Evaluation of inflammation and lipid droplets markers on different depots of adipose tissue.

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Adipose tissue is now recognized as a dynamic organ with impact in immune system, besides the regulation of energy homeostasis. Obesity is characterized by elevated expansion of adipose tissue, accompanied by a moderate chronic inflammatory condition directly related with the development of others comorbidities, such as type II diabetes and cardiovascular disease. Here we investigated the expression of genes and proteins related to adipogenesis and inflammation on differences depots of adipose tissue of morbid obese patients and murine experimental model of obesity. Samples of human adipose tissue were obtained during bariatric surgery and murine white adipose tissue (WAT) was obtained from mouse CC57Bl/6 submitted to normal diet (ND) and high fat diet (HFD). The human samples were analyzed by qPCR assay. Subcutaneous and visceral adipose tissues did not show differences between the expression of perilipin, adipophilin (ADRP), adiponectin and leptin receptor. Interestingly, analysis of perilipin and ADRP by western blot shows higher expression of these proteins on VC adipose tissue when compared to subcutaneous depot, as well as on adiponectin analysis. Surprisingly, on the four murine WAT depots analyzed for the there is no significantly difference of perilipin protein expression between those them, either when compared samples from ND and HFD mouse. Taken together our results show that distinct depots of adipose tissue could contribute in a different manner to molecular alterations on obesity. Moreover, it is possible to consider that although murine experimental model of obesity has been very useful on the study of this disease, some particular characteristics should be considered before making a direct comparison between murine and human adipose tissues.