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First study to show IVF single embryo transfer is just as successful as double transfer in older women – and safer

Research by fertility experts in Finland has demonstrated for the first time that in many cases transferring a single embryo to the womb in women undergoing IVF is just as likely to result in pregnancy and a live birth in those aged 36 to 39 as it is in younger women.

Their study indicates that it is the quality of the embryo that is more important in determining the success of IVF rather than the age of the woman. This is a finding that could encourage wider acceptance of single embryo transfer in women in their late 30s – an age group that up to now in most countries has been thought to benefit from having two embryos transferred at any one time, despite the risk of multiple births.

The research, published today (Thursday 1 June) in *Human Reproduction*¹, analysed 1,224 fresh IVF/ICSI² cycles and 828 frozen embryo transfers in women aged 36-39. They compared results in the case of elective single embryo transfer (eSET) with a top quality embryo, elective single embryo transfer with a non-top quality embryo, compulsory single embryo transfer (because there was only one embryo available) and double embryo transfer (DET). They also analysed the cumulative results i.e. the results for women who underwent more than one cycle of treatment using fresh and frozen embryos.

Senior author Dr Hannu Martikainen from the University of Oulu, said: “What we demonstrated for the first time was that the pregnancy rate, and in particular, the cumulative pregnancy rate, was very similar in the age group 36 to 39 to that obtained previously in younger women. This suggests that embryo quality is the most important parameter in the outcome and that selection for elective single embryo transfer should be based on embryo quality rather than the age of the woman. Of course, it is not rational to use SET in all cases and double embryo transfer is still appropriate in certain circumstances. In the age group 36-39 we nowadays use SET in about 40% of cases (and in about 60% in younger women). As a result of this a multiple pregnancy rate of less than 10% has been achieved.”

Dr Martikainen, who is Chief Physician in the Division of Reproductive Endocrinology and Infertility in the Department of Obstetrics and Gynaecology, said that in the 36-39 age group a third of the women achieved pregnancy after a cycle of eSET, compared to around 31 to 35% in previous studies of eSET in younger women. The live birth rate was also similar at 26% compared to between 27 and 30%. The cumulative pregnancy rate among 36 to 39-year-olds achieved after additionally using frozen embryo transfer was 54% with a live birth rate of over 40%. “We have achieved even higher rates of up to 60 to 70% in young women, but even so, the rate for older women is very satisfactory.”

Another important finding was that the pregnancy rate and live birth rate using fresh embryo transfer was very similar between the eSET and DET group and when the cumulative rate, using frozen embryos, was analysed the eSET results were actually better, with a pregnancy rate of nearly 55% and live birth rate of over 40% in the women

having eSET compared to a pregnancy rate of 35% and live birth rate of nearly 27% among the women having DET. There was a multiple birth rate among the eSET group of less than 2% compared with nearly 17% in the DET group.

“This tells us that as well as eSET having the potential to be as successful in women up to 40 as it is in younger women, it also reduces the risk of multiple births compared with DET and therefore increases the safety of assisted reproduction in this age group,” said Dr Martikainen.

He added that their data also indicated that eSET is cost effective when the costs of twin pregnancies are taken in to account. “More effective use of frozen embryos would cut the average cost per live birth in the future and also means the number of cycles of ovarian stimulation may decrease.”

Countries who routinely use eSET (unless there are contraindications) are limited to Finland, Sweden, Belgium and the Netherlands, with Sweden having legislation that allows transfer of two embryos only in special cases. The policy in most countries is to transfer two embryos in women aged over 36.

Dr Martikainen expects those countries committed to single embryo transfer to extend it to older women as they gain more experience with SET, as is happening in Finland. The trend may even expand to include women over 40 in the future, with studies planned for this age group.

(ends)

¹ **Elective single-embryo transfer in women aged 36-39 years. Human Reproduction. doi:10.1093/humrep/del137.**

<http://www.oxfordjournals.org/eshre/press-release/freepdf/del137.pdf>

² IVF – in-vitro fertilisation. ICSI – intracytoplasmic sperm injection: process by which an oocyte is fertilised by injecting a single sperm into the oocyte.

Notes:

PDF version of this press release and full embargoed text of the paper with complete results can be found from 09:00hrs London time Wednesday 31 May at:

<http://www.oxfordjournals.org/eshre/press-release/june06.pdf> or is available immediately from Margaret Willson

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