MULTIDRUG RESISTANCE IN NEISSERIA GONORRHOEAE (A Case Report)

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Introduction

The gonococcus is usually sensitive to many antibiotics including penicillin G, ampicillin, tetracycline, cotrimoxazole and erythromycin. However, the percentage of isolates sensitive to these drugs show marked geographical variations [1-3]. It is therefore, important to base antibiotic policies on the sensitivity pattern of local isolates. Ease of administration and cost are normally kept in mind. Over the past 3-4 decades there has been a definite progression towards decreased sensitivity to various antibiotics. Therefore newer drugs have been recommended for the treatment of gonorrhoea which include third generation cephalosporins (ceftriaxone), spectinomycin and fluoroquinolones (norfloxacin, ciprofloxacin). A case of gonococcal urethritis in which there was resistance to the commonly used drugs and norfloxacin is presented here.

Case Report

A 30-year-old male patient was admitted with complaints of urethral discharge of 15 days duration. He gave history of exposure, and also of having taken treatment from a local practitioner at his unit location. The exact treatment which he took was not known. When the urethral discharge did not decrease he was transferred to this hospital. He was treated with Procaine Penicillin 2.4 megaunits IM plus Probenecid 1 gm a day orally, Doxycycline 100 mg OD x 15 days, Co-trimoxazole 5 tabs 12 hrly for 3 doses, and Norfloxacin 800 mg PO stat repeated after 5 days. He did not respond to any of this treatment. At this stage his urethral secretions were directly plated onto prewarmed chocolate agar plates. Gram stained smears of the urethral discharge showed gram negative diplococci both extracellularly and intracellularly in pus cells. After 24 hours incubation in 5-10 per cent CO₂ at 37°C, small irregular greyish colonies were obtained. They were oxidase positive. Gram's stain of the smeared colonies revealed gram negative diplococci. Antibiotic sensitivity was done by disk diffusion technique on chocolate agar plates incubated in 5-10 per cent CO₂ at 37°C.

This revealed resistance to benzyl penicillin, ampicillin, tetracycline, trimethoprim, norfloxacin and ciprofloxacin. The isolate was sensitive to cefuroxime and ceftazidime. However, tests for

MIC or Beta - lactamase production could not be performed. Patient's STS and HIV status, both were negative.

The patient thereafter responded to treatment with oral cefuroxime (1 gm single dose).

Discussion

The gonococcus has gradually started acquiring resistance to even the newer drugs. However, two studies in India in recent years [1,5] have not found any resistance to norfloxacin and ciprofloxacin. However, both studies found a fairly high resistance to penicillin (17.88% and 36.93% respectively), whereas one of the studies [1] found resistance to gentamicin also. Tetracycline resistance has been found high in Central Africa [4]. In Rwanda, as part of a monitoring programme, men with gonococcal urethritis were evaluated after treatment with norfloxacin 800 mg (in 1986 and 1987) and with ofloxacin 400 mg in 1989; which resulted in eradication of *Neisseria gonorrhoeae* in 96 per cent and 97.1 per cent respectively. Resistance to penicillin and tetracycline was found increased considerably in 1989. The study concluded that antimicrobial susceptibility to the fluoroquinolones may also decrease rapidly [6]. A study from Japan revealed a rapid decrease in the susceptibility to norfloxacin [7]. The same has been reported from North America [8]. Though a study from Southeast Asia has concluded that the emerging resistance to fluoroquinolones is not a cause of concern [9], it is worth concluding that norfloxacin and ofloxacin should be used judiciously and with caution in the treatment of gonococcal urethritis, lest microbial resistance becomes a cause of concern in years to come.

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