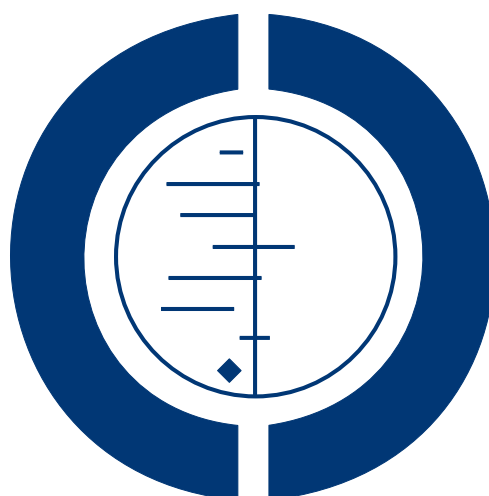


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Combined oral contraceptive pills for treatment of acne

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ABSTRACT

Background

Acne is a common skin disorder among women. Although no uniform approach to the management of acne exists, combination oral contraceptives (COCs), which contain an estrogen and a progestin, often are prescribed for women.

Objectives

To determine the effectiveness of combined oral contraceptives (COCs) for the treatment of facial acne compared to placebo or other active therapies.

Search methods

In January 2012, we searched for randomized controlled trials of COCs and acne in the computerized databases of the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, POPLINE, and LILACS. We also searched for clinical trials in ClinicalTrials.gov and the International Clinical Trials Registry Platform (ICTRP) (Aug 2011). For the initial review, we wrote to researchers to seek any unpublished or published trials that we might have missed.

Selection criteria

We considered randomized controlled trials reported in any language that compared the effectiveness of a COC containing an estrogen and a progestin to placebo or another active therapy for acne in women.

Data collection and analysis

We extracted data on facial lesion counts, both total and specific (i.e., open or closed comedones, papules, pustules and nodules); acne severity grades; global assessments by the clinician or the participant, and discontinuation due to adverse events. Data were entered and analyzed in RevMan. For continuous data, we calculated the mean difference (MD) and 95% confidence interval (CI). For dichotomous data, we calculated the Peto odds ratio (OR) and 95% CI.

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Main results

The review includes 31 trials with 12,579 participants. Of 24 comparisons made, 6 compared a COC to placebo, 17 different COCs, and 1 compared a COC to an antibiotic. Of nine placebo-controlled trials with data for analysis, all showed COCs reduced acne lesion counts, severity grades and self-assessed acne compared to placebo. A levonorgestrel-COC group had fewer total lesion counts (MD -9.98; 95% CI -16.51 to -3.45), inflammatory and non-inflammatory lesion counts, and were more likely to have a clinician assessment of clear or almost clear lesions and participant self-assessment of improved acne lesions. A norethindrone acetate COC had better results for clinician global assessment of no acne to mild acne (OR 1.86; 95% CI 1.32 to 2.62). In two combined trials, a norgestimate COC showed reduced total lesion counts (MD -9.32; 95% CI -14.19 to -4.45), reduced inflammatory lesion and comedones counts, and more with clinician assessment of improved acne. For two combined trials of a drospirenone COC, the investigators' assessment of clear or almost clear skin favored the drospirenone group (OR 3.02; 95% CI 1.99 to 4.59). In one trial, the drospirenone-COC group showed greater (more positive) percent changes for total lesion count (MD 29.08; 95% CI 3.13 to 55.03), inflammatory and non-inflammatory lesion counts, and papule and closed comedone counts. A dienogest-COC group had greater percentage decreases in total lesion count (MD -15.30; 95% CI -19.98 to -10.62) and inflammatory lesion count, and more women assessed with overall improvement of facial acne. A CMA-COC group had more 'responders,' those with 50% or greater decrease in facial papules and pustules (OR 2.31; 95% CI 1.50 to 3.55)

Differences in the comparative effectiveness of COCs containing varying progestin types and dosages were less clear, and data were limited for any particular comparison. COCs that contained chlormadinone acetate or cyproterone acetate improved acne better than levonorgestrel. A COC with cyproterone acetate showed better acne outcomes than one with desogestrel, but the studies produced conflicting results. Likewise, levonorgestrel showed a slight improvement over desogestrel in acne outcomes, but results were not consistent. A drospirenone COC appeared to be more effective than norgestimate or nomegestrol acetate plus 17 β -estradiol but less effective than cyproterone acetate.

Authors' conclusions

This update yielded six new trials but no change in conclusions. The six COCs evaluated in placebo-controlled trials are effective in reducing inflammatory and non-inflammatory facial acne lesions. Few important and consistent differences were found between COC types in their effectiveness for treating acne. How COCs compare to alternative acne treatments is unknown since only one trial addressed this issue. The use of standardized methods for assessing acne severity would help in synthesizing results across trials as well as aid in interpretation.

PLAIN LANGUAGE SUMMARY

Effect of birth control pills on acne in women

Acne is a common skin problem for women. Several treatments are available. Combined birth control pills, which have the hormones estrogen and progestin, are often prescribed for women with acne. This review looked at how well birth control pills worked to treat facial acne.

In January 2012, we did a computer search for studies of birth control pills and acne treatment. Outcomes could be the amount of acne, how severe the acne was, and how many women dropped out early due to problems. We wrote to researchers to find other trials. We included randomized trials in any language that compared two types of birth control pills, a pill and a placebo or 'dummy,' or a pill and another acne treatment.

The review now includes 31 trials with a total of 12,579 women. Ten studies used dummies. Overall, 24 pairs of treatments or placebos were compared: 6 compared a birth control pill and a placebo, 17 compared different types of birth control pills, and 1 compared a pill and an antibiotic. The six pills studied in trials with placebos worked well to reduce facial acne. When we compared pills with different hormones, we did not see any important and consistent differences.

The conclusions did not change when we added trials in this update. Most trials compared two types of pills for acne treatment. Better quality studies are needed to compare one birth control pill with another. Studies should use standard methods for reporting how severe the acne is. How birth control pills compare to other acne treatments like antibiotics is not clear. Since birth control pills improve acne, they can be used to treat women with acne who also want birth control.