SUMMARY

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Leptin is a 16 kilo dalton protein that is encoded by the OB gene *(Zhang et al., 1994)* and secreted by adipocytes *(Considine et a.l, 1996).*

In humans, leptin circulates in the blood with about 50% in the free form and the remainder attached to binding proteins *(StenvinkeL 1998).* It crosses the blood brain barrier by a saturable transport mechanism *(Banks et al., 1996),* binds to its receptor in the hypothalamus *(Lee et aL, 1996)* and exerts its actions by restraining the synthesis and release of neuropeptide Y from hypothalamic nuclei ultimately causing anorexia *(Schwartz et al. 1995) (Stephens et aL, 1995),* stimulating the miogenesis *(Susulic et al., 1996)* and increasing metabolism *(StenvinkeL 1998).*

Leptin is primarily cleared from the circulation by the kidney *(Cumin et aL, 1996).*

Protein calorie malnutrition is a common problem in patients with chronic renal failure either on conservative treatment *(Kaufmann et al.,, 1994)* or on regular haemodialysis *(Kopple, 1994) (Kumar et a., 1994).* The primary cause for this malnutrition is thought to be anorexia *(Bergstrom et a., 1995).*

The aim of this work is to study the serum leptin concentration in patients with chronic renal failure and to evaluate its possible association with anorexia and its possible value for assessment of nutritional status in these patients.

The study was carried out on 68 subjects divided into 2 groups:

Group I:

Eighteen normal volunteers as a reference group.

Group II:

Fifty patients with chronic renal failure on regular haemodialysis.

For each subject the following was performed:

- Full history and thorough clinical examination.
- Anthropometric measurements including: height, weight, and BMI.
- Serum albumin level.
- Serum cholesterol level.
- Renal function tests (serum creatinine, and blood urea level).
- Complete blood picture.
- Serum leptin level.

The results were as follows:

- Dialyzed patients have significantly lower BMI than the reference group, probably as a result of malnutrition.
- Dialyzed patients have lower serum albumin level than reference subjects probably as a result of malnutrition.
- Dialyzed patients have higher leptin levels than reference groups. This is due to defective leptin excretion or increased synthesis.
- Anorexia is much more prevalent in patient; than in reference group, there was a significant increase in serum leptin level in patients with positive anorexia.
- Non significant positive correlation is found between age and serum leptin levels in the reference group and patients group.

- Non significant positive correlation is found between serum leptin level and blood urea level and non significant negative correlation with serum creatinine level in the patient group.
- Non significant positive correlation is found between serum leptin level and duration of dialysis.
- A significant positive correlation between serum leptin level and B.M.I is found in the reference group while a significant negative correlation between serum leptin level and BMI is found in the patients group.
- A significant negative correlation is found between serum leptin level and serum albumin level in the patient group. While in the reference group no significant correlation is found.
- A significant negative correlation between serum leptin level and lymphocytic percentage is found probably as a result of malnutrition.