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Effect of anti-diabetic drugs on adipokine levels in diabetes and metabolic syndrome

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Statement of the Problem: Diabesity, the current epidemic in the present world is the growing concern. Adipokine relation with metabolic syndrome (MetS) is a hot topic of research nowadays. In this study, our objective was to estimate the levels of adiponectin, leptin and resistin (ALR) among Type-2 Diabetes Mellitus (T2DM) and Metabolic syndrome (MetS) patients, besides studying the effect of various drugs on ALR levels.

Methodology: 400 T2DM cases, 150 MetS cases and 300 normal healthy volunteers were taken. Subjects were categorized under various groups, i.e., Group-1 (Metformin treated) and Group-2 (glimepiride treated) and cases were also categorized as obese with T2DM (Group-A), obese without T2DM (Group-B) and T2DM only (Group-C). The serum ALR levels were estimated by ELISA and biochemical parameters were also evaluated before and after treatment.

Results: Adiponectin levels were found to be significantly lower in T2DM cases as compared to controls while leptin and resistin levels were found to be significantly higher than controls. Taking the effect of drugs into consideration, the effect on adiponectin and resistin levels was found to be significant in Group-2 before and after treatment while more effect was observed in leptin among Group-1 (Metformin)-treated cases. The adiponectin levels were found to be significantly lower in Group-B, while leptin and resistin levels were found to be significantly higher among obese cases when compared to T2DM cases. Glimepiride also showed more effect on FBG, HbA1c percentage levels, while Metformin showed more effect on lipid profile levels.

Conclusion: ALR levels are affected by use of anti-diabetic drugs among which glimepiride showed more effect on adiponectin and resistin, while leptin gets affected more by Metformin. ALR alterations in diabetes may be due to obesity as we observed more ALR changes among obese cases, when compared to T2DM ones.

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