

Perirenal Fat Thickness in Relation to Glomerular Filtration Rate in Adult Males With Type 2 Diabetes

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Abstract

Background:

Diabetic kidney disease is a one of the microvascular complications of diabetes. Perirenal fat is a fat pad surrounding the kidneys, located between the renal fibrous membrane and the renal fascia in the retroperitoneal space. It was found that perirenal fat thickness could predict reduced glomerular filtration rate in patients with type 2 diabetes.

The aim of work: to assess the relationship between Perirenal fat thickness and eGFR in adult males with Type 2 diabetic mellitus.

Methods:

This was a cross-sectional study conducted on 60 diabetic patients (Males), aged between (40-65) years old. Patients were divided into two groups according to the PrFT. Along with anthropometric and some biochemical measures, CT abdomen was done to assess perirenal fat thickness. eGFR was calculated by the modification of diet in renal disease (MDRD) equation.

Results:

In this study, there was significant positive correlation between perirenal fat thickness and patients' height, weight, body mass index, waist circumference, and Urinary Albumin creatinine ratio, while it was negatively correlated with eGFR in all studied populations. Univariate regression analysis showed that the most predictive factor for prediction of Perirenal fat thickness was waist circumference. ROC curve analysis showed that the Cutoff value of perirenal fat thickness in detection of GFR less than 60 ml/min/1.73m² was 30.15mm, its sensitivity was found to be 72.2%, specificity 69% (AUC: 0.729), PPV =50%, NPV= 85.3%, with diagnostic accuracy 70%.

Conclusion: Perirenal fat thickness was independently and negatively correlated with eGFR, suggesting a possible role of PrFT in kidney dysfunction in T2DM patients.

Keywords: Perirenal fat thickness, type 2 diabetes mellitus, estimated glomerular filtration rate.