Contraception and the risk of ectopic pregnancy: a meta-analysis
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Authors' objectives
To explore the association between contraceptive methods and the risk of ectopic pregnancy.

Searching
MEDLINE was searched from 1978 to 1994 for publications in English, French, German or Dutch using the keywords 'ectopic pregnancy' and 'risk factors'. Gynaecological and epidemiological journals were handsearched, and the reference lists of identified articles were examined.

Study selection
Study designs of evaluations included in the review
Case-control and cohort studies were included.

Specific interventions included in the review
Contraceptive methods: current or previous use of intra-uterine contraceptive device (IUCD), tubal sterilisation, oral contraception or condom use.

Participants included in the review
Case-control studies: cases were women with confirmed ectopic pregnancy. Controls for current contraceptive use had to be defined as non-pregnant or pregnant women. Controls for past contraceptive use were recently delivered women.

Cohort studies: a cohort of women exposed to a contraceptive was compared with a cohort of non-exposed controls.

Outcomes assessed in the review
The risk of ectopic pregnancy was assessed.

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 studies had to be matched for age, or the age of the women was reported as being equal. The authors do not state how the papers were assessed for validity, or how many of the authors performed the validity assessment.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
The common odds ratio (OR) was calculated using the Mantel-Haenszel method.

How were differences between studies investigated?
Homogeneity was tested using the Breslow-Day test.
Results of the review

Twelve case-control studies and one cohort study were included; the total number of patients was not stated.

The common ORs for current use of oral contraception were 0.19 (95% confidence interval, CI: 0.15, 0.24) and 1.8 (95% CI: 0.9, 3.4) when compared to non-pregnant and pregnant controls, respectively.

The OR for past use of oral contraception was reported as 1.04 (95% CI: 0.52, 2.1) in a cohort study and 1.2 (95% CI: 0.92, 1.5) in case-control studies.

Results from studies of current use of IUCD show significant heterogeneity. The OR for current use of IUCD were significantly less than 1.0 in 3 of 4 case-control studies when compared to non-pregnant controls, and significantly greater than 1.0 in all 4 studies when compared to pregnant controls. The overall OR was 1.6 (95% CI: 1.4, 1.8) according to 4 case-control studies on past IUCD use.

The common ORs for tubal sterilisation were 0.48 (95% CI: 0.40, 0.59) and 9.3 (95% CI: 4.9, 18) when compared to non-pregnant and pregnant controls, respectively.

The ORs for condom use in a case-control study were 0.18 (95% CI: 0.11, 0.29) and 0.97 (95% CI: 0.24, 4.0) when compared to non-pregnant and pregnant controls, respectively.

Authors' conclusions

All contraceptives studied were shown to protect against ectopic pregnancy when compared to non-pregnant controls. Compared to pregnant controls, barrier and oral contraception methods were not significant risk factors. Patients who became pregnant, despite tubal sterilisation, showed a 9-fold increased risk of ectopic pregnancy. For patients who became pregnant despite IUCD use, the risk was also increased.

CRD commentary

Details of the individual studies were not presented. No confounder other than age was considered.

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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.