BODY FAT DISTRIBUTION CHANGES DURING WEIGHT LOSS DETERMINED BY DUAL-ENERGY X-RAY ABSORPTIOMETRIC INDEXES OF ABDOMINAL OBESITY

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Introduction: Trunk/total tissue mass fat% (Tr/To-TMf%) and trunk/total fat mass % (Tr/To-FM%) as well as android/legs TMf% (A/L-TMf%) and A/L-FM% are indexes of abdominal obesity (IAO) determined by dual-energy X-ray absorptiometry (DXA).
Objective: The effect of weight loss (WL) on body fat distribution was examined through the DXA indexes of abdominal obesity.
Material and methods: Tr-TMf%, To-TMf%, A-TMf%, L-TMf% and Tr-FM%, To-FM%, A-FM% and L-FM%, and their ratios, IAO were determined before and after body WL of mean 20.63% and mean BMI reduction of 21.28% to normal value 22.36kg/m^2 in postmenopausal women.
Results: A/L-TMf% and A/L-FM% values were significantly higher before the WL ($p<0.008$; $p<0.004$). Tr/To-TMf% was higher before WL compared to its values after the weight loss, but with lower significance of the difference ($p<0.013$) as well as Tr/To-FM% ($p<0.0134$). Trunk TMf% and trunk FM% decrease during WL was not significant ($p>0.05$), and because of that Tr/To-TMf% and Tr/To-FM% showed lower significance of the difference compared to A/L-TMf% and A/L-FM%. A-TMf% and A-FM% values were significantly higher before the WL ($p<0.02$), and L-TMf% and L-FM% values were also significantly different ($p<0.001$).
Conclusion: DXA IAO A/L-TMf% and A/L-FM%, lowered significantly after the WL indicating that BW and BMI reduction to normal values were associated with significant reduction of the abdominal fat distribution. They were discovered as better IAO and DXA indicators of body fat distribution assessment compared to Tr/To-TMf% and Tr/To-FM%.