

## Will antibiotic resistance sign the return of urethral dilators?

Before the availability of antibiotics, chronic urethritis meant regular — not so effective and rather painful — urethral irrigations. Frequently, chronic urethritis was complicated by urethral strictures, restricting urine and sperm flow. The treatment for such strictures was its dilation under minimal analgesia but major pain (Figure 1 and 2). For some patients, urethral dilation was to be done on a regular basis. The arrival of antibiotics meant the calvary of those men was over, but now, the threat of antibiotic resistance is upon us.

First, *Neisseria gonorrhoeae* (NG) does not stop developing resistance to antibiotics. One by one, antibiotics that had been effective in killing it have now been rendered ineffective by the high ability of *Neisseria gonorrhoeae* to develop resistance — from sulfonamides to penicillins, then to tetracyclines to quinolones, and now to cephalosporins and macrolides. In Québec, province of our public lab, the results for antimicrobial susceptibility have been published, demonstrating up to 40% resistance for ciprofloxacin and 15% for azithromycin<sup>(1)</sup>. Still, rare cases of decreased susceptibility are observed, but not yet resistance for cefixime and

ceftriaxone. There is a serious need of new antibiotics able to fight the decreased susceptibility to ceftriaxone and cefixime that is being seen more and more around the world. Older drugs or combination of drugs could help, but those drugs that could be used for gonorrhea are injectable, and the burden of care would be increased for the already stretched STI workforce. An effective vaccine for *Neisseria gonorrhoeae* is still expected. In the meantime, a small decrease in *Neisseria gonorrhoeae* might be seen in recipients of meningococcal vaccines. The meaning of this, on a large scale, remains to be evaluated.

Second, there is the emergence of resistance from *Chlamydia trachomatis* (Ct) to azithromycin. Recently, a paper in STD journal by Kissinger<sup>(2)</sup> established that, in samples of men who have sex with women with Ct-related nongonococcal urethritis, the rate azithromycin treatment failure was between 6.2% and 12.8%. This range of failure is lower than the one previously published, but higher than the target chlamydia treatment failure rate of < 5% desired by the World Health Organization.

Third, there is the *Mycoplasma genitalium* rapid antimicrobial evolution. In a paper presented at the last CDC meeting in Atlanta, Chernesky and colleagues eloquently made the case by testing with Aptima test remnant specimens with an MG TMA test demonstrated an overall positivity rate of 8.1% with a 34.3% macrolide resistance rate. The majority of infections were in women infected with Ct and/or NG. Further studies are required to explore geographic differences in infection and macrolide resistance<sup>(3)</sup>.

Until good STI prophylactic vaccines and new antibiotics are found, there will be difficult times, when only better antibiotic stewardship can push back the time when antimicrobial resistance signs the return of urethral dilators.

High-priority conditions are conditions for which clinicians commonly deviate from best practices for antibiotic prescribing and include situations in which antibiotics are overprescribed, underprescribed, or misprescribed — wrong antibiotic agent, dose, or duration<sup>(4)</sup>. Hindering aspects for prescribing antibiotics appropriately might include clinician's knowledge gaps about best practices and clinical practice guidelines, clinician's perception of patient expectations for antibiotics and/or their decreased satisfaction with clinical visits when antibiotics are not prescribed, and perceived pressure to see patients quickly. The Core Elements of Outpatient Antibiotic Stewardship are as follows:

- Commitment: demonstrating dedication to and accountability for optimizing antibiotic prescribing and patient safety;
- Action for policy and practice: implementing at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modifies it as needed;
- Tracking and reporting: monitoring antibiotic prescribing practices and offering regular feedback to clinicians,

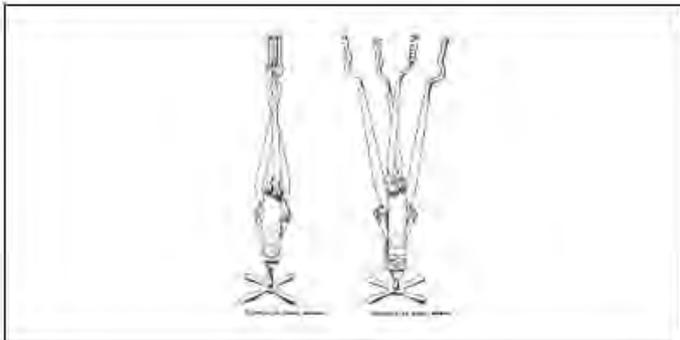


Figure 1 – Early 20<sup>th</sup> century urethral dilators.

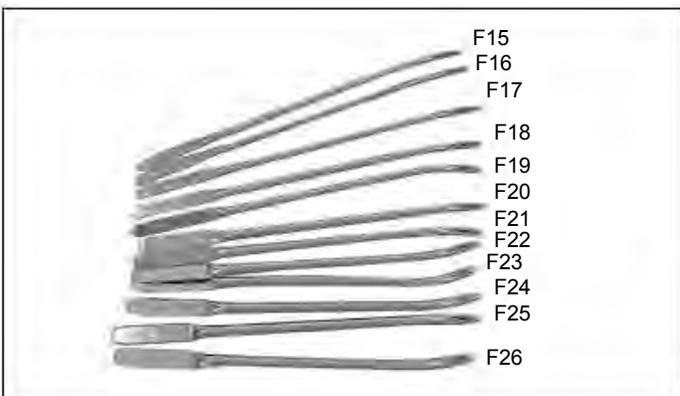


Figure 2 – Modern urethral dilators.

or having clinicians assess their own antibiotic prescribing practices; and

- Education and expertise: providing educational resources to clinicians and patients on antibiotic prescribing, and ensuring access to needed expertise on optimizing antibiotic prescribing.

In the meantime, it is also fair to say the easiest case to treat will remain those which have not yet been acquired, due to the adhering to safer sexual practices!

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