IVF Sperm Origin No Factor in Cognitive Risks

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WASHINGTON — Children who were conceived from surgically retrieved sperm had no greater risk of cognitive and behavioral problems than did those conceived from ejaculated sperm, according to a study of 3-year follow-up data from 874 children.

Surgically retrieved sperm have been associated with an increased risk of genetic defects in previous studies. Because intracytoplasmic sperm injection (ICSI) is the technique of choice in cases of male infertility, concerns have been raised about an increased risk of developmental delays in children conceived from surgically retrieved sperm.

But the clinical implications of this study are that the origin of the sperm was not a factor in the percentage of IVF children who were at risk for cognitive and behavioral problems, Queenie V. Neri, a biologist at the Center for Reproductive Medicine and Infertility at the Cornell University Medical School, New York, reported in a presentation at the annual meeting of the American Society for Reproductive Medicine.

To investigate the cognitive and behavioral profiles of children conceived using assisted reproductive technology according to sperm origin, Ms. Neri compared data from 74 children conceived via ICSI with surgically retrieved sperm, 516 children conceived via ICSI with ejaculated sperm, and 284 children conceived via IVF but not ICSI.

Ms. Neri worked under the guidance of Dr. Zev Rosenwaks and Dr. Gianpiero D. Palermo, both of Cornell University.

The Ages & Stages Questionnaire (ASQ) and Social Skills Rating System (SSRS) were used to assess the children's communication skills, fine motor skills, gross motor skills, social skills, and problem-solving skills at 3 years of age.

Overall, 87.1% of the children had ASQ scores in the normal range, compared with 12.9% who scored in the at-risk range (meaning at risk for further developmental delays or abnormalities). The at-risk group included 10.4% of the IVF children, 11.4% of the children conceived via ICSI with ejaculated sperm, and significantly fewer (2.8%) of the children conceived via ICSI with surgically retrieved sperm.

Children who were conceived from surgically retrieved sperm actually scored significantly higher on ASQ measures of gross and fine-motor skills.

Within the subset of at-risk children conceived via ICSI, those conceived from surgically retrieved sperm scored significantly higher on measures of gross and fine-motor skills on the ASQ than did those conceived from ejaculated sperm.

These children also scored higher on measures of communication, problem solving, and personal/social development, but the differences were not statistically significant.

Similarly, 81.8% of the children overall had SSRS scores in the normal range, compared with 18.2% of children in the at-risk range.

The at-risk group included 17.2% of the IVF children, 20.1% of the children conceived via ICSI from ejaculated sperm, and 15.8% of those conceived via ICSI from surgically retrieved sperm.

In the subset of children conceived via ICSI, the percentage of children at risk for problems with social skills was significantly lower among those conceived with surgically retrieved sperm, compared with those who were conceived with ejaculated sperm.

In addition, children who were part of multiple gestations were significantly more likely to be in the at-risk score range for the SSRS in both the IVF (non-ICSI) group and the ICSI group conceived from ejaculated sperm.

However, the difference in at-risk SSRS scores between multiples and singletons was not significant for children who were conceived via ICSI with surgically retrieved sperm.

Although the results from this study suggest that there is no negative association between sperm characteristics and child development, ongoing follow-up is important in detecting malformations that appear after birth, Ms. Neri said. ■