Possible Interaction between Azithromycin and Cyclosporin: A Case Report

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Dear Sir,

Azithromycin, an azalide antimicrobial agent derived from the macrolide antibiotic erythromycin, has a similar mechanism of activity, but different antimicrobial profile, pharmacokinetics and metabolism [1]. While erythromycin is known to interfere with cyclosporin metabolism by inhibiting cytochrome P450 and decreasing clearance of that drug [2], azithromycin has not been shown to affect cytochrome P450 in rats [3]. Indeed, azithromycin interactions with other drugs have not been reported so far. We report here the case of a transplant recipient in whom azithromycin probably interacted with cyclosporin, i.e. increased cyclosporin blood levels.

A 44-year-old female renal transplant patient was admitted because of high fever, cough and dispnea. Her chest X-rays revealed bilateral pulmonary infiltrations; atypic pneumonia was supposed, and treatment with azithromycin (500 mg 1st day + 250 mg daily for another 4 days) was started. She was transplanted 5 years before this event. Her immunosuppressive therapy was not changed and included: cyclosporin (2 mg/kg/day), azathioprine (25 mg) and prednisone (20 mg). Actually, she had a failing graft with stable renal function (serum creatinine was around 400 $\mu\text{mol/l}$). After 10 days of hospitalization, she was discharged in good clinical condition. During and after azithromycin treatment, her cyclosporin blood concentrations were closely followed up, looking for possible azithromycin/cyclosporin interaction.

Table 1. Cyclosporin levels (ng/ml) using monoclonal RIA

2 months before admission

Days after azithromycin exposure

6th

3rd

10th 20th 30th

149

66

45

50

28

27

References

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As shown in table 1, a marked increase in cyclosporin blood level was observed 2 days after the introduction of azithromycin. Because an interaction at the cytochrome P450 level is unlikely, it probably takes place at another, yet unknown level. The prolonged effect of azithromycin on cyclosporin kinetics is presumably due to the long half-life of this particular antibiotic. Although this observation needs further evaluation, we suggest to add azithromycin to the list of potential interactions with cyclosporin.

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