Background & Objective: Although several studies have conducted about the effectiveness of general and central obesity anthropometric indices on profile lipid but so far a few survey are available about their interrelationship. It is also essential to determine the best anthropometric index for predicting of lipid profile in any population. The purpose of current study was to explore this hypothesis in overweight and obese adult women at two clinic centers of Zahedan (southeastern Iran).

Material & Method: Seven hundred and twenty eight overweight and obese women aged 20-60 y who have referred during July 2005 through May 2006 to two clinic centers at Zahedan were studied in this clinical cross-sectional study. According to standard protocol, height, weight, waist circumference (WC) and hip circumference (HC) of participants were obtained and body mass index (BMI)) and Waist-to-hip-ratio (WHR) were calculated. Demographic data were collected by a questionnaire for each subject separately. Total cholesterol (TC), triglycerides (TG), low-density lipoprotein cholesterol (LDL-C) and high-density lipoprotein cholesterol (HDL-C) levels were enzymatically determined. All values were expressed as mean ± SD and the comparison was made by Pearson correlation coefficient method.

Results: Mean (+/-standard deviation) age of women was 32+/−9 years; mean BMI, WHR, WC and HC were 32+/−3.5, 0.89+/−0.13, 99.8+/−12 and 111+/−11 respectively. There was a positive significant correlation between BMI with Age (r =0.18 0.000), WHR (r =0.11 0.003), WC (r =0.49 0.000) and HC (r =0.45 0.000). For WC, the correlation was generally of the same order of magnitude for age, WHR and HC. There was not seen any correlation between WHR and HC with age (r =0.04 0.2 and r =0.02 0.54 respectively). Pearson correlation coefficient revealed that with the exception of HDL-C, BMI and WC indices showed relatively the same order of magnitude positive significant correlation with TC, TG and LDL-C concentration than WHR and HC indices. After adjustment for age and BMI, this result was also kept especially for TC (r = 0.1, 0.01) and TG (r = 0.1, 0.001) for WC index. There was not shown any significant correlation between WHR & HC indices with all of variables after adjustment for age and BMI.

Conclusion: According to obtained results, WC is the best anthropometric index for estimating of profile lipid than WHR and HC indices in Zahedanian overweight and obese women.

Key words: waist-to-hip ratio, body mass index, waist circumference, hip circumference, profile lipid, Zahedan