

Sexually transmitted diseases in Riyadh, Saudi Arabia

A study of patients attending a teaching hospital clinic

S S PAREEK AND M N H CHOWDHURY

From the Faculty of Medicine, University of Riyadh, Saudi Arabia

SUMMARY Of 716 men attending consecutively a dermatovenereological clinic in Riyadh, Saudi Arabia, over a period of a year 70·1% had non-specific genital infection, a figure which is four times that for gonorrhoea and 13 times that for syphilis. Most of the patients were single men aged between 20 and 29 years and had acquired their infections abroad. Although Riyadh is a cosmopolitan city with a large foreign population 79% of the infections occurred in local inhabitants.

Introduction

Riyadh, the capital of Saudi Arabia, is a cosmopolitan city with an estimated population of one million people. It is expanding rapidly as a result of the oil boom and is called the "city of cranes" because of the amount of construction work in progress. Development projects have attracted workers from various countries, mainly Egyptians, Yemenis, Koreans, Philipinos, Pakistanis, Indians, Americans, and Europeans.

The majority of the population was not born in Riyadh, and only one in eight residents over 12 years of age is native to the city. Of the total population 50% are under 20 years of age and 57% are men. The average age for marriage is between 16 and 18 years for girls and between 20 and 25 for men.¹ There is a stringent moral code among the native population because of strict adherence to Islam; premarital and extramarital sexual relationships are not only forbidden but are a criminal offence. Nevertheless, sexually transmitted disease (STD) is prevalent in Riyadh. Some reasons for this are extensive travelling abroad by local inhabitants, affluence, the provision of paid home-leave for most expatriates, and long separation of some foreign employees from their wives.

Riyadh has four major hospitals, which provide facilities for the investigation and treatment of STDs. Some patients seek treatment from private practi-

tioners, others consult pharmacists and native doctors.

Patients and methods

Seven hundred and sixteen men were seen consecutively in the dermatovenereological clinic of the King Abdul Aziz Teaching Hospital, Riyadh, between December 1978 and December 1979.

BACTERIOLOGY

Urethral specimens were collected from all men who presented with a urethral discharge. A sterile cotton-wool swab was introduced into the anterior urethra and gently rotated; the swab was placed in a transport medium and sent to the microbiology department where it was plated on Thayer-Martin medium (Oxoid) and on chocolate agar. After incubation in a candle jar at 37°C for 24-48 hours gonococci were identified by their morphology and by oxidase and sugar fermentation tests. The sensitivity of isolates was tested by Mast multidiscs against penicillin (1 unit), erythromycin (15 µg), cephalosporin (5 µg), gentamicin (10 µg), and ampicillin (10 µg). All strains were tested for β-lactamase production with intralactam strips by the method of Wheldon and Slack.²

MICROSCOPY AND SEROLOGY

Smears made from the urethral swabs were stained by Gram's method and examined for the presence of Gram-negative intracellular diplococci. Wet preparations of discharge were examined for *Trichomonas vaginalis* and *Candida albicans*. The urine of some patients presenting with haematuria was examined for *Schistosoma haematobium*.³

Address for reprints: Dr S S Pareek, Faculty of Medicine, University of Riyadh, P O Box 2925, Riyadh, Saudi Arabia

Accepted for publication 27 February 1981

Venereal Disease Research Laboratory, fluorescent treponemal antibody-absorption, and *Treponema pallidum* haemagglutination tests were performed on all patients. Darkground examinations and Gram-staining of smears for *Haemophilus ducreyi* were carried out on genital ulcers.

Results

DIAGNOSES

The diagnoses of the 716 patients are shown in the table. The commonest STD was non-specific urethritis (66.7%); this, with post-gonococcal urethritis (3.4%), was about four times as common as gonorrhoea. Of the strains of gonococci tested, 23 were resistant to penicillin with minimum inhibitory concentrations (MICs) ranging from 0.25 to ≥ 4 $\mu\text{g/ml}$; 10 of these strains produced β -lactamase. Syphilis was diagnosed in 39 (5.4%) patients; these comprised 16 primary, 12 secondary, five early latent, and six late latent cases. Only small numbers of the other STDs were seen.

TABLE Analysis of diagnoses in patients attending an STD clinic in Riyadh, Saudi Arabia

Diagnoses	No	%
Syphilis	39	5.4
Gonorrhoea	132	18.4
Non-specific urethritis	478	66.7
Post-gonococcal urethritis	24	3.4
Pediculosis pubis*	10	1.4
Genital warts	9	1.3
Chancroid	9	1.3
Candidosis	9	1.3
Herpes simplex	4	0.6
Molluscum contagiosum†	2	0.3
Total	716	100

*Four of these cases were associated with NSU and two with gonorrhoea

†One case was associated with NSU and one with gonorrhoea

EPIDEMIOLOGY

Infection was contracted from a prostitute abroad or from a casual partner in Saudi Arabia in 86.5% of the cases; in 13.5% the source of infection was the spouse.

