FIBRINOLYSIS, COAGULATION AND ADIPOSITY AMONG PEOPLE OVER 65-YEARS-OLD

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Introduction
Fibrinolysis refers to the break down of fibrin and removal of blood clots, which is the opposite process of coagulation. Thus, high concentrations of plasminogen activator inhibitor-1 (PAI-1) inhibit fibrinolysis once PAI-1 plays against to the conversion of plasminogen to plasmin. It is well established that adipose tissue is an active organ that secretes numerous bioactive substances including PAI-1 (also secreted from liver). Since a few years ago PAI-1 has been associated with metabolic syndrome. Fibrinogen or factor I is a pro-coagulant agent and by the action of enzyme thrombin is converted into fibrin which in turn traps erythrocytes and other cells to form a blood clot.
The purpose of the present research was to analyse and establish a relationship between: a) body weight-PAI-1 and body weight-fibrinogen; b) body mass index-PAI-1 and body mass index-fibrinogen; c) waist circumference-PAI-1 and waist circumference-fibrinogen and; d) waist/height ratio-PAI-1 and waist/height ratio-fibrinogen in a population over 65 years old, including women and men.

Methods
Seventy women (77.53±7.99 years old) and forty four men (75.43±6.64 years old), aged between 65 and 95 years old participated in this study. Samples of 4.5mL fasting blood were collected and analysed according to the standard procedures as well as anthropometric indices. The inferential statistical analysis was performed using the bivariate Pearson’s correlation.

Results
Regarding the women group PAI-1 correlated positively (p<0.05) with body weight (r=.26), body mass index (r=.30) and waist/height ratio (r=.24). The r value found (0.23) in the relationship between PAI-1 and Waist circumference did not attained statistical significance (p<0.05). In respect to fibrinogen it was not found any significant correlation (p<0.05) with the various anthropometric measures considered.
Concerning the men group the results did not show any statistical significance (p<0.05) Pearson’s bivariate correlation coefficient between both coagulation and fibrinolysis factors considered and the four anthropometric variables: body mass, body mass index, waist circumference and waist/height ratio.

Discussion/Conclusion
In female participants increased fatness measured from body mass, body mass index, waist circumference and waist/height ratio was associated with less desirable profile of fibrinolysis as indicated by improvement in PAI-1. In respect to coagulation no relationships were found. The body fatness in male participants did not correlate with coagulation or fibrinolysis. These results partially agree with an emergent growing body of evidence that support an association between obesity, and particularly central obesity, with fibrinolysis impairment and trombogenesis elevation compared to those with lower abdominal obesity indices.

The different relationships observed from women and from men for PAI-1 suggests variation across subgroups of older people that implies a different approach process.

Keywords: Adipose Tissue, Elderly