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CARDIOVASCULAR RISK ASSESSMENT IN OBESE PCOS WOMEN BASED ON LDL/HDL RATIO

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Introduction & Objective
To assess cardiovascular disease (CVD) risk, the LDL/HDL ratio is one of the markers. Obesity aggravates polycystic ovarian syndrome (PCOS) and is linked to an increased risk of CVD complications. The objective of the study was to evaluate LDL/HDL ratio in obese PCOS women attending Obstetrics and Gynaecology Clinic, Teaching Hospital, Jaffna.

Methods
An analytical cross-sectional study with a convenient sampling method was used. Among the 125 PCOS women recruited from the Obstetrics and Gynaecology Clinic, Teaching Hospital, Jaffna. 60 women were identified as obese. The weight & height of the obese women were measured, and BMI was calculated. Based on New Asian Guidelines, Obese women were categorised into Obesity Class I (BMI 27.5- 29.9 kgm^{-2}), Class II (BMI 30.0- 34.9 kgm^{-2}) and Class III (BMI ≥35 kgm^{-2}). Fasting blood samples were analysed for serum Total Cholesterol, Triglycerides (enzymatic methods) and HDL-Cholesterol (HDL-C; precipitation method). The LDL-Cholesterol (LDL-C; Friedwald equation) and LDL/HDL ratio were calculated. The LDL/HDL ratio was classified into normal (≤2.5) and elevated (>2.5) categories. Ethical Review Committee, Faculty of Medicine, University of Jaffna gave ethical approval. The data were analysed by SPSS version 25.

Results
The mean BMI and LDL/HDL ratio of the women were 32.34 (±4.27) kgm^{-2} and 3.63(±1.43) respectively. The PCOS women belonged to obese Class I, II and III were 31.67 (19nos.), 51.67 (31nos.), and 16.67% (10nos.) respectively. Among them, 25% and 75% had normal and elevated LDL/HDL ratios. The number of women with normal and elevated LDL/HDL ratios observed in Class I were 3 & 16 nos.; Class II were 11 & 20 nos. and Class III were 1 & 9 nos. respectively. When the LDL/HDL ratios of PCOS women who had normal values were compared between Class I & II women ($p = 0.265$), Class I & III women ($p = 0.907$) and Class II & III women ($p = 0.241$) showed no significant difference. Similarly, LDL/HDL ratios of the PCOS women who had elevated values were compared between Class I & II ($p= 0.306$), Class I & Class III ($p= 0.963$) and Class II & Class III ($p= 0.597$) revealed no significant difference.

Conclusion
Majority of obese PCOS women belonged to different classes had both normal and elevated LDL/HDL Ratios with higher numbers having elevated ratios. However, there was no statistically significant difference between the different classes of Obese PCOS women.