

Congenital fetal anomalies in intracytoplasmic sperm injection pregnancies

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Objective

To determine the incidence and types of congenital fetal anomalies in intracytoplasmic sperm injection (ICSI) pregnancies among the deliveries which took place at Bařkent University Ankara Hospital between 2012 and 2013.

Methods

Bařkent University Ankara Hospital Delivery Records were reviewed to find out the pregnancies with congenital fetal anomalies and patients' files were reviewed to determine the incidence and types of the anomalies in intracytoplasmic sperm injection (ICSI) pregnancies during the study period. Multiple pregnancies and pregnancies occurring after other infertility treatments were excluded. ICSI singleton pregnancies made up the study group and spontaneous singleton pregnancies made up the control group. Chi-square test was used for the statistical analysis.

Results

We included 139 ICSI singleton pregnancies and 1262 spontaneous singleton pregnancies. A total of 77 congenital fetal anomalies were diagnosed in those pregnancies (77/1401, 5.5%). The incidence of anomalies in ICSI singleton pregnancies was 5.5% (7/139) and it was 5.5% (70/1262) in spontaneous singleton pregnancies ($p>0.05$). Cardiac anomalies, with the overall incidence of 2.5%, were the most frequent congenital anomalies observed in both groups (35/1401). Karyotype analysis revealed Down Syndrome in 3 cases with cardiac anomaly in the spontaneous singleton pregnancy group.

Conclusion

Generally reported incidence of major congenital anomalies among live births is about 3%. Recent studies indicate that ICSI pregnancies are 1.25 times more likely to be associated with congenital anomalies. In our study, ICSI and spontaneous singleton pregnancy groups both revealed higher incidences of congenital anomalies than the 3% incidence reported in the general population and those incidences didn't show significant difference between the two groups. In accordance with the literature, congenital heart defects were the most frequent anomalies observed.

Table 1. Congenital anomalies in singleton pregnancies at Bařkent University Ankara Hospital in years 2012-2013.

	Anomaly (+)	Anomaly (-)	Total
ICSI singletons	7/139 (5%)	132/139 (95%)	139
Spontaneous singletons	70/1262 (5.5%)	1192/1262 (94.5%)	1262
All singletons	77/1401 (5.5%)	1324/1401 (94.5%)	1401

Chi-square test: $p=0.802$

Table 2. Types of congenital anomalies in ICSI and spontaneous singleton pregnancies at Bařkent University Ankara Hospital in years 2012-2013.

	ICSI singletons, n=139	Spontaneous singletons, n=1,262	All singletons, n=1,401
Cardiac anomalies	4	31	35 (2.5%)
Urinary tract anomalies	-	15	15 (1.1%)
Umbilical cord anomalies	1	5	6 (0.4%)
Musculoskeletal system anomalies	2	3	5 (0.4%)
CNS anomalies	-	4	4 (0.3%)
CCAM	-	3	3 (0.2%)
Cleft lip / cleft palate	-	2	2 (0.1%)
Gastrointestinal anomalies	-	2	2 (0.1%)
Gastroschisis	-	1	1 (0.1%)
Multiple system anomalies	-	4	4 (0.3%)
Total	7 (5%)	70 (5.5%)	77 (5.5%)