

# Evidence Update

Summary of a Cochrane Review

Other Infectious Diseases Series

What antibiotics are best in typhoid and paratyphoid infections?

For adults fluoroquinolones seem best in adults, but data in children are limited.

## Background

Multiple-drug resistant (MDR) strains of typhoid and paratyphoid limit antibiotic choice.

## Inclusion criteria

### Studies:

Randomized controlled trials.

### Participants:

People with microbiologically confirmed typhoid or paratyphoid fever.

### Intervention:

Intervention: fluoroquinolones.

Control: different fluoroquinolones, different regimens, other antibiotics.

### Outcomes:

Clinical treatment failure, microbiological treatment failure, relapse, fever clearance time, hospital stay, adverse events.

## Results

- Thirty-eight trials were included; 27 in adults. Sixteen trials had adequate allocation concealment. Most trials had small sample sizes.
- In adults without identified MDR strains, clinical treatment failure between fluoroquinolones and chloramphenicol was similar (594 participants, 9 trials) but fluoroquinolones reduced relapse (odds ratio 0.14, 95% confidence interval 0.04 to 0.50; 467 participants, 6 trials). There was no significant difference in the occurrence of adverse events.
- Fluoroquinolones were better than amoxicillin, ampicillin and cefixime in small trials examining clinical failure and relapse.
- There were fewer clinical failures with fluoroquinolones than ceftriaxone (OR 0.08, 95% CI 0.01 to 0.45; 120 participants, 3 trials), but there was no significant difference in microbiological failure or relapse.
- In comparisons between fluoroquinolones, norfloxacin increased the risk of clinical failure compared with other fluoroquinolones: pefloxacin (OR 30.60, 95% CI 5.75 to 162.86, 200 participants, 3 trials), ofloxacin (OR 28.15, 95% CI 4.80 to 165.14; 123 participants, 3 trials), and enoxacin (OR 4.15, 95% CI 1.77 to 9.76; 142 participants, 2 trials).

## Authors' conclusions

### Implications for practice:

In adults, fluoroquinolones may perform better than chloramphenicol, ceftriaxone or cefixime. However, trials were small and of variable methodological quality. No conclusions could be made for superiority of any particular duration of fluoroquinolone therapy and no firm conclusions can be made regarding the use of fluoroquinolones in children.

### Implications for research:

Larger or multicentred well-designed trials of fluoroquinolones in children are needed, particularly in outpatient settings with monitoring of adverse events.