

Evaluation of Glomerular Hyperfiltration in Obesity

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Abstract:

Background:

Obesity is a progressive chronic disease that is a renal risk factor. Renal hyperfiltration is an early stage in the development of chronic kidney disease (CKD).

Objective:

The objective of our study is to determine the prevalence of glomerular hyperfiltration in obese patients.

Materials And Methods:

This is a prospective and descriptive study conducted over a period of 4 months. All patients with BMI over 30 kg/m² who do not have diabetes, hypertension or another apparent cause of CKD.

Results:

A total of 85 patients were included, the mean age was 41.96 years, with a female majority. The mean BMI was 38.24kg/m² and the mean abdominal waist circumference was 114.57cm. Obesity was common in 55.88% and secondary in 44.11%. The prevalence of glomerular hyperfiltration was 85.18% by Cockcroft formula and 48.33% by MDRD formula.

Discussion:

Obesity is a risk factor for CKD, which promotes increased renal blood flow by vasodilation of the afferent glomerular arteriole, resulting in glomerular hyperfiltration that leads to a change in the glomerular barrier, increasing the risk of developing CKD.

According to several studies, the Cockcroft formula is a better predictor of renal function in obese patients. A 51% increase in GFR in obese patients has been observed. In our study, the prevalence of glomerular hyperfiltration is 85.18% according to the Cockcroft formula.

Keywords:

Obesity, Renal hyperfiltration, Cockcroft formula, chronic kidney disease