

# HDL SUBGROUPS AND THEIR PARAOXONASE-1 ACTIVITY IN THE OBESE, OVERWEIGHT AND NORMAL WEIGHT SUBJECTS

KÜBRA DOĞAN<sup>1</sup>, mehmet senes<sup>2</sup>, ANARA KARACA<sup>2</sup>, DAMLA KAYALP<sup>3</sup>, SEYFULLAH KAN<sup>4</sup>, Nese Ersoz Gulcelik<sup>5</sup>, YALÇIN ARAL<sup>6</sup>, and Dogan Yucel<sup>7</sup>

<sup>1</sup>Sivas Numune State Hospital

<sup>2</sup>Ankara Training and Research Hospital

<sup>3</sup>Yozgat City Hospital, Ministry of Health

<sup>4</sup>Süleyman Demirel University Faculty of Medicine

<sup>5</sup>Gülhane Training and Research Hospital, Ministry of Health

<sup>6</sup>Yozgat Bozok University Faculty of Medicine

<sup>7</sup>Lokman Hekim Universitesi

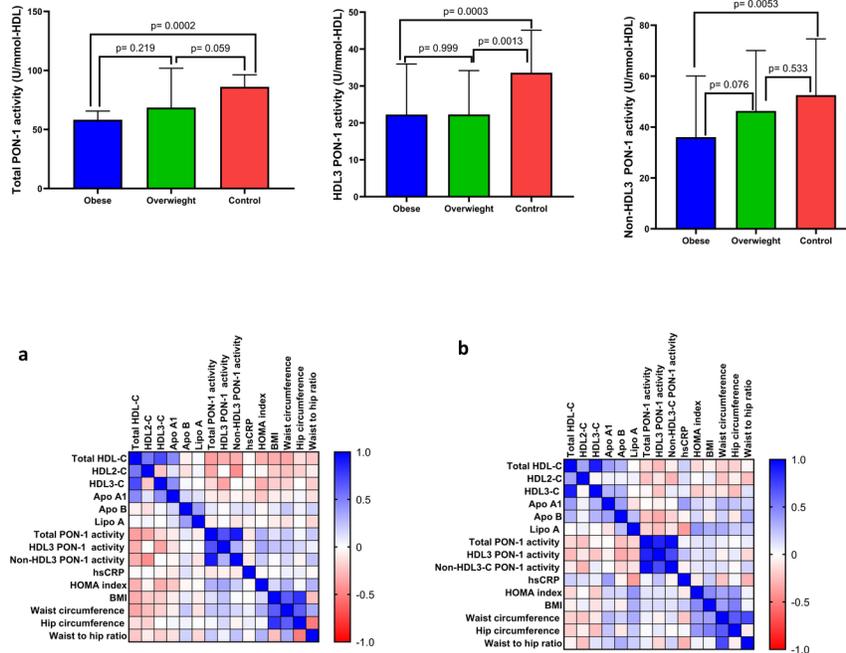
June 30, 2021

## Abstract

**ABSTRACT** Background: Obesity and overweight are significant public health problems due to higher risk for coronary artery disease (CAD). It is very important to determine new predictive markers to identify the CAD risk in obese and overweight. To this aim, we analyzed HDL-C subclass and their paraoxonase-1 (PON-1) activity in obese, overweight and normal weight subjects. Method: 71 newly diagnosed obese, 40 overweight and 30 healthy subjects as a control group were enrolled the study. Serum lipids levels were determined with enzymatic colorimetric method. PON-1 activities and HDL-3 levels were determined by spectrophotometric methods. Non-HDL3-C concentrations were calculated with the subtraction of HDL3-C from total HDL-C. Results: The mean serum levels of total HDL-C, HDL3-C, Non-HDL3-C -C and ApoA1 were higher in control group than obese and overweight groups. There were a statistically significant difference between obese and control group in terms of Lp(a), hsCRP and HOMA index. Higher total PON-1, non-HDL3 PON-1 and HDL3 PON-1 activities were found in the control group compared to obese and overweight groups. Total HDL was weakly negative correlated with the HOMA index, BMI and waist circumference. There was a weak negative correlation between non-HDL3-C and waist circumference. Conclusion: Abnormal HDL-subgroups pattern and decreased PON-1 activities causes increased risk for CVD in obese and overweight individuals. Therefore determination of HDL subgroups and their PON-1 activity improves risk prediction compared with measuring total HDL-C levels and its PON-1 activity alone. Body weight and insulin resistance appear to have a role in the decreased HDL-C levels and PON-1 activity in obese.

## Hosted file

Manuscript.doc available at <https://authorea.com/users/422899/articles/528504-hdl-subgroups-and-their-paraoxonase-1-activity-in-the-obese-overweight-and-normal-weight-subjects>



### Hosted file

Table 1 (3).docx available at <https://authorea.com/users/422899/articles/528504-hdl-subgroups-and-their-paraoxonase-1-activity-in-the-obese-overweight-and-normal-weight-subjects>

### Hosted file

Table 2 (2).docx available at <https://authorea.com/users/422899/articles/528504-hdl-subgroups-and-their-paraoxonase-1-activity-in-the-obese-overweight-and-normal-weight-subjects>