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PO37

Title: INFLUENCE OF ADIPOCYTE SECRETIONS ON PROLIFERATION PROCESS AND TUMOR ANGIOGENESIS.

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Abstract: Obesity, which incidence dramatically increases, is an established risk factor for breast cancer in postmenopausal women with a higher risk of poor final outcome independently of tumor stage. Adipokines, secreted by adipose tissue which surround normal or tumor mammary epithelial cells, could affect mammary tumorigenesis. Adipokines, whose plasma concentrations are modulated in case of obesity, may have an impact on proliferation processes and tumor angiogenesis. In this context, the objective of this research project was to characterize the impact of adipocyte secretions from obese or lean women on tumor proliferation and on the key steps of angiogenesis, in order to better understand i) the influence of obesity on these two processes and ii) the dialogue between tumor cells and adipocytes.

Mature adipocytes (MA) obtained from lean (MA20) or obese women (MA30) were cultured and the effects of MA supernatants (Sn, Sn20 and Sn30 respectively) were evaluated in vitro on tumor proliferation (fluorescent resazurin test) and on different steps of angiogenesis (proliferation, migration and endothelial tube formation by endothelial cells HUVEC). The influence of Sn obtained from co-cultures between MA20 or MA 30 and human breast cancer cells MCF-7 (respectively Sn7/20 and Sn7/30) was also investigated on angiogenic process.

Our preliminary results showed that the proliferation of MCF-7 was more increased in the presence of Sn30 (50% vs. Control (T), $p < 0.001$) than Sn20. Similarly, angiogenesis was stimulated in case of obesity since Sn30 increased proliferation (53% vs T, $p < 0.001$), migration (63% vs T, $p < 0.001$) of HUVEC cells and their endothelial tube formation. All these determinations were more influenced after contact with Sn7/20 and Sn7/30. Statistical analyses was realized using paired t-test (Statview). These preliminary results suggest that a profound interaction exists between adipocytes and epithelial cancer cells, which seems more important in case of obesity. Thus, the identification of adipokines, responsible for alterations inducing tumor progression, appears necessary in order to target a preventive strategy.