Fertility outcome in patients undergoing intrauterine insemination after varicocelectomy

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Objectives: Approximately 30% to 40% of men who are evaluated at an infertility clinic are diagnosed with a varicocele as a primary cause of their infertility. Surgical repair of varicoceles allows 50% to 80% of these men to father children. However, 20% to 50% of these men remain infertile despite surgical varicocele repair. Many of these men subsequently undergo intrauterine insemination (IUI) in order to initiate pregnancy. The objective of our study was to evaluate the fertility outcome in patients undergoing intrauterine insemination after varicocele treatment, and to compare the rate of pregnancy to those men with untreated varicocele undergoing IUI.

Design:

Material and Methods: We reviewed the medical records of patients with varicocele who underwent IUI treatment at the Cleveland Clinic Foundation from 1993 to 1997. Patients were divided into two groups: 1) patients who did not undergo varicocele treatment (group I, n = 15) and 2) patients who underwent treatment (group II, n = 24). All the patients who selected varicocele treatment underwent IUI after failing to achieve pregnancy with natural intercourse. Patients in group I underwent 48 cycles, and those in group II, 80 cycles. The relationships between patient characteristics and sperm characteristics to IUI outcome (pregnancy and live birth rate per cycle and per couple) were evaluated.

Results: Comparisons between groups according to male and female ages showed no differences. The pre-wash percentage motile sperm (50.33 ± 2.61 vs 37.64 ± 1.91, p = 0.006) and post-wash total motile sperm (15.9 ± 3.24 vs 5.66 ± 0.68, p = 0.02) were significantly higher in group I than in group II. There were no differences in the other sperm characteristics between groups. The pregnancy and live birth rates for patients in group II were 11.3% and 33.3% respectively. Even though untreated varicocele patients had higher sperm motility characteristics, their per cycle pregnancy (4.2% vs 11.3%) and live birth (2.1% vs 11.3%) rates were significantly lower than varicocele treated patients (p = 0.007, p = 0.02).

Conclusions: Patients with varicocele who underwent treatment had higher rates of pregnancy and live birth compared to varicocele untreated patients. Varicocele repair significantly improves the rate of pregnancy in those couples undergoing intrauterine insemination. Based on our data, patients with varicocele who failed to conceive naturally should be advised to have their varicocele repaired before attempting IUI.