

ART fact sheet

Background

- One in six couples worldwide experience some form of infertility problem at least once during their reproductive lifetime. The current prevalence of infertility lasting for at least 12 months is estimated to affect between 8-12% worldwide for women aged 20-44.
- 20-30% of infertility cases are explained by physiological causes in men, 20-35% by physiological causes in women, and 25-40% of cases are because of a problem in both partners. In 10-20% no cause is found. Infertility is also associated with lifestyle factors such as smoking, body-weight and stress. Increasing age in the female partner is one of the most common explanations today.
- It is now estimated that more than 9 million babies have been born worldwide since the first IVF baby was born in 1978.
- Most ART treatments take place in women aged between 30 and 39.

Cycles/treatments

- Europe leads the world in ART, initiating approximately 50% of all reported treatment cycles.
- In 2016, the latest year for which figures are available, 918 159 treatment cycles were reported from 40 European countries. This compares globally (in 2016) with 264 000 cycles from the US and 81 000 cycles from Australia and New Zealand. The number of cycles performed in many developed countries has grown by 5-10% per annum over the last few years, but that growth is now showing signs of slowing.
- In 2016 Spain was by far the most active IVF country in Europe, with almost 141 000 treatments. France (105 000 cycles), Germany (99 000), Italy (78 000) and the UK (68 000) were Europe's most active countries. Russia reported 120 000 cycles.
- The most 'officially' active countries in the world are Japan (447 790 cycles in 2016) (*Ishihara et al., 2018*) and the USA. (www.cdc.gov/art) However, estimates are that China is now performing around 900 000 cycles per year, but so far not reporting to any registry.
- Around 1.5 million ART cycles are now reported each year worldwide (*Gallagher et al., 2012*), with a reported 333,000 babies born. Registry figures are thought to represent around 70% of all ART treatments. Thus, around 2.4 million ART cycles (*Gallagher et al., 2012*) are estimated each year, with about 500,000 babies born.

Availability of ART

- The global need for ART is estimated to be at least 1 500 cycles/million population per year (*ESHRE Capri Group, 2001*).
- The Nordic countries and Belgium have the highest ART availability in terms of cycles per million population.
- In Austria, Belgium, Denmark, Estonia and Slovenia more than 4.0% of all babies born were conceived by ART. By contrast the proportion in the USA was estimated to be slightly more than 1.0% of total births.

Pregnancies and delivery rates

- An analysis of world data for 2016 put average delivery rate from ART treatment at 21.8% per aspiration and 28.9% cumulative from a single started treatment cycle.
- Large differences exist between countries in the number of embryos transferred and resulting multiple births. However, there is a consistent trend towards transfer of fewer embryos. The overall average number is 1.81 embryos per transfer.
- In Europe the multiple delivery rate per embryo transfer has declined steadily since 2000 from 26.9% to 15.0% in 2016.
- Sweden has the lowest multiple delivery rate in the world. In more than two-thirds of all cases a single embryo was transferred.
- In Europe in 2016 the mean pregnancy rate per embryo transfer was 38.1% after IVF, 37.7% after ICSI, 31.9% after frozen embryo transfer and 49.4% after egg donation. Rates are higher in younger (<35 years) patients.

Treatments

- The most common fertilisation (treatment) technique is ICSI. Overall, ICSI accounts for around three-fourths of all treatments worldwide, and conventional IVF around one-fourth. However, these proportions vary greatly between countries, even though outcome rates with each technique are comparable.
- Success rates from frozen embryo transfer are increasing, as are the number of frozen cycles. Vitrification, as an efficient cryopreservation technique, has improved the outcome of both embryo and oocyte freezing.
- Ovarian hyperstimulation syndrome (OHSS) is the most common complication related to ART, with an incidence rate of about 0.2% reported.

References

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