Of the adult patients, 489 (68.2%) were aged between 20 and 29 years, and 222 (31%) were married. The nationality of the patients was: Saudis, 566 (79%); Yemenis, 44 (6.2%); Sudanese, 23 (3.2%); Egyptians, 46 (6.5%); and others, 37 (5.1%). Most of the patients were students or from the professional classes, but syphilis and gonorrhoea were also common among skilled and unskilled labourers. Although Riyadh is a cosmopolitan city with a large number of foreigners local inhabitants contributed 79% of the total cases of STD.

Discussion

Most of the patients (68.2%) were aged between 20 and 29 years, a higher proportion than the 51% reported from Ibadan,⁴ 40% from Lagos,⁵ and 51% from Singapore.⁶ Young people are at particular risk because they are at their peak of sexual activity and they travel abroad extensively. The older generation, being more religious and relatively free from Western influence, is less likely to contract STD.

Non-specific genital infection accounted for 70.1% of the cases seen. This incidence is higher than that reported from other areas.^{4,6,7} This group included 24 cases of post-gonococcal urethritis. Willcox⁷ has reported that 20-30% of men treated for gonorrhoea with penicillin may develop post-gonococcal urethritis. Twenty-three of the 634 patients with urethritis had haematuria; nine of these were diagnosed as having non-specific urethritis with superimposed infection with *Schistosoma haematobium*.

The proportion of patients with gonorrhoea (18.2%) was similar to that found in Ibadan,⁴ Uganda,⁸ and Singapore.⁶ This does not reflect the overall incidence in Riyadh but is a low figure in contrast to England,⁹ New Zealand,¹⁰ and South Australia.¹¹ Five of the 10 infections with β -lactamase-producing gonococci were imported from South-east Asia¹²; the patients were treated with gentamicin.

Although syphilis does not seem to be common in Riyadh, six of the 39 cases were of late syphilis, a higher proportion than that reported elsewhere.^{4,5,13} The other STDs comprised only 6% of the total, a lower figure than that reported in England.⁹ No cases of trichomonal infection were seen, although tests were carried out to detect this organism.

Accurate statistics on the prevalence of STDs in Saudi Arabia are not available because these are not notifiable diseases. Furthermore, there are no specialised centres for the diagnosis and treatment of these conditions. The largest groups at risk are students and skilled and unskilled workers; these groups should receive proper health education. Special attention should be directed to women who do not generally attend clinics and, when they do so, often do not complete treatment.

References

1. Sebai ZA, Baker TD. Endemic syphilis (bejel) in a Bedouin community in Saudi Arabia. *Ain Shams Medical* 1979;30:13-7.
2. Wheldon DB, Slack MPE. An evaluation of intralactam, a preparation for the detection of β -lactamase production by *Haemophilus influenzae*. *J Clin Pathol* 1979;32:738-40.
3. Pareek SS. Urethritis due to *Schistosoma haematobium* with superimposed gonorrhoea. *Sex Transm Dis* 1980;7:137-8.
4. Sogbetun AO, Alausa KO, Osoba AO. Sexually transmitted diseases in Ibadan, Nigeria. *Br J Vener Dis* 1977;53:155-60.

5. Rotimi VO, Somorin AO. Sexually transmitted diseases in clinic patients in Lagos. *Br J Vener Dis* 1980;56:54-6.
6. Rajan VS. Sexually transmitted diseases on a tropical island. *Br J Vener Dis* 1978;54:141-3.
7. Willcox RR. Epidemiological importance of concealed non-gonococcal urethritis. *Br J Vener Dis* 1979;55:149-53.
8. Arya OP, Msanzumulare H, Tuber SR. Clinical, cultural and demographic aspects of gonorrhoea in a rural community in Uganda. *Bull WHO* 1973;49:587.
9. Department of Health and Social Security. Sexually transmitted diseases. Extract from the *Annual Report of the Chief Medical Officer of the Department of Health and Social Security for the Year 1976*. *Br J Vener Dis* 1978;54:57-9.
10. Platts WM. Epidemiology of gonorrhoea and syphilis in New Zealand. *Br J Vener Dis* 1979;55:138-41.
11. Jorgensen D. Epidemiology of gonorrhoea and syphilis in South Australia. *Br J Vener Dis* 1979;55:131-7.
12. Chowdhury MNH, Pareek SS, Mahgoub El-Sheikh. Penicillinase-producing *Neisseria gonorrhoea* in Riyadh, Saudi Arabia. *Br J Vener Dis* 1981;57:256-8.
13. Taha OMA, Hag Ali M, Omer EE, Ahmed MA, Abbaro SA. Study of STDs in patients attending venereal disease clinics in Khartoum, Sudan. *Br J Vener Dis* 1979;55:313-5.