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Acylated Ghrelin, Obesity and Insulin resistance are associated with depression severity in Postmenopausal Women

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Increased rates of obesity and mood disorders has been evidenced during postmenopause. We have previously shown increased depression and anxiety scores in postmenopausal overweighted women. Although an involvement of ghrelin in mood modulation has been suggested, its role is still ambiguous and has not been established in postmenopause. The association between total and acylated ghrelin levels with depression and anxiety symptoms in postmenopausal women was investigated in the present study. Fifty-five postmenopausal women with depression symptoms (age 50-65), who were not in use of hormonal or antidepressant treatments, were included. Depression and anxiety scores (Beck's Depression (BDI) and Anxiety (BAI) Inventories, Patient Health Questionnaire-9 (PHQ-9)), bioimpedance anthropometry, blood biochemical and hormonal levels, were determined. Postmenopausal women were then allocated into three groups according to the BDI classification: mild (n=26), moderate (n=22) or severe (n=7) depression. Data were analyzed by either Anova (and Tukey post-hoc) or Kruskal-Wallis, for $p < 0.05$. Pearson's correlation and linear regression models were applied. Severe depression group had higher total and acylated ghrelin levels than those of mild depression. Multivariate regressions showed that acylated ghrelin and BMI were positively associated with BDI, while acylated ghrelin and HOMA-IR were positively associated with PHQ-9. BAI was positively associated with WHR. The results shows that the higher the acylated ghrelin levels, the BMI and the insulin resistance, the more severe are the depression symptoms in postmenopausal women. This is the first study showing an important association between acylated ghrelin levels and the severity of the depression symptoms in postmenopausal women. Further investigations are warranted to assess if the acylated ghrelin levels may be used as a criterion describing depression prognosis as well as treatment effectiveness in postmenopause.

Keywords: ghrelin, postmenopause, depression, anxiety, mental health, abdominal obesity, insulin resistance.

Biography:

Maria Fernanda Naufel is a Postdoctoral researcher / Departamento de Fisiologia, Programa de Pós-Graduação em Nutrição – Universidade Federal de São Paulo – UNIFESP/EPM. she is graduated as a Dietitian, specialist and master at Nephropediatrics and PhD at Nutrition from Universidade Federal de São Paulo (UNIFESP). Research experience focusing on clinical nutrition, acting on the following subjects: gut hormones, obesity, sleep and mood disorders, nephrology and postmenopause. At the moment works as a postdoctoral researcher at the Pós-Graduação em Nutrição-UNIFESP. Current project: The influence of obesity on sleep and mood disorders in postmenopausal women.