In utero and early neonatal exposures in endometriosis

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Introduction: Nulliparity, short menstrual cycle length, early menarche, low BMI and environmental contaminants are known risk factors for endometriosis. Indeed, genetic and epigenetics factors play a major role in the pathogenesis of endometriosis. However, in medical science is becoming clear that early exposures, both in utero and in the neonatal life, may permanently reprogram the developing embryo for extrauterine life. Thus, the aim of the study is to investigate the possible correlation between endometriosis and maternal, in utero and early neonatal life exposures.

Materials and Methods: A case-control study was conducted on a group of 161 patients with endometriosis compared to a group of 230 women, undergoing laparoscopy for benign adnexal diseases, free of endometriosis. All women included in the study were requested to answer to a series of questions on their mothers’ gestational data and on their own perinatal and early postnatal life. Odds ratio, adjusted odds ratios and 95% confidence intervals for the association between maternal characteristics during the patient's pregnancy, in utero exposure to obstetric and perinatal complications, as well as the type of feeding received during the neonatal period with the development of endometriosis in adult life were calculated.

Result(s): Mothers of women with endometriosis were significantly more likely to be affected by endometriosis (p=0.006) or uterine fibroids (p<0.001). Women with endometriosis were more frequently born prematurely (p<0.0001), with a significantly lower birthweight (p=0.010) and their mothers experienced preeclampsia during their pregnancies more often than controls (p=0.0001). They were more frequently formula fed than breastfed in early life (p<0.0001). However, only prematurity and formula feeding were retained in the multivariate analysis model.

Conclusion(s): Among intrauterine and early neonatal exposures, prematurity and formula feeding were risk factors for the development of endometriosis in adult life. The biological mechanisms underlying in utero and early neonatal life should be evaluated in order to define a possible influence on the later development of endometriosis.

Mots clés : endometriosis, preterm birth, low birth weight, formula feeding, epigenetic

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