

Co-morbidity, inter-current infections and hormonal differences among women with and without intra-uterine adhesions seeking assisted reproduction in Nigeria

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Introduction: The state of the uterine cavity is important in achieving and maintaining pregnancy following assisted reproduction. The presence of intrauterine adhesions (IUA) can be counterproductive to pregnancy. Co-morbid conditions may be associated with the presence of IUA and may influence the management of intrauterine adhesions and infertility.

Materials and Methods: This was a retrospective study in which data was extracted from medical records of 3053 women who presented with infertility and sought assisted conception at Nordica fertility Center between 2005 and 2015. Age was segregated by 5-year interval and BMI was defined according to WHO. Non-parametric statistical methods for correlations used included chi-square analysis with Odds Ratio, t-test and 95% Confidence Interval. Linear and multivariate regression analysis was performed. Stata 13 statistical software was used for data analysis. Significance level was set at $p < 0.05$.

Results: Mean (\pm sd) age and BMI of all patients were 36.9 (6.2) years and 27.8 (5.04.9) respectively. In all, 215 (7.0%) presented with intra-uterine adhesions discovered at hysteroscopy. Women with IUA were significantly older than those without IUA ($t=8.16$, $p\text{-value}=0.00001$). There was no noteworthy difference in the BMI of both groups. IUA+ve women were about 1½ times more likely to present with hypertension ($\chi^2=1.94$, $p\text{-value}=0.16$, OR=1.54, 95% CI: 0.83, 2.84); over thrice as likely to have diabetes ($\chi^2=3.19$, $p\text{-value}=0.07$, OR=3.24, 95% CI: 1.08, 9.71), about twice as likely to have asthma ($\chi^2=2.85$, $p\text{-value}=0.09$, OR=1.97, 95% CI: 0.88, 4.41) and just 1.2 times as likely to have ulcer ($\chi^2=0.30$, $p\text{-value}=0.59$, OR=1.24, 95% CI: 0.57, 2.73) as medical co-morbidities. Significant gynecological co-pathologies among IUA+ve women included fibroids seen on ultrasound scan ($\chi^2=14.21$, $p\text{-value}=0.0002$, OR=1.71, 95% CI: 1.29, 2.28) and cervical stenosis ($\chi^2=4.36$, $p\text{-value}=0.04$, OR=5.16, 95% CI: 1.36, 19.58). Prevalence of previous diagnosis of endometriosis, ectopic pregnancies and endometrial polyps were insignificant in the two groups. The only pelvic mass was noted among those that had IUA. The concentration of FSH was significantly higher among IUA+ve patients (9.50 ± 9.80) than among IUA-ve patients (8.11 ± 10.35) ($t=1.71$, $p\text{-value}=0.04$). There were no significant differences in the proportions of IUA+ve and IUA-ve that presented with HIV, Hepatitis B or C and VDRL. Linear regression analysis showed that previous open myomectomy ($r=0.09$, $t=4.54$, $p=0.000$, 95% CI: 0.05, 0.14), previous uterine evacuation ($r=0.06$, $t=3.07$, $p=0.002$, 95% CI: 0.02, 0.09) and ectopic pregnancy ($r=0.48$, $t=2.39$, $p=0.017$, 95% CI: 0.09, 0.88) were significantly associated with intrauterine adhesion.

Conclusion: Sub-Saharan African health providers dealing with infertility should be aware of other medical and gynecological co-pathologies which may be associated with intrauterine adhesions and which should be taken into consideration in managing and preventing intrauterine adhesions so as to improve the chances of successful outcomes following assisted reproduction.

Keywords : Intra-uterine adhesions, co-morbidity, hormones, assisted reproduction

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