

## **Influence of Distribution of Body Fat on Cholesterol Non-HDL and Its Effect on Kidney Filtration**

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**Abstract :** Background: In the XXI century we have to deal with the epidemic of obesity which is important risk factor for the cardiovascular and kidney diseases. Lipo proteins are directly involved in the atherosclerotic process. Non-high-density lipo protein (non-HDL) began following widespread recognition of its superiority over LDL as a measurement of vascular event risk. Non-HDL includes residual risk which persists in patients after achieved recommended level of LDL. Materials and Methods: The study covered 111 patients (52 females, 59 males, age  $51,91 \pm 14$  years), hospitalized on the intern department. Body composition was assessed using the bioimpedance method and anthropometric measurements. Physical activity data were collected during the interview. The nutritional status and the obesity type were determined with the Waist to Height Ratio and the Waist to Hip Ratio. A function of the kidney was evaluated by calculating the estimated glomerular filtration rate (eGFR) using MDRD formula. Non-HDL was calculated as a difference between concentration of the Total and HDL cholesterol. Results: 10% of patients were found to be underweight; 23.9 % had correct body weight; 15,08 % had overweight, while the remaining group had obesity: 51,02 %. People with the android shape have higher non-HDL cholesterol versus with the gynoid shape ( $p=0.003$ ). The higher was non-HDL, the lower eGFR had studied subjects ( $p < 0.001$ ). Significant correlation was found between high non-HDL and incorrect dietary habits in patients avoiding eating vegetables, fruits and having low physical activity ( $p < 0.005$ ). Conclusions: Android type of figure raises the residual risk of the heart disease associated with higher levels of non-HDL. Increasing physical activity in these patients reduces the level of non-HDL. Non-HDL seems to be the best predictor among all cholesterol measures for the cardiovascular events and worsening eGFR.

**Keywords :** obesity, non-HDL cholesterol, glomerular filtration rate, lifestyle

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