P009 The effect of adrenaline on monocyte adhesion in obesity and insulin resistance.

Sarigianni M[2], Paletas K[2], Kaloyianni M[1], Kostidou E[1], Tsapas A[2], Koliakos G[3].

[1]Laboratory of Animal Physiology, Department of Biology, School of Science, Aristotle University, Thessaloniki; [2]Metabolic Diseases Unit, Department of Internal Medicine, Medical School, Aristotle University, Thessaloniki; [3]Department of Biological Chemistry, Medical School Aristotle University, Thessaloniki, Greece.

In the present study the effect of adrenaline on obese, with and without insulin resistance and controls monocyte attachment to laminin was estimated.

Monocytes were isolated from 6 healthy obese subjects, 6 insulin resistant obese subjects and 6 healthy age- and sex-matched controls. Insulin resistance status was estimated with the method of euglycemic hyperinsulinemic clamp. Monocyte attachment to laminin was estimated using a myeloperoxidase assay.

Adrenaline causes an increase in both obese and healthy monocyte attachment to laminin as compared to the absence of adrenaline. The effect of adrenaline in monocyte attachment to laminin was higher in healthy volunteers as compared to obese patients. The presence of the inhibitors of the Na^+-H^+ exchanger-1, PKCs, NO synthase and actin polymerization together with adrenaline counteracted the increase in monocyte attachment observed by adrenaline alone. Furthermore, no differences on adrenaline action between insulin resistant and insulin sensitive patients were observed. On the contrary, in insulin resistant subjects the action of inhibitors was more pronounced as compared to insulin sensitive subjects.

Our results indicate that control monocytes attach to laminin at a higher degree in the presence of adrenaline, as compared to obese patients. Moreover, adrenalin affects monocyte attachment to laminin through activation of NHE-1, PKC, NO synthase and actin polymerization.