Cost analysis of shared oocyte in vitro fertilization
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Shared oocyte in vitro fertilization.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Women 35 years or younger who needed IVF as a treatment for their infertility and who were willing to share their oocytes with a woman who needed oocyte donation to conceive.

Setting
Hospital. The economic study was carried out in Cleveland, Ohio, USA.

Dates to which data relate
The main effectiveness data were extracted from a clinical trial conducted in 1996. Resource and cost data were mainly derived from 1996 sources. The price year was not clearly reported.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was not undertaken on the same patient sample as that used in the effectiveness study.

Study sample
A cohort of 23 women made up the study sample. Power calculations to determine the sample size were not reported.

Study design
The study was a retrospective cohort study. The duration of the follow-up was not stated.

Analysis of effectiveness
The analysis of the clinical study was based on treatment completers only. The primary health outcome used in the
analysis was number of births. There were differences in the mean ages of the two groups, donor (30 years) and recipient (40 years), as well as in the primary diagnosis (21 tubal and 2 male factor in the donor group; 2 tubal, 9 ovulatory dysfunction, 3 unexplained, 5 premature ovarian failure and 4 menopause in the recipient group).

Effectiveness results
Of the 23 shared-oocyte donor cycles performed, there were 15 births of which 8 were donor (4 singleton, 3 twins and 1 triplets) and 7 were recipient patients (5 singleton and 2 twins).

Clinical conclusions
Where there is discomfort with anonymous oocyte donors, the availability of the shared oocyte programme gives these patients a very reasonable chance of having a child.

Measure of benefits used in the economic analysis
A measure of benefits was the number of live births. The reduced cost per birth was the principal benefit.

Direct costs
The cost of maternal hospitalisation and neonatal intensive care for multiple pregnancies and the cost of analysis of routine IVF were assessed. The cost per live birth with IVF was obtained from a previous published study. Quantities were analysed separately from the costs. Discounting was not undertaken. The price year was not clearly reported. The quantity/cost boundary adopted was the hospital.

Indirect Costs
Not included.

Currency
US dollars ($).

Sensitivity analysis
A sensitivity analysis was not carried out.

Estimated benefits used in the economic analysis
Of the 23 shared-oocyte donor cycles performed, there have been 15 births of which eight were donor and seven were recipient patients.

Cost results
The average cost of hospitalisation for pre-termlabour for patients with multiple pregnancies was $9,405 for twins and $9,093 for triplets. The average cost of hospitalisation in the neonatal intensive care was $27,295 for twins and $80,781 for triplets. The cost analysis of routine IVF resulted in an estimated total cost per woman delivered of $22,238.

Synthesis of costs and benefits
The cost per woman delivered in the shared oocyte program was $22,238 compared with $66,000 in the routine IVF as derived from the literature. Shared oocyte IVF, even if a comparable high multiple pregnancy rate were assumed, would add only $4,090 to the cost per woman delivered, for a total cost of $26,328 per woman delivered.
Authors' conclusions
Shared IVF is a very cost-effective programme and offers donors and recipients an otherwise unavailable opportunity.

CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear. Shared oocyte IVF has been chosen for women with a poor prognosis for pregnancy with their own oocytes because of age, premature ovarian failure or poor response to gonadotropin therapy.

Validity of estimate of measure of benefit
The study only included shared oocyte IVF and did not compare the number of births for routine IVF which were derived from a study which only provided cost per woman delivered. An element of bias is represented by the younger donor patients. As such, the estimate of benefit is derived from a case-series with an unquantified comparator from the literature and will be subject to bias.

Validity of estimate of costs
Adequate details of the methods of quantity/cost estimation were given and important cost items do not appear to have been omitted. It should be noted that some patients were more willing to accept shared oocyte due to associated lower costs, a fact which may not be relevant to an NHS setting, assuming treatment is routinely available.

Other issues
The issue of generalisability to other settings was not specifically addressed although appropriate comparisons were made with other studies.

Source of funding
None stated.

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