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Estradiol testosterone ratio, serum retinol binding protein 4 and insulin resistance in overweight and obese Egyptian men

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Overweight and obesity are the leading causes for the development of multiple adverse metabolic effects. Retinol Binding Protein 4 (RBP4), a peptide secreted from adipocytes and hepatocytes, provides a new link between obesity and insulin resistance. The objective of this work is to determine RBP4 serum levels and evaluate its relationship with serum testosterone (T), serum estradiol (E2), E2/T ratio and insulin resistance in overweight and obese Egyptian men. The study included 65 men which were subdivided into (20 normal weight, 20 overweight and 25 obese). Their mean age was (43.88±5.52). Serum RBP4 was measured by the enzyme linked immunosorbent assay. Serum RBP4 and E2/T ratio were significantly higher, while serum T was significantly lower in overweight and obese groups as compared with normal weight group. In all subjects, serum RBP4 correlated positively with BMI, waist circumference, waist-to-hip ratio (WHR), HOMA-IR, serum E2 and E2/T ratio. In contrast, it correlated negatively with quantitative insulin sensitivity check index (QUICKI) and serum T. In multiple linear regression analysis serum RBP4 was independently associated with E2/T ratio. It could be concluded that serum RBP4 is elevated in overweight and obese as compared with normal weight subjects, and that the disturbance in E2/T ratio seem to affect RBP4 serum levels and insulin sensitivity in obese.

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A study on using photoplethysmographic(PPG) signal as a non invasive screening device of type 2 diabetes mellitus

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Diabetes mellitus is a non communicable disease, increasing its prevalence day by day becoming a heavy burden to the individual and to the country. It carries high morbidity and mortality mostly at later stages. Most patients are asymptomatic at early stage of the disease. Most clinicians ask for fasting blood sugar or random blood sugar levels as a screening method for diabetes. Taking blood samples carry risk of the procedure and it will cause pain to the patients which they hesitate to do. Study on variations of wave form in diagnosed patients with diabetic between age 50-65 years using non invasive PPG signal taken at finger tip. 9 patients with isolated diabetes (ie. Non hypertensive, non dyslipidaemic, no ischaemic heart disease) who are on regular antidiabetic treatment and 11 non diabetic (with neither hypertension, dyslipidaemia or nor ischaemic heart disease) between age 50-65 years females were selected from NHSL (National hospital of Sri Lanka) and Sri Jayawardanapura hospital. They were interviewed and their blood flow was recorded using PPG signal for 5 minute duration connecting the probe to the index finger. Standard indices of wave form were calculated during data analysis. Out of 9 diabetic patients, 8 were identified as diabetics by calculating the standard indices of the pulse wave form. Our conclusion is calculated indices of PPG signal has a sensitivity of over 88% in screening of type II diabetes in age 50-65 years females.

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