Follicle-stimulating hormone versus human menopausal gonadotropin for in vitro fertilization cycles: a meta-analysis
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Authors' objectives
To conduct a systematic overview of available data comparing follicle-stimulating hormone (FSH) with human menopausal gonadotropin (hMG) in in vitro fertilisation (IVF) cycles and gamete intra-fallopian transfer (GIFT) cycles.

Searching
MEDLINE was searched from 1975 to 1993 using MeSH terms (terms given). Bibliographies of relevant publications and review articles were scanned and abstracts of major scientific meetings from 1983 to 1993 were handsearched. Authors of relevant abstracts were contacted as were peer reviewers.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) and quasi-randomised controlled trials were included.

Specific interventions included in the review
FSH and hMG (for ovarian stimulation in IVF treatment cycles).

Participants included in the review
Infertile couples undergoing treatment with IVF or GIFT were included.

Outcomes assessed in the review
Clinical pregnancy rates, calculated using the following denominators: per cycle start, per cycle reaching oocyte retrieval and per cycle reaching embryo transfer (ET). The frequencies of spontaneous abortion, ovarian hyperstimulation syndrome (OHSS) and multiple pregnancy were assessed as secondary outcomes.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The methodological quality of each trial was assessed using a predetermined scoring system consisting of 6 criteria: type of randomisation, the use of blinding, the completeness of follow-up of study participants, the presence or absence of cointervention, patients and cycles differentiated and whether a cross-over design was used. Two reviewers assessed and ranked each trial independently.

Data extraction
The data were extracted and checked for accuracy in a second review.

Methods of synthesis
How were the studies combined?
Common odds ratios (OR) were calculated and effectiveness was evaluated using the Mantel-Haenszel method.

How were differences between studies investigated?
Tests of homogeneity of treatment effect across all trials were carried out using the Breslow and Day method.
Results of the review
Eight trials in total, comprising one double-blind and 7 non-blinded trials, were included.

None of the trials offered treatment with GIFT, so the analysis was restricted to IVF treatment. There was no significant heterogeneity in the treatment effect across all trials (p = 0.58).

The overall OR in favour of FSH for clinical pregnancy rates per cycle start, oocyte retrieval and ET were 1.71 (95% CI 1.12 to 2.62), 1.69 (95% CI 1.10 to 2.59) and 1.70 (95% CI 1.10 to 2.62) respectively and represented an overall absolute treatment effect of 8.5, 8.0 and 8.3% respectively. These estimates were statistically significant and represented an improvement over hMG of 62.5, 51.6 and 50.3% respectively.

There was insufficient information in the trials on rates of spontaneous abortion, OHSS and multiple pregnancy to allow an overview of these secondary outcomes.

Authors’ conclusions
The results of this meta-analysis confirm that the use of FSH in ovarian stimulation protocols for IVF produces better results than hMG. Greater than 50% improvement in clinical pregnancy rates can be expected with this approach, cycle start, oocyte retrieval and ET methods.

CRD commentary
No information is given on the number of participants in each of the eight trials. This seems to be a methodologically sound systematic review.

Implications of the review for practice and research
The use of FSH in IVF cycles is associated with a significantly higher clinical pregnancy rate than hMG.

Bibliographic details

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.