Influence of ovarian endometriosis on ovarian-responsiveness to hyperstimulation: An AMH-matched controlled study.

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Introduction:
Reverting to assisted reproductive technology (ART) is a therapeutic option for many endometriosis-affected infertile women. However, the influence of ovarian endometriosis (OMA) on ovarian responsiveness to hyperstimulation is a matter of debate.
The aim of this study was first, to evaluate ovarian responsiveness to hyperstimulation and ART outcomes in women suffering from OMA, as compared to disease-free controls and, secondly, to identify risk factors of poor ovarian response to hyperstimulation.

Material/Patients and methods:
We conducted a large retrospective observational cohort study in a tertiary care university hospital between 01/10/2010 and 31/12/2015. After matching by age and AMH level, 201 infertile women suffering from OMA (OMA group) and 402 disease-free women (control group) undertaking ART procedure were included in the study.
All endometriosis-affected women have undergone a pre-ART work-up, in order to precise diagnosis and staging of endometriosis. OMA diagnosis was based on previously published imaging criteria (transvaginal sonography or magnetic resonance imaging) or on histology for patients with previous history of endometriosis surgery. Poor ovarian response to hyperstimulation was defined as a reduced number of retrieved oocytes (≤3 oocytes retrieved). Study endpoints were number of oocytes retrieved and ART outcome (live birth rate rates). Statistical analyses were conducted using univariate and multivariate logistic regression models.

Results:
The number of oocytes retrieved (7.5 ± 5.4 in OMA group versus 9.4 ± 6.1 in control group; p<0.01) and the number of mature oocytes (6.4 ± 4.8 in OMA group versus 7.6 ± 5.0 in control group; p<0.01) were significantly lower in OMA group as compared to control group. An embryo transfer was performed in 151/201 (75.12%) and 324/402 (80.59%) women in OMA and control group respectively. No significant differences were found between OMA and control groups in term of clinical pregnancy rate [53/151 (35%) versus 134/324(41.3%) respectively; p= 0.23] and live birth rate [39/151 (25.8%) versus 99/324(30.5%) respectively; p=0.33]. After a multivariate logistic regression analysis, independent risk factor for poor ovarian response to hyperstimulation are the following: Previous history of OMA surgery [OR=2.21; 95% CI:1.141-4.260], women's age (>35y.o) [OR=1.73; 95% CI: 1.161-2.575] and pre-operative AMH serum level (< 2 ng/ml) [OR=3.49; 95% CI: 2.346-5.193].

Conclusion(s):
Presence of OMA at the time of ART decrease ovarian responsiveness to hyperstimulation, however pregnancy chances are not affected.
Furthermore, ovarian endometrioma per-se is not associated with an increased risk of poor ovarian response to stimulation, while previous surgery for OMA was identified as a risk factor.

Keywords : Endometrioma; Assisted reproductive technology; AMH level; Endometrioma Surgery
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