A review and meta-analysis of hormonal treatment of cryptorchidism

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Authors' objectives
To assess the effect of LH-releasing hormone (LHRH) and hCG in the treatment of cryptorchidism.

Searching
MEDLINE was searched from 1975 to 1990 for original, English language articles on primary LHRH and hCG treatment. Bibliographies of articles found and review articles were also searched.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials and 'non-randomised' trials were included.

Specific interventions included in the review
Hormonal treatment (LHRH, hCG).

Participants included in the review
Boys with undescended testes were included.

Outcomes assessed in the review
Hormonal treatment was considered successful if the testes receded at the bottom of the scrotum by the end of the treatment.

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 authors do not state that they assessed validity.

Data extraction
Two investigators analysed the articles independently using a predesigned scoring sheet.

Methods of synthesis
How were the studies combined?
The trials were presented as randomised or non-randomised. A meta-analysis was performed only on the randomised trials in which LHRH treatment was compared with placebo.

A 2x2 table was calculated for each study and an overall risk ratio, its variance and its 95% CI computed. The statistical significance of the risk ratio was assessed by the Mantel-Haenszel chi-squared test.

In addition, the number of testes in similar treatment groups were combined, and the mean success rate and the 95% CI calculated for descended testes.

How were differences between studies investigated?
The authors do not state how differences between the studies were investigated.
**Results of the review**

There were 33 studies including 3,282 boys with 4,524 undescended testes. Eleven of these trials were randomised including 872 boys with 1,174 undescended testes.

The risk ratio for the descent of the testes after LHRH treatment compared with placebo was 3.21 (95% CI:1.83, 5.64, P<0.001).

In 4 trials excluding retractile testes, the risk ratio for the descent of testes with LHRH compared with placebo was 2.57 (95%: 1.39, 4.74, P<0.01).

In the combined RCTs, the success rates were as follows: LHRH:21% (95% CI: 18%, 21%) hCG:19% (95% CI: 13%, 25%) placebo:4% (95% CI: 2%, 6%).

In the trials excluding retractile testes the descent rate with: LHRH:12% (95% CI: 8%, 15%), hCG:19% (95% CI: 13%, 25%), placebo:5% (95% CI: 2%, 7%)

Success rates in the non-randomised trials: 47% (95% CI: 43%, 50%) of the testes descended after LHRH, 33% (95% CI: 31%, 35%) after hCG treatment.

Effect of the original position of testes on the success rate (from RCTs and non-randomised trials): after treatment with LHRH or hCG, 14% of abdominal (95% CI: 12%, 17%), 47% of inguinal (95% CI: 44%, 49%), 59% of prescrotal (95% CI: 53%, 64%) and 57% of high scrotal testes (95% CI: 45%,69%) descended.

The effect of age on the outcome of hormonal treatment (RCTs only):

There was no significant difference in the success rates of hormonal treatments between those under 4 years or 4 years and over.

In 5 of the 11 randomised LHRH trials, the long-term outcome was documented; 24% (95%: 13%, 35%) of the testes that descended after LHRH treatment suffered a relapse.

**Authors’ conclusions**

Either LHRH or hCG can be tried in the treatment of high scrotal, prescrotal and even inguinal testicular retention, but because of a high risk of failure in the treatment of unpalpable testes with hormones, it is reasonable to consider surgery as an alternative primary treatment.

**CRD commentary**

A thorough review, although greater detail of the individual trials could have been included. The definition of 'non-randomised' trials is unclear.

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