Association of Dietary Inflammatory Index, Endometriosis and Dyspareunia

Clarissa Viana Demézio da Silva*,

Department of Gynecology, Federal University of Rio de Janeiro, Brazil

Abstract

Endometriosis is a gynecological disease characterized by the presence of endometrial tissue outside the uterus. Recently, diet has been identified a potential modifiable risk factor for endometriosis.

Keywords: Dietary Inflammatory Index, Endometriosis, Dyspareunia

Accepted on 29th September, 2021

Introduction

Endometriosis is a gynecological disease characterized by the presence of endometrial tissue outside the uterus that may cause dysmenorrhea, pelvic pain, dyspareunia, urinary and intestinal disorders, and infertility. Recently, diet has been identified a potential modifiable risk factor for endometriosis. However, the possible relationship between chronic inflammation from dietary exposure, endometriosis and its main symptoms has not been investigated.

Objectives: To investigate the association between the dietary inflammatory index (DII), endometriosis, and its main symptoms.

Materials and Methods

In this case-control study subjects diagnosed with endometriotic lesions by surgery or magnetic resonance were defined as cases (n=59). Controls (n=59) had no visible ectopic endometrium sites during surgical, that was performed for the treatment of benign diseases, such as ovarian, myoma or other reasons. Women previously diagnosed with adenomyosis, pregnant or breastfeeding; on corticosteroids for autoimmune diseases and malignancies; and those diagnosed with other conditions that could interfere with anthropometric evaluation (anasarca, ascites, lower and upper limb edema, and limb amputation), were excluded from this study. The present study focused on main symptoms of endometriosis, such as dysmenorrhea, chronic pelvic pain, deep dyspareunia and infertility. Measurement of body weight and height (for the calculate of the body mass index- BMI), and waist circumference (WC) were performed. Data on dietary intake were collected using a validated semi-quantitative food frequency questionnaire, for the calculate of the DII. DII scores were analyzed both as a continuous variable and as a dichotomous variable, categorized based on the controls' median value of the DII (0.86). Continuous variables were analyzed by Student's t-test and categorical variables were analyzed according to association by Pearson's or Fisher's chi-square test. Odds ratios and 95% confidence intervals were estimated using logistic regression models. A p value <0.05 (2 tailed) was considered statistically significant.

Results

the cases were younger and had normal weight, whereas the controls were obese. A more pro- inflammatory diet was observed in the cases (DII controls= 0.72±1.0 vs. DII cases= 1.13±0.8, p= 0,025). Compared to controls, cases had more symptoms of pain (dysmenorrhea, chronic pelvic pain, deep dyspareunia). There was no significant difference in infertility between the groups. Women with higher DII scores (>0.86) were more likely to have endometriosis and to present with dyspareunia. Results obtained from the logistic regression model with the DII as a categorical variable showed an almost three times greater chance of having the disease (odds ratio- OR= 2,77; 95% confidence interval- CI= 1,13-6,77) for women with DII >0.86 vs those with DII ≤0.86, after adjusting for age and BMI. After multivariable adjustment, women with DII >0.86 were four times more likely to have endometriosis compared to women with DII ≤0.86 (OR= 4,14; 95% CI= 1,50-11,4).

Conclusions

a pro-inflammatory diet, as reflected by higher DII scores, was significantly associated with endometriosis

and dyspareunia in a case-control study in Brazil. Thus, encourage the intake of more anti- inflammatory dietary factors, such as fruits and vegetables, olive oil, nuts, omega-3 fatty acids, vitamin D and phytochemicals, and reducing intake of pro- inflammatory factors such as saturated fat, ultra-processed foods rich in trans fatty acid and sugar, may be a nutritional strategy to reduce the chance of developing endometriosis and dyspareunia.

References

1. Acién P, Velasco I. Endometriosis: a disease that remains enigmatic. Obstet Gynecol. 2013; 17: 1-12.
2. Demézio da Silva CV, Felipe VL, Shivappa N et al. Dietary Inflammatory Index score and risk of developing endometriosis: A case–control study. J Endometr Pelvic Pain Disords. 2021; 13: 32-39.
3. Howard FM. Endometriosis and mechanisms of pelvic pain. J Minim Invasive Gynecol. 2009; 16: 540-50.
4. Vercellini P, Vigano P, Somigliana E et al. Endometriosis: pathogenesis and treatment. Nat Rev Endocrinol. 2014; 10: 265-275.
5. Vercellini P, Meana M, Hummelshoj L et al. Priorities for endometriosis research: a proposed focus on deep dyspareunia. Reprod Sci 2011; 18(2): 114-118.

*Correspondence to

Clarissa Viana Demézio da Silva

Department of Gynecology

Federal University of Rio de Janeiro

Brazil

Tel +55 21 98199-1869

E-mail: clarissademezio@gmail.com