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### The acute interstitial nephritis induced by azithromycin

Sir,

Azithromycin, a well-tolerated macrolide antibiotic that can be dosed once daily, is commonly prescribed both in children and adults with respiratory tract infections.

Interstitial nephritis induced by azithromycin has been previously described in two patients [1, 2]. The first case presented chronic renal failure after the second episode of acute interstitial nephritis (AIN) and the second case was still on haemodialysis 10 months after the onset of AIN.

### Case report

A 16-year-old girl, previously in good health, presented at our paediatric emergency department with a 10-day history of sickness, fatigue, vomiting, malaise and abdominal pain, without rash or arthralgia. Two weeks before admission, the patient had received only a 6-day course of azithromycin (3 g total or 10 mg/kg/day) for bronchitis without other pharmacologic treatment.

Laboratory tests were significant only for blood urea nitrogen of 60 mg/dL (9.99 mmol/L) and serum creatinine concentration of 2.6 mg/dL (230.09 mmol/L). Urinalysis revealed a specific gravity of 1015, 2+ protein, 10 white blood cells per high power field and eosinophils, without red blood cells. The serum C3 and C4 concentrations were normal. Antinuclear and cytoplasmic antibodies were negative. Urine, blood and stool cultures were negative.

A diagnosis of AIN was made on clinical grounds, based on renal failure and urinalysis, and was confirmed by renal biopsy, which showed a mixed cellular infiltrate including lymphocytes, plasma cells, eosinophils, neutrophils with interstitial oedema and tubular damage associated with negative immunofluorescence. No granulomas were seen and the glomeruli were normal. She received methylprednisolone (10 mg/kg/day) for 3 days, followed by oral prednisone (0.5 mg/kg/day) for 2 weeks. After 2 weeks, laboratory values showed significant improvement with a serum creatinine concentration of 1.0 mg/dL (88.55 mmol/L) with normal urinalysis. After the next 4 weeks, renal function recovered completely.

### Discussion

To the best of our knowledge, two cases of interstitial nephritis have been so far reported following treatment with azithromycin, which resulted in persistent renal injury [1, 2]. Azithromycin, a generally well-tolerated macrolide that can be dosed once daily, is commonly prescribed both in children and in adults with respiratory tract infections. Recent data indicate that azithromycin is beneficial in lung disease of cystic fibrosis because it directly suppresses excessive inflammation [3].

Renal dysfunction, both acute and chronic, is increasingly recognized in cystic fibrosis [4]. It is currently assumed that renal dysfunction results from exposure to aminoglycosides, but we hypothesize that azithromycin could also play a role.

In conclusion, AIN induced by azithromycin may be reversible. Moreover, it is important to consider azithromycin as a possible cause of acute and chronic kidney damage both in cystic fibrosis and in previously healthy subjects.

*Conflict of interest statement.* None declared.

<sup>1</sup>Emergency Unit, Clinica Pediatrica De Marchi, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy  
<sup>2</sup>Pediatric Nephrology and Dialysis, Clinica Pediatrica De Marchi, Foundation IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

Chiara Persico<sup>1</sup>  
Alessia Rocchi<sup>1</sup>  
Alberto Edefonti<sup>2</sup>  
Gregorio P. Milani<sup>1</sup>  
Marta B. Mazzoni<sup>1</sup>  
Emilio F. Fossali<sup>1</sup>

*Correspondence and offprint requests to:* Gregorio P. Milani; E-mail: yoyobiancorosso@hotmail.com

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