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## What do we know about prescribing spironolactone for acne?

Spironolactone may be a useful treatment for women with persistent acne, but questions remain about the drug and prescription of it, write Miriam Santer and Alison Layton

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Recurrent acne can have a negative psychosocial impact in adolescence, which can persist into adulthood. Topical treatments are recommended as first line by guidelines, but many people with acne are treated with extended courses of antibiotics, which should be prescribed alongside topical treatments, although are often prescribed on their own. Spironolactone may be a useful alternative to oral antibiotics for women with persistent acne.

Our experiences of prescribing spironolactone for acne differ. Alison, a dermatologist, has prescribed it successfully for acne over the past 20 years on the basis of clinical experience, case series, and very small trials.<sup>1</sup> Miriam, a GP, has never prescribed spironolactone for acne, but has often prescribed it for cardiovascular conditions. Following evidence from this trial (<https://www.bmj.com/content/381/bmj-2022-074349>), Miriam will prescribe it for persistent acne in women too, as may other GPs. However, GPs are likely to have questions regarding prescribing spironolactone for women with acne.

One question is, when might spironolactone be appropriate for women with acne? Topical preparations are effective first line treatments for acne,<sup>2-4</sup> but it is not unusual for people to experience adherence issues to topical therapies or find them only partially effective.<sup>5</sup> Prescribing prolonged courses of oral antibiotics for acne remains common.<sup>6</sup> But acne guidelines recommend limiting treatment with oral antibiotics to three to six months to avoid the emergence of antimicrobial resistance.<sup>2-4</sup> Clinicians report barriers to discontinuing oral antibiotics once they have been started,<sup>7</sup> including patient reluctance to stop treatment and frequent acne relapses.

Our research shows that, for women with acne that persists despite topical treatment, prescribing oral spironolactone alongside topical treatment has the potential to significantly reduce long term oral antibiotic prescribing.

Another question GPs have asked us is about spironolactone and pregnancy. Although spironolactone is cautioned against in pregnancy, it is less teratogenic than oral tetracyclines,<sup>8</sup> which are commonly used for acne in young women.<sup>9</sup> We suggest it is appropriate that in usual practice spironolactone be treated with no special restriction beyond contraceptive counselling, as is the case for oral tetracyclines.

We have also been asked about monitoring renal function and potassium levels for women with acne prescribed spironolactone. A baseline check of renal function and potassium levels is advisable prior to

commencing spironolactone for acne in order to exclude renal impairment.<sup>3</sup> However, ongoing monitoring is unnecessary for most young women,<sup>3</sup> and has recently been advocated only in women over 45 or with relevant comorbidities.<sup>10</sup>

Finally, GPs have asked us about dosing of spironolactone for acne. Our findings on tolerability suggest it may be pragmatic to initiate spironolactone treatment at 50 mg and, if tolerated, escalate the dose to 100 mg within one or two weeks. It is possible that this approach would lead to spironolactone becoming effective faster, given that this study demonstrated better response at six months than at three.

Unfortunately, spironolactone is not considered an acceptable treatment option for men with acne. Use of spironolactone reduces blood testosterone levels which can result in gynaecomastia (breast swelling),<sup>11</sup> and concerns have been raised about loss of sexual function in men.

Spironolactone may therefore be a welcome therapeutic option for women with persistent acne. Anecdotally, many women invited to participate in the study told us that they had already heard of spironolactone via social media and were keen to try it. They shared the huge impact that acne has had on their self-esteem and the importance of having a drug available that avoids some of the side effects of other therapeutic options. Spironolactone may provide an effective alternative to antibiotics that avoids emergence of antibiotic resistance and provides a longer term solution than antibiotics to women with persistent acne. Questions remain about starting dose, relative effectiveness in comparison with other treatments, and which subgroups benefit most from spironolactone. Some of these questions will be answered in ongoing trials. It is also hoped that further understanding of the mechanism of action of spironolactone may lead to new treatment options, for men as well as for women.

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<sup>1</sup> Layton AM, Eady EA, Whitehouse H, Del Rosso JQ, Fedorowicz Z, van Zuuren EJ. Oral spironolactone for acne vulgaris in adult females: a hybrid systematic review. *Am J Clin Dermatol* 2017;18:91. doi: 10.1007/s40257-016-0245-x pmid: 28155090

<sup>2</sup> Xu J, Mavranzeouli I, Kuznetsov L, Stephen Murphy M, Healy E. Guideline Committee. Management of acne vulgaris: summary of NICE guidance. *BMJ* 2021;374. doi: 10.1136/bmj.n1800 pmid: 34544730

- 3 Zaenglein AL, Pathy AL, Schlosser BJ, et al. Guidelines of care for the management of acne vulgaris. *J Am Acad Dermatol* 2016;74:73.e33. doi: 10.1016/j.jaad.2015.12.037 pmid: 26897386
- 4 Thiboutot DM, Dréno B, Abanmi A, et al. Practical management of acne for clinicians: An international consensus from the Global Alliance to Improve Outcomes in Acne. *J Am Acad Dermatol* 2018;78(Suppl 1):23, 23.e1. doi: 10.1016/j.jaad.2017.09.078 pmid: 29127053
- 5 Ip A, Muller I, Geraghty AWA, Platt D, Little P, Santer M. Views and experiences of people with acne vulgaris and healthcare professionals about treatments: systematic review and thematic synthesis of qualitative research. *BMJ Open* 2021;11:e041794. doi: 10.1136/bmjopen-2020-041794 pmid: 33526498
- 6 Lown M, McKeown S, Stuart B, et al. Prescribing of long-term antibiotics to adolescents in primary care: a retrospective cohort study. *Br J Gen Pract* 2021;71:94. doi: 10.3399/BJGP.2021.0332 pmid: 34607798
- 7 Platt D, Muller I, Sufraz A, Little P, Santer M. GPs' perspectives on acne management in primary care: a qualitative interview study. *Br J Gen Pract* 2020;71:84. doi: 10.3399/BJGP.20X713873 pmid: 33257464
- 8 Liszewski W, Boull C. Lack of evidence for feminization of males exposed to spironolactone in utero: A systematic review. *J Am Acad Dermatol* 2019;80:8. doi: 10.1016/j.jaad.2018.10.023 pmid: 30352280
- 9 Francis NA, Entwistle K, Santer M, et al. The management of acne vulgaris in primary care: a cohort study of consulting and prescribing patterns using CPRD. *Br J Dermatol* 2016;176:15. doi: 10.1111/bjd.15081 pmid: 27716910
- 10 Thiede RM, Rastogi S, Nardone B, et al. Hyperkalemia in women with acne exposed to oral spironolactone: A retrospective study from the RADAR (Research on Adverse Drug Events and Reports) program. *Int J Womens Dermatol* 2019;5:5-7. doi: 10.1016/j.ijwd.2019.04.024 pmid: 31360748
- 11 Rose LI, Underwood RH, Newmark SR, Kisch ES, Williams GH. Pathophysiology of spironolactone-induced gynecomastia. *Ann Intern Med* 1977;87:403. doi: 10.7326/0003-4819-87-4-398 pmid: 907238