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A better basis for sustainable use of antibiotics

EDITORIAL

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There is a need to strengthen the evidence base for the Norwegian antibiotics guidelines. This base should preferably be grounded in clinical efficacy.

Antibiotic therapy is not a static exercise. New studies are constantly being published, old truths are challenged, bad habits – and good habits – are shaken up and the resistance situation changes. The antibiotics guidelines are zealously discussed, both because antibiotics are widely used and thereby involve many patients and a large proportion of clinicians, and because inappropriate use harms both individual patients and society as a whole.

What we all wish for is a better evidence base for the recommendations. In the Journal of the Norwegian Medical Association, Thaulow and colleagues are now making an important contribution: an attempt to strengthen the basis for recommending empirical treatment of paediatric UTIs (1). Based on detection of resistance in urinary isolates, the authors find, for example, that there is a higher proportion of trimethoprim resistance in E. coli in children when compared to adults. They therefore recommend removing trimethoprim as an empirical treatment of paediatric UTIs.

In Norway, we are blessed with a sensible and sustainable use of antibiotics. In all likelihood, this is a main reason why are fortunate enough to occupy fourth place from the bottom in Europe when it comes to the burden of infections caused by resistant bacteria (2). This sensible and sustainable use is maintained by the national guidelines. However, these recommendations are under

continuous pressure, for the very reason that in Norway, we recommend more narrow-spectrum treatment regimes for some conditions than in many other countries. The European Committee on Antimicrobial Susceptibility Testing (EUCAST) is an important body that defines breakpoints, meaning the thresholds for when a bacterial strain is defined as susceptible or resistant to an antibiotic. In 2019, EUCAST changed the definitions for the combination of *Haemophilus influenzae* and amoxycillin, with the result that overnight, the existing Norwegian guidelines recommended too low a dose of amoxycillin. For the hospitals, it is a major challenge that EUCAST no longer publishes updated breakpoints for certain bacterium-antibiotic combinations. The consequence is that treatment regimes that have been used in Norway for decades are suddenly called into doubt.

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Problems with access to narrow-spectrum drugs is another issue that puts pressure on the Norwegian treatment tradition. This applies to children in particular. There is fortunately little need for paediatric antibiotic formulations, but this also makes for low sales volumes and little profitability. A growing number of paediatric formulations are therefore disappearing from the market (3). It is difficult to recommend drugs that have no marketing authorisation in Norway, and useful drugs have on several occasions been removed from the guidelines for this reason. This issue has been raised by politicians (4), and it is being considered whether Norway should establish domestic production of narrow-spectrum antibiotics (5).

The national guidelines for antibiotics use both in primary care and in hospitals are currently undergoing revision. The revised guidelines for primary care will be submitted for an open consultation round this summer. In the ongoing revision, special emphasis has been placed on coordinating the recommendations from various Norwegian sources. Complete consistency in all areas is neither possible, nor desirable. The recommendations are given in different settings, and there can be good reasons for treating patients with a specific condition differently in hospitals from in general practice. It is thus an important point in the guidelines for primary care that doctors who have a perspective from outside the hospitals be given a key role.

The recommendations referred to by Thaulow and colleagues are not consistent. The emergency guidelines from the Norwegian Paediatric Association (6) discourage the use of trimethoprim as an empirical treatment for paediatric UTIs, while the National Guidelines for Antibiotics Use in Primary Care (7) recommend trimethoprim as an equal first choice in cases of lower urinary tract infections. So far, we have been able to live well with this – children who are treated for suspected UTIs in general practice differ as a

group from children who are treated for this condition in hospital. It is thus a weakness that the data on which the study is based do not distinguish between general practice and hospitals.

Neither an increase in the amoxycillin dosage, nor the removal of trimethoprim as an empirical treatment for paediatric UTIs will upset Norway's fortunate situation in terms of antimicrobial resistance. However, we need to know what we are doing. The Scandinavian therapeutic tradition is admired internationally, and we should help spread it further, rather than adapt. It is fully possible that trimethoprim ought to be removed from the National Guidelines for Antibiotics Use in Primary Care as an empirical treatment for lower UTIs in children (8). The findings made by Thaulow and colleagues will be of great benefit in this discussion (1). In addition, however, we might have wished for data from the primary healthcare service, and not least, good clinical studies that assess treatment efficacy.

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