

# Review: Spironolactone may be effective for hirsutism but data are lacking on its effectiveness for acne vulgaris in women

Farquhar C, Lee O, Toomath R, Jepson R. Spironolactone versus placebo or in combination with steroids for hirsutism and/or acne. *Cochrane Database Syst Rev.* 2003;(4):CD000194.

## QUESTION

Does spironolactone, used alone or combined with steroids (including oral contraceptives), reduce excess hair growth (hirsutism), acne, or both in women?

## DATA SOURCES

Studies were identified by searching the Cochrane Menstrual Disorders and Subfertility Group trials register (searched 12 June 2003), Bioabstracts, PsycLit, CINAHL, Social Sciences Index, Dissertation Abstracts, Current Contents (1995 to 1996), and EMBASE/Excerpta Medica; scanning bibliographies of relevant studies; and contacting drug companies.

## STUDY SELECTION AND ASSESSMENT

Studies were selected if they were randomized controlled trials (RCTs) comparing spironolactone with placebo, spironolactone with steroids (including oral contraceptives), different dosages of spironolactone, or spironolactone in combination with steroids with steroids alone for reducing hirsutism, acne, or both in women of reproductive or postmenopausal years. Studies of women with hirsutism secondary to a functional androgenic tumor, or iatrogenic or nonendocrine causes of hyperandrogenism or hirsutism

were excluded. Studies were assessed for methodologic quality.

## OUTCOMES

Improvements in hirsutism, acne, and Ferriman–Galwey hair scores (range 0 to 36).

## MAIN RESULTS

7 RCTs were included; all had small sample sizes ( $\leq 41$  patients/study). 5 RCTs involved women with hirsutism. Treatments lasted between 2 and 12 months. 2 RCTs reported greater subjective improvement in hair growth with spironolactone, 100 mg/d, than with placebo (Table), and 1 study reported that spironolactone, 100 mg/d, improved Ferriman–Galwey scores (mean 10.0) more than placebo (mean 17.2) (weighted mean difference [WMD]  $-7.20$ , 95% CI  $-3.42$  to  $-10.98$ ) at 6 months. However, no differences existed between spironolactone and placebo for other outcomes. 1 RCT showed that spironolactone, 100 mg/d, improved

Ferriman–Galwey scores more than cyproterone acetate, 12.5 mg/d (WMD 1.18, CI 0.26 to 2.1), or finasteride, 5 mg/d (WMD 2.34, CI 1.45 to 3.23), at 1 year after the end of treatment. 1 RCT compared 2 dosages of spironolactone (100 vs 200 mg/d) for hirsutism and showed no differences in androstenedione or dehydroepiandrosterone levels at 3 months. Data were insufficient on the effectiveness of spironolactone for acne vulgaris.

## CONCLUSION

Some evidence exists that spironolactone reduces hirsutism, but insufficient evidence exists on the effectiveness of spironolactone for the management of acne vulgaris in women.

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### Spironolactone, 100 mg/d vs placebo for hirsutism at 6 to 9 months\*

Outcome	Weighted event rates		RBI (95% CI)	NNT (CI)
	Spironolactone	Placebo		
Subjective improvement in hair growth (2 studies)	57%	14%	257% (32 to 864)	3 (2 to 6)

\*Abbreviations defined in Glossary; weighted event rates, RBI, NNT, and CI calculated from data in article using a fixed-effects model.

## COMMENTARY

Perception of hirsutism is by definition subjective, and women present with a wide variation in severity. Endocrine investigation differs according to clinical severity, associated features (e.g., acne, patterned hair loss from the scalp, and menstrual irregularity), and the background of the clinician. The extent to which women with hirsutism who have no evidence of virilization require investigation is debatable.

Just as hirsutism is difficult to define, it is difficult to monitor. Clinical response requires hairs to complete  $\geq 1$  growth cycle and takes  $\geq 6$  months. In western countries, pharmacologic therapy now may be less important than physical therapies, such as laser hair removal.

The review by Farquhar and colleagues concluded that 6 months of therapy with 100 mg daily of spironolactone, an oral antiandrogen, improves hirsutism more than placebo. It concludes that no difference exists between 100 and 200 mg daily of spironolactone, but some women clearly show a dose response. Interestingly, this review asserts superiority of spironolactone over cyproterone acetate, although another Cochrane systematic review (1) found no difference between them. The apparent conflict may be explained by the different dosages of cypro-

terone acetate. In clinical practice, no clear difference exists between the 2 agents. For many clinicians, the potential adverse effects of corticosteroids outweigh their benefits in the treatment of hirsutism.

The use of spironolactone in the treatment of acne is complex. Several alternatives exist for acne treatment. Some evidence exists to support the use of cyproterone acetate, alone or in combination with tetracycline, in the treatment of women with acne (2). Based on the review of Farquhar and colleagues, evidence concerning spironolactone is insufficient to recommend its use for this indication at present.

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## References

1. Van der Spuy ZM, le Roux PA. Cyproterone acetate for hirsutism. *Cochrane Database Syst Rev.* 2003;(4):CD001125.
2. Greenwood R, Brummitt L, Burke B, Cunliffe WJ. Acne: double blind clinical and laboratory trial of tetracycline, oestrogen-cyproterone acetate, and combined treatment. *Br Med J (Clin Res Ed).* 1985;291:1231-5.