Contraception for women in selected circumstances
Curtis M K, Chrisman C E, Peterson H B

Authors' objectives
To assess recent evidence on the risks of contraceptive use in women with specific pre-existing medical conditions.

Searching
MEDLINE and PREMEDLINE were searched from January 1995 to January 2002. The keywords were stated. The reference lists from identified studies and review articles were also checked. No attempts were made to locate unpublished studies or conference abstracts.

Study selection

Study designs of evaluations included in the review
The inclusion criteria were not defined in terms of the study design. Case-control studies, cohort studies with and without control groups, and cross-sectional studies were included in the review.

Specific interventions included in the review
Studies of the following combinations of contraceptive methods used in specific women were eligible for inclusion: combined oral contraceptive (OC) use in women with hypertension; combined OC use in women with headaches; combined OCs used as emergency contraception; progesterone-only contraceptives in young women; progesterone-only contraceptives in breast-feeding women; tubal sterilisation in young women; intra-uterine devices (IUDs) in women who are human immunodeficiency virus (HIV) positive or who have acquired immunodeficiency syndrome (AIDS); IUDs in women at high risk of HIV infection; hormonal contraception in women who are HIV positive or who have AIDS; and hormonal contraception in women who are at high risk of HIV infection. Hypertension was diagnosed by self-report, while migraine was based on self-report, defined criteria or the use of a questionnaire.

Participants included in the review
Studies of women using the following combinations of contraceptive methods were eligible for inclusion: combined OCs in women with hypertension; combined OCs in women with headaches; combined OCs used as emergency contraception; progesterone-only contraceptives in young women; progesterone-only contraceptives in breast-feeding women; tubal sterilisation in young women; IUDs in women who are HIV positive or who have AIDS; IUDs in women at high risk of HIV infection; hormonal contraception in women who are HIV positive or who have AIDS; and hormonal contraception in women who are at high risk of HIV infection.

Outcomes assessed in the review
Studies that reported risks or adverse effects of contraceptive use were eligible for inclusion. The included studies assessed the risk of stroke, acute myocardial infarction, venous thromboembolism, adverse events, bone mineral density, breast-feeding performance, infant health and HIV infection or transmission.

How were decisions on the relevance of primary studies made?
The authors did not state how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity. Three authors classified the level of evidence.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The information tabulated for the case-control studies included: source of controls; year of study; method used to measure blood-pressure (BP), migraine and stroke; outcomes assessed; and results. The odds ratios and 95%
confidence intervals were presented for case-control studies of OC use in women with hypertension and for studies of ischaemic stroke in women with migraine who were on OCs.

Methods of synthesis
How were the studies combined?
The studies were grouped according to the combination of intervention and women's characteristics. The evidence for each combination was summarised from level I to level II-3 according to pre-defined criteria. Level I evidence required at least one adequately designed randomised controlled trial; level II-1 required well-designed non-randomised controlled trials; level II-2 required well-designed cohort or case-control studies; level II-3 required multiple time series with or without the intervention, or dramatic results from uncontrolled experiments.

How were differences between studies investigated?
Some differences between the studies were mentioned in the text, but a formal assessment of the differences was not undertaken.

Results of the review
Thirty-three studies were included in the review. The total number of participants was not reported.

Combined OC use in women with hypertension (8 case-control studies with approximately 4,900 cases and 13,880 controls).

Level II-2 evidence: combined OC use increased cardiovascular events in women with hypertension. The odds ratio for stroke ranged from 3.1 to 10.7 in European women with hypertension, compared with women without hypertension, and from 14.3 to 14.5 in developing countries. Women who did not have their BP measured before starting combined OCs had an increased risk of ischaemic stroke and acute myocardial infarction, but not venous thromboembolism, compared with women who did have their BP checked. Combined OC use in women with headaches (4 case-control studies with 1,025 cases and 1,978 controls).

Level II-2 evidence: women with a history of migraine plus combined OC use were two to four times more likely to have a stroke than women with a history of migraine alone.

Combined OCs used as emergency contraception.

No studies were found of the use of combined OCs as emergency contraception in women with medical conditions.

The findings of the following assessed treatments were either no harmful result or no relevant studies: progesterone-only contraceptives in young women; progesterone-only contraceptives in breast-feeding women; tubal sterilisation in young women; IUDs in women who are HIV positive or who have AIDS; IUDs in women at high risk of HIV infection; hormonal contraception in women who are HIV positive or who have AIDS; hormonal contraception in women who are at high risk of HIV infection.

Authors' conclusions
Combined OC use increased cardiovascular complications in women with hypertension or migraine.

CRD commentary
The review question was clear in terms of the participants, intervention and outcomes. Limiting the search to articles published in English and identified in one database may have resulted in the omission of other relevant studies. The lack of an attempt to locate unpublished studies raises the possibility of publication bias. Three authors summarised the evidence and this reduced bias. However, the methods used to select the studies and extract the data were not described. Validity was not assessed, hence the quality of the included studies cannot be judged. Relevant data from some, but not all, of the studies were tabulated and other studies were described in the text of the review. The studies were appropriately summarised by considering the level of evidence for a specified intervention in specific groups of
women. The evidence presented appears to support the authors’ conclusions.

**Implications of the review for practice and research**

*Practice:* The authors stated that combined OC in women with hypertension and migraine headaches (apart from migraine in women younger than 35 years and without focal neurologic symptoms) was associated with either risks that outweighed the advantages, or unacceptable health risks.

Progesterone-only contraception in women aged less than 18 years of age was associated with advantages that generally outweighed the risks. The theoretical or proven risks of progesterone-only contraceptives in breast-feeding women of less than 6 weeks postpartum generally exceeded the advantages.

The advantages of hormonal contraception in women who are HIV positive, at high risk of HIV or sexually transmitted diseases, or who have AIDS, outweigh the risks. The theoretical or proven risks of IUD in these women outweigh the advantages.

No conditions were found in which the risks of emergency contraception outweighed the advantages.

Caution is advised when counselling young women about sterilisation.

*Research:* The authors stated that the risks of OC should be updated as new evidence emerges.

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