake, an increased potassium, calcium and magnesium intake improved insulin sensitivity and reduced plasma RBP-4 levels; Sympathetic activity was also partially lowered after the diet period without a relationship with RBP-4 reduction.