

Higher incidence of congenital anomalies in children born after assisted reproduction in the Czech Republic: Population based study

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Outline and methodics of the study

Our study evaluates the frequency of congenital anomalies in children born after assisted reproduction.

The retrospective epidemiological analysis was performed using data from the National Registry of Congenital Anomalies and National Registry of Newborns, run by the Institute of Health Information and Statistics of the Czech Republic.

All diagnoses of congenital anomalies (Q00-Q99) were included. We compared the incidences of congenital anomalies in naturally conceived children and IVF conceived children born in the Czech Republic during 5 years period (2013-2017). Statistical analysis was performed by Fisher's exact test.

National Registry of Congenital Anomalies of the Czech Republic (NRCA)

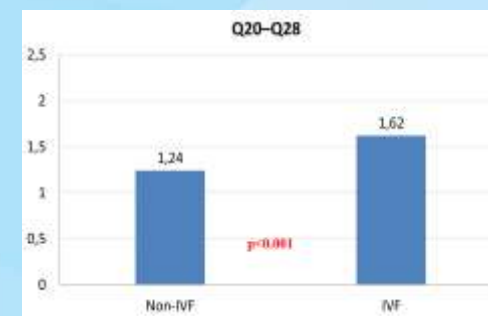
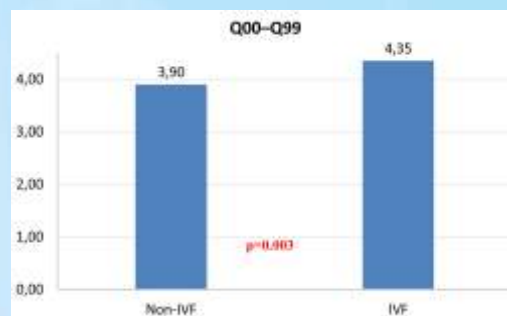
- Unofficial monitoring in former Czechoslovakia started in 1961
- Official monitoring started on 1st of January 1964
- First stage (1964 – 1974) – only 36 selected diagnoses of congenital anomalies (CA) were registered
- Second stage (1975 – 1993) – 60 diagnoses of CA registered
- Third stage: (1994 – 2015) – all cases in terminations of pregnancies (TOPs), stillbirths and live births are registered (age limit for reporting = 15 years)
- Fourth stage 2016 – now: no age limit, additional diagnoses (rare diseases), electronic registration, OMIM and Orphanet codes
- www.vrozene-vady.cz/

Results

During the selected period there were 547 675 children born in the Czech Republic (531 064 were naturally conceived children and 16 611 were IVF conceived children).

The incidence of congenital anomalies was 3.90% in naturally conceived children group and 4.35% in IVF conceived children. This difference is statistically significant ($p = 0.003$).

Analyzing different subgroups of congenital anomalies we have found a significantly increased incidence of anomalies in two subgroups: Congenital malformations of the circulatory system (Q20-Q28) and Congenital malformations of the respiratory system (Q30-Q34).



The increased risk of congenital anomalies in IVF conceived children was highlighted in many studies however the results are often diverse. In our population-based study, we confirmed a significantly higher general incidence of congenital anomalies in IVF conceived children



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