

IVF in women over 38: The doctor's dilemma

June 16 2015

It is a biological fact that female fertility declines with age - in assisted conception as in natural. Indeed, findings from a 12-year study reported today at the Annual Meeting of ESHRE by Dr Marta Devesa from the Hospital Universitario Quiron-Dexeus in Barcelona, Spain, showed that in her own clinic cumulative live birth rates following IVF declined from 23.6% in women aged 38-39 years to 1.3% in those aged 44 and over.

Such declines in success rate have been seen in many studies, but are not evident in older patients having egg donation to treat their infertility. Success rates in older patients receiving donor eggs remain at a consistently level rate, thus suggesting that the [age](#) and quality of the egg seem more important as a determinant of success than the age of the patient.

Thus, as Dr Devesa explained, the dilemma for each fertility patient over the age of 38 and her clinics is defining the efficiency of using the patient's own eggs for treatment according to her age. There are no definitive studies giving an indication of predicted live [birth rates](#) in women over the age 38, and it remains challenging for clinics to discourage IVF in their older patients because of age.

Now, however, an analysis of all IVF treatments performed at the Dexeus clinic in Barcelona between 2000 and 2012 (4195 women having 5841 cycles of IVF treatment) has calculated cumulative live birth rate (ie, after one fresh and any subsequent frozen embryo transfers) according to patient age and the number of eggs initially retrieved. Such results, said Dr Devesa, provide a real-world model for predicting the

chance of success in older patients.

Patients in the study were divided into four groups - G1 38-39 years, G2 40-41 years, G3 42-43 years, and G4 44 and over, and as expected live birth rate in initial fresh cycles did decrease significantly with increasing age.

However, a more accurate evaluation of "success" in IVF (and one which accurately reflects what patients want) is "cumulative" live birth rates - that is, a baby born after a course of treatment which includes the initial fresh cycle and subsequent transfer of frozen embryos). This study showed that the probability of freezing surplus embryos (as well as the number of embryos frozen) significantly decreased with increasing age.

Cumulative live birth rates (fresh and frozen) also declined significantly with increasing age - from 23.6% in G1, to 15.6% in G2, to 6.6% in G3, to 1.3% in G4. Cumulative live birth rates were not surprisingly higher in the cycles in which there were surplus embryos for freezing - although the study did show that the main contribution of embryo freezing was in increasing the live birth rate in the fresh cycle, and not in the frozen embryo transfers.

Thus, this predictive model of cumulative live birth rate according to age and the number of eggs retrieved revealed that the higher the number of eggs retrieved, the higher the cumulative live birth rate would be. However, in the oldest group (G4) a 3% cumulative live birth rate would never be reached, irrespective of the number of eggs retrieved.

Dr Devesa described the study as the largest ever to analyse cumulative live birth rates in women over 38, who today represent an increasingly large proportion of IVF patients. And commenting on the results she advised that women aged 44 and over should be aware that, while embryo cryopreservation and subsequent frozen embryo transfer may be

beneficial in fresh cycles, there is only limited benefit in later frozen cycles. Women aged 44 and over, she added, should be advised against doing IVF with their own eggs, as the chances of success are so slim. For the others under 44, age and the number of eggs retrieved provide the best guide to outcome.

"Indeed," said Dr Devesa, "women of 44 or older should be fully informed about their real chances of a live birth and counselled in favour of oocyte donation. This is what probably explains the higher rates of oocyte donation in the USA than in Europe. But in Europe, Spain is probably one of the countries where oocyte donation is more widespread." According to the Spanish national registry system, 7000 cycles of egg donation were performed in Spain in 2012.

Dr Devesa explained that the most likely biological reason for a decline in [live birth](#) and oocyte retrieval rates with female age was chromosomal abnormalities in the embryo. "Embryo aneuploidy rates as high as 85% have been described in women older than 42," she said.

More information: Abstract O-162, Tuesday 16 June, "I will use my own eggs." Until what age?

Provided by European Society of Human Reproduction and Embryology

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