Correspondence

evaluated clinically, and samples of exudate were obtained for bacteriological examination. Isolation and identification of *N gonorrhoeae* were performed by standard methods; β lactamase activity was detected using the chromogenic cephalosporin (Cefinase, BBL) and acidimetric (β lactamase Detection Papers, Oxoid) methods. The total number of patients with PPNG infection was 25 (27 cases of gonorrhoea, 26 PPNG strains), which represented 26.7% of the total number of gonococcal strains in this study. Table I shows some characteristics of these patients, most of whom were immigrant African workers of low socio-economic status. None of the patients with PPNG infection had acquired it abroad, and none had had sexual intercourse with travellers from outside Spain. The source of infection was prostitutes in 26 instances, but contacts were largely dispersed in Barcelona and neighbouring villages. A high percentage of patients infected with PPNG strains had had previous or concomitant sexually transmitted diseases, but this incidence was similar to that observed in other patients infected with *N gonorrhoeae*. Characterisation of plasmids was undertaken by Dr Palomares, University of Seville on three strains: two strains showed the "Asia" 4.5 megadalton plasmid with the 24.5 megadalton transfer plasmid, and one strain showed the "Africa" 3.2 megadalton β lactamase plasmid without the transfer plasmid.

Treatment with spectinomycin (2 g as a single intramuscular injection), cefmetazole (1 g as a single intramuscular injection), or rosoxacin (300 mg as a single oral dose) was successful in 17 patients (13, three, and one patient respectively). The remaining 10 patients, who had been treated with either spectinomycin or cefmetazole, did not attend for follow up. Postgonococcal urethritis was found in three patients.

As shown in table II, the increasing incidence of infection with PPNG strains in

the past year has necessitated substantial modifications in the treatment of patients with gonorrhoea in the north east of Spain. These data, however, should not be considered as representative of the situation in Catalonia, but may indicate an emerging incidence of PPNG strains among prostitutes.

Yours faithfully,
José L Pérez
Roser Savall
Francesc Valls
Ramón Priu
Mateu Cabré

Hospital Sant Jaume i Santa Magdalena,
Mataró (Barcelona), Spain.

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TO THE EDITOR, *Genitourinary Medicine*

Treatment of gonorrhoea with ceftriaxone

Sir,
Dixon *et al* (*Genitourin Med* 1986;62:78-81) compared ceftriaxone and penicillin for treating uncomplicated gonorrhoea, and commented that ceftriaxone might be a suitable alternative to penicillin where the incidence of infection with penicillinase producing *Neisseria gonorrhoeae* (PPNG) strains is rising. In their study, however, they reported only one case of infection due to a PPNG strain treated with ceftriaxone. We would like to report our experience of treating with ceftriaxone gonococcal infection caused by PPNG.

We compared intramuscular ceftriaxone 250 mg with intramuscular spectinomycin 2 g in treating uncomplicated gonorrhoea in an open, parallel group, randomised study. Of 291 men and 146 women patients who were fully evaluable, 220 were treated with ceftriaxone and 217 with spectinomycin.

After excluding patients who had presumably been reinfected by continued sexual exposure, there were eight treatment failures in patients treated with spectinomycin (cure rate for spectinomycin = 96.3%) and one treatment failure with ceftriaxone (cure rate for ceftriaxone = 99.5%).

Postgonococcal urethritis, defined as finding five or more pus cells/high power field, was detected in 23.2% of patients treated with spectinomycin and 23.9% treated with ceftriaxone.

The incidence of PPNG strains in the study was 6.5% (41 of 629 gonococcal isolates), and the minimum inhibitory concentrations (MICs) of ceftriaxone, cefotaxime, and spectinomycin were available for 29 of these isolates. The table shows the range of MICs for the PPNG isolates using two inocula, 10^5 and 10^3 colony forming units (cfu).

TABLE Range of minimum inhibitory concentrations (MIC) of three drugs for PPNG strains

	MIC (mg/l) with gonococcal inocula of:	
	10^3 cfu	10^5 cfu
Ceftriaxone	0.002-0.015	0.002-0.015
Cefotaxime	0.004-0.03	0.008-0.06
Spectinomycin	16	16-32

PPNG = penicillinase producing *Neisseria gonorrhoeae*.
cfu = colony forming units.

A single treatment failure, in a patient with a PPNG infection, occurred after treatment with spectinomycin.

The results confirm the efficacy of ceftriaxone in treating gonorrhoea due to both PPNG and non-PPNG strains.

Yours faithfully,
K A McLean*
P E Munday*
C A Ison†

*Department of Genitourinary Medicine,
†Department of Medical Microbiology, St. Mary's Hospital, London W2 1PG.

TABLE II Increase in strains from January 1985 to May 1986

Period	Total gonococci	No (%) PPNG
January-June 1985	32	2 (6.3)
July-December 1985	38	12 (31.6)
January-May 1986	24	12 (50.0)

PPNG = penicillinase producing *Neisseria gonorrhoeae*.