CYTOGENETIC STUDY OF SPERMATOZOA WITH FISH IN COUPLES WITH RECURRENT MISCARRIAGES

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Objective: The objective of this study was to analyze the incidence of chromosomal abnormalities in spermatozoa in couples with recurrent miscarriages.
Methodology: Retrospective study in 95 couples with recurrent miscarriages (≥2 miscarriages) in which fluorescence in situ Hybridization (FISH) in spermatozoa was performed to analyze chromosomes 13, 18, 21, X and Y (Vysis Inc., Downers Grove, Il USA). Each individual result was compared with a control group of normozoospermic fertile donors. Chi-square test was used to compare the incidence of aneuploidies in each patient with the control group and patients were diagnosed with an abnormal FISH when they showed significant differences.
Results: In 81 patients a normal FISH result was obtained and in 14 patients abnormal FISH result (14.7 % of the patients with an increase of chromosomal anomalies with respect to the control group.) The comparisons were between patients with normal FISH (group 1) and patients with an abnormal FISH (group 2). Mean age for both groups was similar (36.3±5.3 vs. 34.6±3.8 respectively), with a significant difference in the concentration in mill/ml (52.6±48.9 vs. 31.6±27.0; p=0.0270 group 1 and 2 respectively). However, we did not observe differences in sperm motility or morphology. The chromosomal abnormalities observed in group 2 were disomies in most cases for the sexual chromosomes (0.24% vs. 0.92%; p<0.0001 group 1 and 2, respectively) and diploidy (0.09% vs. 0.60%; p<0.0001).
Conclusions: Couples with recurrent miscarriages have an increased risk for chromosomal abnormalities in spermatozoa. The risk of chromosomal abnormalities is higher with lower sperm account.