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Correlation between body mass index and HOMA-IR in term pregnancies

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Objective

To describe the correlation that exists between the body mass index of women with term pregnancies and the HOMA-IR index as a reflection of the increase in physiological changes in pregnancy, which condition proportional increases in serum insulin and serum glucose in normal pregnancies of term.

Methods

This is a cross-sectional study in which pregnant women from 37 to 40 weeks of gestation, 18 and 36 years old, who attended the rural hospital of the IMSS Bienestar program of public health services in Santiago Juxtlahuaca Mexico between 2020 and 2021, participated. The inclusion criteria included women with term pregnancies with complete clinical records that allowed calculating the body mass index, and the measurement of serum insulin and serum glucose to calculate the homeostatic model of insulin resistance (HOMA-IR) The tests were used Kolmogorov-Smirnov test to assess the normality of the data. Normally distributed numerical data is presented as mean ± standard deviation. Pearson correlations were performed with HOMA-IR as dependent variables. Statistical analysis was performed using SPSS for Windows version 11.0. (SPSS Corp, Chicago, IL).

Results

A total of 22 patients were included in this study. The mean age of the patients was 28 ± 8 years and the mean BMI was 30 ± 6 kg/m 2 ; with about half of the patients (14 patients, 63.6%) being obese. We found 10 patients (45.5%) at 36 weeks, 8 patients (36.4%) at 37 weeks, and 4 patients (18.1%) at 38 weeks. Number of pregnancies 1 to 4 with an average of 2.18, Serum glucose (24.3-36.1 mmol/L) Serum insulin (6.0-28.9 mmol/L) Homa-IR (1.20-4.70) Homa-B (136-3612) It was possible to demonstrate that there is a strong positive correlation through a Pearson Coefficient of 1.0 between the body mass index with the HOMA-IR values in women with term pregnancies, who do not have a history of diabetes before or during gestation.

Conclusion

The positive correlation between the values of body mass index with the values of HOMA-IR, is a reflection that pregnancy is a metabolically very demanding condition, different adaptations are generated to regulate glucose homeostasis to deal with the major glucose demands, raising insulin levels during pregnancy, showing peripheral resistance to it, guaranteeing the supply of glucose for fetal functions.