

Relevance of dual therapy in the  
treatment of a confirmed *Neisseria*  
*gonorrhoeae* infection in persons 14  
years of age and older

English summary

Une production de l'Institut national  
d'excellence en santé  
et en services sociaux (INESSS)



# SUMMARY

## Relevance of dual therapy in the treatment of a confirmed *Neisseria gonorrhoeae* infection in persons 14 years of age and older

### Introduction

This systematic review was conducted as part of the update of the Institut national d'excellence en santé et en services sociaux (INESSS)'s optimal usage guide (OUG) on the pharmacological treatment of sexually transmitted and blood-borne infections (STBBIs) dealing with uncomplicated *Chlamydia trachomatis* or *Neisseria gonorrhoeae* infections. During this update, one aspect of the treatment of gonococcal infections raised certain questions for which it was necessary to consult primary studies.

Currently, the 2018 version of INESSS's optimal usage guide recommends, for the treatment of confirmed *Neisseria gonorrhoeae* infections in non-allergic patients, dual therapy combining ceftriaxone or cefixime and azithromycin. The experts involved in developing the 2019 version of the British Association for Sexual Health and HIV (BASHH) clinical practice guideline (CPG) questioned the relevance of this dual therapy, and its CPG now recommends the use of ceftriaxone monotherapy as first-line treatment for gonococcal infections when the antibiotic susceptibility is not known. Like the BASHH, INESSS questioned the relevance of this dual therapy, particularly the role of azithromycin, in a context where the evolution of *Neisseria gonorrhoeae* resistance to a number of antibiotics is increasingly limiting the treatment options.

In this context, a systematic literature review was necessary in order for INESSS to take a position on the treatment options to be preferred for confirmed *N. gonorrhoeae* infections.

### Methodology

Four assessment questions were drawn up for the purpose of this systematic review:

1. How efficacious is combined ceftriaxone/azithromycin antibiotic therapy compared to ceftriaxone alone in patients 14 years of age and older treated for an uncomplicated urethral, endocervical, rectal or pharyngeal *Neisseria gonorrhoeae* infection?
2. How efficacious is combined cefixime/azithromycin antibiotic therapy compared to cefixime alone in patients 14 years of age and older treated for an uncomplicated urethral, endocervical, rectal or pharyngeal *Neisseria gonorrhoeae* infection?
3. How efficacious is combined gentamicin/azithromycin antibiotic therapy compared to gentamicin alone in patients 14 years of age and older treated for an uncomplicated urethral, endocervical, rectal or pharyngeal *Neisseria gonorrhoeae* infection?

4. For the treatment of an uncomplicated urethral, endocervical, rectal or pharyngeal *Neisseria gonorrhoeae* infection in patients 14 years of age and older, could the use of antibiotic therapy combining ceftriaxone or cefixime and azithromycin delay the progression of third-generation cephalosporin resistance in *Neisseria gonorrhoeae* compared to monotherapy with ceftriaxone or cefixime?

The search for scientific information pertaining to all the research questions was conducted in several databases and was limited to certain types of publications in French or English. The bibliographies in the selected items were examined as well. The quality of these items was independently assessed by two scientific professionals using a tool with recognized validity, the Critical Appraisal Skills Programme (CASP) assessment tool adapted for cohort studies. The results were independently extracted by two scientific professionals using pre-established grids and are presented in the form of a narrative synthesis. For each outcome examined, the quality of all the scientific evidence was assessed using four predetermined criteria (methodological quality, consistency, clinical impact of the intervention, and generalizability).

## Results


The systematic search for scientific information yielded only three studies for answering Question 1 and three for answering Question 2, two of the studies being the same for both questions. The studies identified do not appear to show a difference in efficacy between azithromycin in combination with ceftriaxone and ceftriaxone alone, but it was difficult from these studies to rule on the efficacy of antibiotic therapy combining azithromycin and cefixime compared to the efficacy of cefixime alone for the treatment of a *Neisseria gonorrhoeae* infection at the sites of infection other than the pharynx. For this site, the efficacy of cefixime appeared to be inferior to that of the azithromycin/cefixime combination.

The systematic search for scientific information did not yield any primary studies that evaluated the efficacy of combined gentamicin/azithromycin antibiotic therapy compared to gentamicin alone in patients treated for an uncomplicated *Neisseria gonorrhoeae* infection or any primary studies on the effect of antibiotic therapy combining ceftriaxone or cefixime and azithromycin on delaying the progression of third-generation cephalosporin resistance in *Neisseria gonorrhoeae* compared to ceftriaxone or cefixime alone.

## Conclusion

The available scientific data on the efficacy of combination antibiotic therapy including azithromycin (ceftriaxone or cefixime and azithromycin) compared to monotherapy with ceftriaxone or cefixime is limited and has several methodological limitations. As well, no publications were identified regarding the effect of antibiotic therapy combining ceftriaxone or cefixime and azithromycin on delaying the progression of third-generation cephalosporin resistance in *Neisseria gonorrhoeae* compared to ceftriaxone or cefixime alone. Considering all the scientific data found, it is difficult to draw any clear conclusions concerning the relevance of dual therapy in the treatment of gonococcal infections.

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