



May 5, 2003

Fertility Treatments and Craniosynostosis, California, Georgia, and Iowa, 1993-1997

Jennita Reefhuis, Margaret A. Honein, G.M. Shaw, and P.A. Romitti

Full article in *Pediatrics* May 2003;111(5 Supple Pt 2) 1163-66

What is craniosynostosis? And how often does it occur?

Premature closure of one or more cranial sutures, or craniosynostosis, is a birth defect that first appears as an abnormal head shape. Surgery is often required to prevent increased pressure and further malformation of the skull. The prevalence of craniosynostosis has been estimated to be 3 to 5 per 10,000 births. In the Metropolitan Atlanta Congenital Defects Program (MACDP), the rate has increased from 2.95 per 10,000 births during the period 1968 through 1975, to 5.16 from 1992 through 1999 (unpublished data, MACDP).

Why did this study look at the relationship between fertility treatments and craniosynostosis?

Craniosynostosis is a rare birth defect usually of unknown cause; however, it is often associated with advanced maternal age. Because fertility treatments are also associated with increased maternal age, this study investigated the possible association between fertility treatments and craniosynostosis. Today, one in 100 births occur after the use of assisted reproductive techniques, so determining any possible risk associated with fertility treatments should be determined.

How was the data collected?

Data was used from the Birth Defect Risk Factor Surveillance (BDRFS) study. The BDRFS included children born from 1993 through 1997 in San Francisco and Santa Clara counties in California, metropolitan Atlanta in Georgia, and the entire state of Iowa.

What are the findings of this study?

In the three surveillance systems 99 children with craniosynostosis were identified in the study period and 777 children without birth defects were used as a comparison. Mothers of case children were found to be approximately 4 times more likely to have used fertility drugs or assisted reproductive techniques. The effect was similar when looking at either fertility drugs or assisted reproductive techniques and we found it for mothers of young and advanced age. This is the first study that has found an association between fertility treatments and craniosynostosis. However, because only 10 children who had craniosynostosis were born after use of fertility treatments, the estimates are not precise. The results of this study should be viewed carefully and confirmed with further studies of infants born after maternal fertility treatments.

For more information, visit www.cdc.gov/ncbddd

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