TITLE: RELATIONSHIP BETWEEN GUT MICROBIOTA, GHRELIN AND LEPTIN LEVELS AND INFLAMMATORY PROFILE OF OBESE AND EUTROPHIC WOMEN.

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ABSTRACT: Obesity is a multifactorial disorder, characterized by excess fat accumulated in adipose tissue with health damages. The gut microbiota has been one of the most widely studied factor, due to its physiology interaction with the host. We aim to correlate the nutritional, inflammatory and hormonal profiles to the gut microbiota that characterize obese and eutrophic women.We evaluated 40 women. Twenty women were diagnosed with obesity and 20 women were in eutrophic state. Quantification of the Firmicutes and Bacteroidetes, as well as *Lactobacillus* spp, *Clostridium* spp., *Bacteroides* spp and *Escherichia coli* was carried out by PCR real time. Eighteen cytokines, ghrelin and leptin were also performed on the serum of women.Obese women presented all altered nutritional variables when compared to control. The *Firmicutes/Bacteroidetes* proportion was higher in obese woman, as well as the *Lactobacillus* spp and *Bacteroides* spp. quantification. *E. coli* and *Clostridium* spp quantification was higher in control group. We observed positive correlation between IL-6, TNF-α, INF-γ and IL-10 and nutritional variables weight, Body Mass Index (BMI), Total Body Fat, and waist hip ratio. Positive correlation between leptin levels and nutritional variables were observed, and negative correlations between Ghrelin levels and nutritional variables were also observed. We conclude that in this study the gut microbiota has a relationship with obesity,as well as changes and interactions in intestinal microbiota can define subsets of individuals with different metabolic risk profiles and this condition was associated with inflammatory profile and alterations in ghrelin and leptin profile in obese women, but more studies are needed to better

elucidate between relationship the gut microbiota, obesity and inflammatory and hormonal profiles.

Keywords: Gut microbiota. Obesity. Cytokines. Ghrelin. Leptin.