

Effectiveness and costs of in vitro fertilization (IVF) in Estonia

Summary

Objectives: To describe the effectiveness and costs of in vitro fertilization in Estonia compared to other countries.

Methods: Literature reviews were carried out for effectiveness and cost-effectiveness evidence. Searches were performed in PubMed, the Cochrane Database of Systematic Reviews and the Centre for Reviews and Disseminations database. Estonian IVF data was analysed based on records received from the Estonian Health Insurance Fund and the Estonian Medical Birth Registry. Data analysis included 4445 women who had 7933 IVF cycles during 2005–2011.

Results: The cumulative pregnancy rate in Estonia after IVF was 41% and the delivery rate 29%. The average delivery rate in age group under 30 was 34%, 30% in 31–35 and 19% over 36 years. The average delivery rate was 30% in the first IVF cycle, 28% in the second cycle and 26% in the 3+ (third and following) cycles. When age was considered, then a significant difference in the effectiveness between the first and 3+ cycles was observed only in the oldest (≥ 36) age group. The delivery rate was not significantly different in the agonist and antagonist cycles. Incidence of adverse experiences was higher in the agonist group (8.5%) than in the antagonist group (5%).

Results from the literature search were consistent with results from Estonian data analysis – IVF effectiveness decreases with age and effectiveness also decreases with cycle rank, but cycle rank effect is not consistent; effectiveness does not differ in agonist and antagonist groups but ovarian hyperstimulation syndrome incidence is higher in the antagonist group.

Total IVF related costs in the Estonian data analysis were 23 368 877 euros, which included costs for IVF procedures; stimulation medications; and costs from the antenatal phase, delivery phase and neonatal phase (up to three months after birth). Costs related to IVF procedures were 8 790 951 euros (38%) and for medications 6 551 881 euros (28%). Costs related to neonatal care were 3 414 854 euros (15%). The mean cost per one IVF-child was 8409 euros.

Cost per child was significantly higher in the case of preterm birth due to hospital care costs. Costs related to preterm singleton birth were 5985 euros and for term singleton birth 1072 euros. 60% of preterm births were multiple births and 13% of term births were multiple births. Cost per delivery was 3449 euros in the first cycle and 18 568 euros in the eighth cycle.

Conclusions: According to scientific literature and Estonian data analysis, effectiveness of IVF decreases with age and cycle rank. Effectiveness does not differ in agonist and antagonist cycles but incidence of adverse events is higher in agonist cycles. Total cost related to the child is five times higher in the case of preterm birth due to higher hospital care costs. Cost per delivery increases by 2000 euros with every additional cycle needed to achieve a birth.

Reference: Tonsiver T, Ehrenberg A, Ringmets I, Saare K, Lepik K, Kiivet R A. Kehavälise viljastamise efektiivsus ja kulud Eestis. Tartu: Tartu Ülikooli tervishoiu instituut; 2013.