Serum Resistin level in individual with diabetes mellitus and at high risk of developing Coronary heart disease

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Introduction:

The role of adipocyte hormone resistin in modulating insulin sensitivity and glucose tolerance are of common interest and important in studies of diabetes mellitus. Recently, human resistin levels have emerged as additional molecular links between obesity, diabetes mellitus and atherosclerosis. The pro- inflammatory resistin contributes to the early stages of atherosclerosis and diabetic complications by promoting endothelial dysfunction and possibly associated with macrophage activation.

Material and Methodology: 319 subjects were recruited for cross-sectional study at King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia. 151 of the participants were males and 168 were females. Body mass index for the participants was calculated from height and weight. Blood samples were analyzed for biochemical parameters. Serum resistin level was measured for the participants including those who are diabetics and at high risk to develop atherosclerotic cardiovascular diseases.

Result: Serum resistin levels in control group was 14.41 ± 11.5µg/ml compared to 18.21 ± 15.42 µg/ml in diabetic group P > 0.085. For type -2 diabetes mellitus it was 18.1 ± 15.88 µg/ml whereas in type – 1 diabetes mellitus it was 19.1 ± 12.44 µg/ml. The level of resistin in neuropathy (n=25) was 17.73 ± 13.51 µg/ml; nephropathy (n=28) 22.52±20.01 µg/ml; retinopathy (n=38) 20.18 ± 14.83 µg/ml; cardiopthy (n=67) 20.09 ± 16.97 µg/ml; hyperlipidemia (n=96) 16.65 ± 15.64 µg/ml and hypertension (n=106) 20.35 ± 17.9 µg/ml. In body mass index more than 29 resistin correlated with age, creatnine kinase and CKMB where no correlation with Tropinin I (cTnI) and vitamin 25 (OH) D was found in this study.

Conclusion: Several in vitro and in vivo studies have confirmed that adipoikne resistin have numerous important functions in the body. Tremendous efforts are needed to explore the physiological mechanism of resistin action in metabolic disorders and inflammatory autoimmune disorders. In this study the level of serum resistin showed

slight increase in diabetic patients compared to control group and it was higher in nephropathy compared to the other complications, whereas hyperlipidemia showed lower resistin level compared to other complications. On the other hand blood urea and creatinine levels that usually detect in renal dysfunction when increased showed significant correlation with the resistin level. Thus the role of resistin as pro-inflammatory adipokines may affect the kidneys dysfunction and the increase in circulating resistin levels may indicates general inflammation, renal disease.