ESTIMATED CENTRAL OBESITY INDEX – WORTHWHILE SCREENING TEST PROCEDURE OF ABDOMINAL OBESITY

Slavica Shubeska Stratrova

University Clinic of Endocrinology, Diabetes and Metabolic Disorders, Faculty of Medical Sciences,

University "Ss. Cyril and Methodius" Skopje, N. Macedonia, slavass02@yahoo.com

Danijela Janicevic Ivanovska

University Clinic of Clinical Biochemistry, Skopje, Faculty of Medical Sciences, "University Goce

Delchev", Shtip, N. Macedonia, djanicevic@yahoo.com

INTRODUCTION

Central obesity index (COI) is an indicator of central, abdominal obesity, which is the main characteristic of the metabolic syndrome. Dual-energy x-ray absorptiometric (DXA) assessment of the body fat distribution was performed through the COI values determined with a scan of the entire body in comparison to estimated COI values (eCOI) on spine and hip performed scans.

MATIRIALS AND METHODS

COI was determined as a ratio of android (A) tissue percent fat (A-Tf%) and gynoid (G)-Tf% (COI=A/G-Tf%) as well as eCOI=eA/eG-Tf% in 3 groups of women: 1st group of women with Cushing's syndrome (CS) (n=14), 2nd group of obese (O) women (n=21), 3rd group of non obese healthy women (C) (n=22). The examinees were not different according to their age, which was 44.32±13.83 years in the 1st group, 43.33±12.58 years in the 2nd group and 42.56±14.67 years in the 3rd group, as well as according to their BMI, which was 30.02±5.02 kg/m2 in CS, 29.66±4.88 kg/m2 in O, but it was in normal range 21.76±1.43 kg/m2 in non obese control group of healthy women.

DISCUSSION

The values of eA, eG and eA/eG were not significantly different compared to the correspondent values A-Tf%, GTf% and A/G-Tf% in all examined groups (p>0.05). The values of eA and A-Tf% in CS were significantly higher compared to O (P<0.05), as well as compared to C and O+C and in O compared to C (p<0.0001). COI value (1.05±0.15) and eCOI (1.04±0.1) in CS were significantly higher compared to O (p<0.006 and p<0.008) and highly significantly higher compared to C, O+C and in O compared to C (p<0.0001). Estimated values eA, eG and eA/eG correlated highly significantly positively with the correspondent values A-Tf%, G-Tf% and A/G-Tf% (p<0.0001) and COI values correlated highly significantly with eCOI, eA and A-Tf% (p<0.0001) and not significantly with GTf% and eG (p>0.05) in O confirming COI positive association with central, abdominal fat distribution.

RESULTS

The values of eA and A-Tfat% in CS were significantly higher compared to O (P1<0.05), as well as CS compared to C and O+C and in O compared to C (P2,3,4<0.0001). The values of eG and G-Tfat% were not significantly higher in CS compared to O (P1>0.05), but they were significantly higher compared to C and in O compared to C(P2,3<0.0001). A/G-Tfat% (COI) value 1.05±0.15 and eA/eG (eCOI) value 1.04±0.1 in CS were significantly higher ncompared to O (P1<0.006 and P1<0.008) and highly significantly higher compared to C, O+C and in O compared to

C (P2,3,4<0.0001). COI correlated highly significantly with eCOI, eA and A-Tfat% (p<0.0001), but not significantly

with G-Tfat% and eG (P>0.05) in O, confirming COI positive association with central, abdominal Tfat%, and

abdominal fat distribution.

CONCLUSION

DXA indexes COI and eCOI discovered extreme central body fat distribution in CS women, differentiated them significantly and precisely from C and CO, and could be used as diagnostic DXA indexes of extreme central, abdominal obesity in CS and non CS abdominal obese women in DXA body composition and fat distribution assessment. Determination of eCOI is reliable, more practical and faster, with lower radiation and is more acceptable compared to COI, and it can be a routine screening procedure for body composition and body fat distribution assessment, during regular spine and hip scans for osteoporotic risk assessment instead of COI body fat distribution determination with total body composition measured scans which are used in scientific studies and are not necessary to be performed in clinical body fat distribution examinations