

Couples with fertility problems where the man is over 35 have increased difficulty in conceiving

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Pregnancy rates decrease and miscarriages increase when a father is over 35 years of age, a scientist will tell the 24th annual conference of the European Society of Human Reproduction and Embryology tomorrow (Monday 7 July). Dr. Stéphanie Belloc, of the Eylau Centre for Assisted Reproduction, Paris, France, will say that this is the first time that such a strong paternal effect on reproductive outcomes has been shown.

Dr. Belloc and colleagues followed up 21239 intrauterine inseminations (IUIs). In IUI the sperm is 'washed', or spun in a centrifuge, in order to separate them from the seminal fluid, and then inserted directly into the uterus. If the sperm are not washed they can cause uterine cramps which can expel the semen because of prostaglandins in the seminal fluid. 12236 couples who had consulted at the Centre between January 2002 and December 2006 were involved, and the husband's semen was used in all cases. In most cases the couples were being treated because of the husband's infertility

The sperm of each partner was examined at the time of the IUI for a number of characteristics, including sperm count, motility and morphology. Clinical pregnancy, miscarriage and delivery rates were also carefully recorded. Detailed analysis of the results allowed the scientists to separate out the male and female factors related to each pregnancy.

Maternal age was closely associated with a decreased pregnancy rate of 8.9% in women over 35 years, compared to 14.5% in younger women. Miscarriage rates were also typically affected by maternal age.

"But we also found that that the age of the father was important in pregnancy rates – men over 35 had a negative effect," says Dr. Belloc. "And, perhaps more surprisingly, miscarriage rates increased where the father was over 35."

The effect of maternal age on the ability to conceive and on miscarriage rates is well known, but there is still controversy about the role of the father. Although there are many reports that show an overall decline in sperm counts and quality from decade to decade, up to now there has been no clinical proof that simply being an older man has a direct effect on a couple's fertility.

"We already believed that couples where the man was older took longer to conceive," says Dr. Belloc, "but a number of reasons had been put forward for this. Neither was there any definite evidence that miscarriage rates increased when the man was older. To undertake a complex multivariant statistical analysis of data from a large group of patients was difficult, but we thought it was a question that needed to be answered once and for all. Some recent studies have established a relationship between the results of IUI and DNA damage, which is also correlated to a man's age, suggesting that it might be an important factor, but until now there was no clinical proof."

Even though the numbers in the study are already large, the scientists intend to include more couples in the next few years to confirm their results further. "This research has important implications for couples wanting to start a family," says Dr. Belloc, "and we need to research it in as large a group as possible."

"How DNA damage in older men translates into clinical practice has not been shown up to now," says Dr. Belloc. "Our research proves for the first time that there is a strong paternal age-related effect on IUI outcomes, and this information should be considered by both doctors and patients in assisted reproduction programmes.

"We believe that the use of IVF or ICSI should be suggested to infertile patients where either party is over 35 years of age. In IVF, the zona pellucida (the outer membrane of the egg) seems to be an efficient barrier in preventing the penetration of sperm with DNA damage, and in ICSI, the best sperm can be selected out for use. These methods, although not in themselves a guarantee of success, may help couples where the man is older to achieve a pregnancy more quickly, and also reduce the risk of miscarriage," she says.

Source: European Society for Human Reproduction and Embryology

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