

Switch from clarithromycin to azithromycin - One option to optimise macrolide use through clinical pharmacists

C. Querbach^{1,2}, P. Maran², M. Trojan², N. Keller², K. Rothe¹, R. Bernard^{1,2}
Klinikum rechts der Isar, TU München
1. Stabsstelle Antibiotic Stewardship, 2. Pharmacy Department

Background

Clinicians may not often be aware of the importance of clarithromycin drug interactions. In contrast to azithromycin, clarithromycin is a strong inhibitor of the cytochrome-P450 enzyme 3A4. To date we could not find any published data directly comparing potential interactions of clarithromycin and azithromycin.

Purpose

The aim of this study was to have clinical pharmacists evaluate the prescription interaction potential of either clarithromycin or azithromycin and to evaluate the indication and duration of the macrolide therapy.

Material & Methods

From 05/2018 to 07/2018 a total of 48 patients at a German university hospital on clarithromycin IV were identified. Two clinical pharmacists independently evaluated the patients drug therapy. Database-based interaction checks (1-4) of the complete medication regimens were performed comparing clarithromycin versus azithromycin in accordance to a German validated classification system (ABDA, 5). The most important antibiotic-related interventions were discussed with the physician in charge. Complete medication regimens, indications, duration of therapy, number and severity of interactions, as well as the implementation of the interventions were documented.

Results

Interventions were necessary in 37/48 patients. Clarithromycin was combined with 166 different medications, in total 548 combinations were checked with the following results:

- 16 patients were discontinued off clarithromycin due to missing indication
- 8 patients were switched to azithromycin IV
- 4 patients were switched to azithromycin PO
- 7 patients continued on clarithromycin under close monitoring
- 2 patients had interventions regarding the co-medication

If switched from clarithromycin IV to azithromycin, then a reduction of clinically relevant drug interactions would have resulted from 168/548 to 115/548 with shift to lower severity interactions according to the ABDA classification system (Fig. 1). 78/168 interactions could not have been avoided (Fig. 2), of these 75 cases were due to QTc prolongation.

Conclusions

The involvement of a clinical pharmacist helps optimize the indication, duration of therapy, and the prescription interaction potential of either clarithromycin or azithromycin.

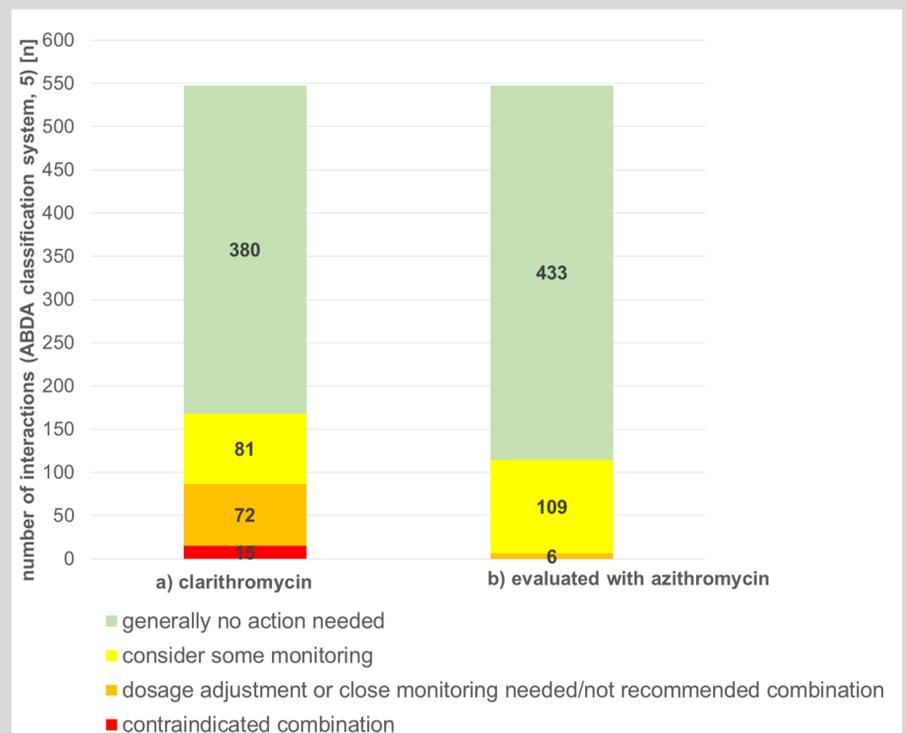


Fig. 1: Number of interactions (n=548) a) with clarithromycin b) evaluated with azithromycin

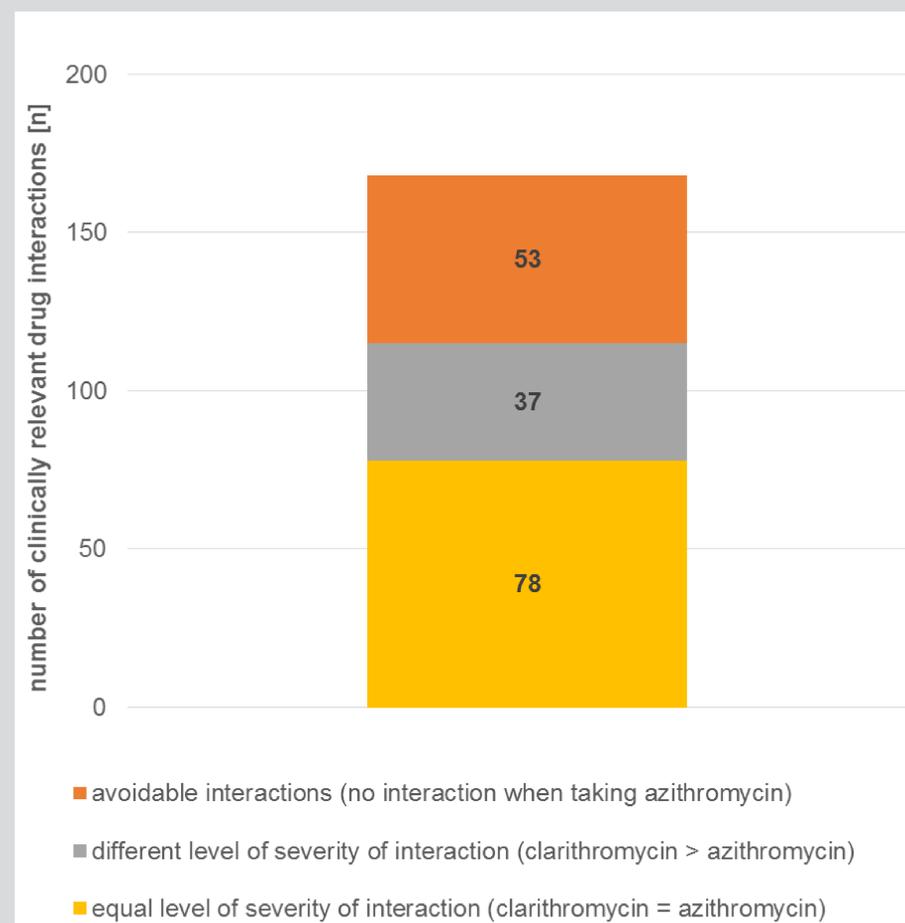


Fig. 2: Differentiated assessment of „relative“ level of severity of interactions

