Usefulness of Norfloxacin Prophylaxis in Late Recurrent Urinary Tract Infection after Renal Transplantation

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Dear Sir,

Urinary tract infection (UTI) is one of the most frequent problems in renal transplant patients [1]. It has been reported that early UTI produces considerable morbidity [2]. By contrast, late UTI (when it appears after the third posttransplant month) frequently has a more benign clinical course [3]. However, almost 50% of patients with late UTI could have recurrent infection episodes[1]. In recurrent UTI after renal transplantation nitrofurantoin or more frequently cotrimoxazole [3, 4] have been used. Recently, in clinical practice a new fluorquinolone (norfloxacin) has been introduced. Several trials have demonstrated that norfloxacin is a drug of great efficacy in UTI without serious side effects [5]. These reports prompted us to perform a prospective study with norfloxacin in the prophylaxis of late recurrent UTI in renal transplant patients.

At the moment we control 250 renal transplant patients in a special outpatient office. Seven of them (2.8%) with late recurrent UTI (more than three episodes per year, after the third posttransplant month) were selected. UTI was diagnosed if a mid-stream urine specimen yielded more than 10⁵ CFU/ml in a standard culture. Four of the patients were on ciclosporin-prednisone and 3 under azathioprine-prednisone immunosuppression. They were transplanted between 6 and 51 months (mean 24.5 months) before. All of them had normal renal function. Nobody presented with diabetes, hypercalcemia, hypercalciuria, litiasis or vesicoureteral reflux in the kidney graft. In 3 patients the original disease was reflux nephropathy with evidence of vesicoureteral reflux grade

I–III in native kidneys. Six of 7 patients suffered at least one episode of acute pyelonephritis. The most frequent infecting organism was *Escherichia coli*. All of them were susceptible to norfloxacin in the last culture of urine. After a standard course of norfloxacin (800 mg/daily) during 10 days, prophylactic treatment was started. The prescribed norfloxacin dose was 400 mg/daily taken at bedtime. Thereafter, a monthly urine culture was performed.

The principal clinical characteristics of the patients and the results before and after norfloxacin prophylaxis are shown in table 1. Our results indicate that norfloxacin prophylaxis in late recurrent UTI after renal transplantation could be beneficial. So, there was a dramatic

diminution, almost disappearance of UTI episodes. In fact, only 1 presented a new episode of infection. Also, the drug was well tolerated without important side effects. The efficacy of drugs such as nitrofurantoin and cotrimoxazole in recurrent UTI is well known [3, 4]. When the infecting organism becomes resistant to these drugs or side effects appear [6], norfloxacin could be another useful alternative treatment. In fact, several trials have demonstrated that norfloxacin is as effective as cotrimoxazole in UTI treatment and with milder side effects [6]. On the other hand it is important to remark that in 3 of our patients the original disease was reflux nephropathy. These patients received a renal transplant without prior surgical correction in spite of persistent vesicoureteral reflux. As we have seen [7], the posttransplant course of these patients was uncomplicated. So, after the prophylaxis for UTI was started the evolution was excellent. These results reinforce the idea that pretransplant

194

Hernandez Poblete/Morales/Prieto/Andrés/Ortuño/Rodicio

Table 1. Incidence of UTI before and after norfloxacin prophylaxis in renal transplantation

Patients	Age/sex	Original disease	Previous UTI incidence	Prophylaxis period	episodes/year	months
UTI						
incidence						
episodes						
after norfloxacin/year						

1						
39/F						
reflux nephropathy						
4						
16						
1						
2						
42/M						
chronic glomerulonephritis						
3						
18						
none						
3						
35/F						
reflux nephropathy						
3						
18						
none						
4						
35/F						
reflux nephropathy						
3						
12						
none						
5						
58/F						
polycystic kidney disease						

3

15

none

6

22/F

nephronoptosis

4

9

none

7

44/F

chronic glomerulonephritis

3

12

none

surgical correction or nephroureterectomy should not be performed on a routine basis [3, 7]. In summary, our results strongly support the usefulness of norfloxacin prophylaxis in late recurrent UTI after renal transplantation.

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