

Sexually transmitted diseases in Ibadan, Nigeria

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SUMMARY Although previous workers have emphasised that venereal disease is rife in many developing countries there are no reliable statistics on the relative incidence of such infections. This dearth of information about these infections in Africa is directly related to economic factors, and the lack of modern diagnostic facilities and medical manpower. The pattern of these diseases was studied over a 30-month period at a hospital clinic serving an African population of about 2 million people. Standard diagnostic methods were used. The age distribution of patients conformed with that in other parts of the world except that more pre-pubertal patients were seen. The male to female ratio was 3:1. Non-specific genital infections were the most common (25.9%) followed closely by post-pubertal gonorrhoea (19.5%). Pre-pubertal gonorrhoea was commoner than reported elsewhere (4.0%) and this may be because the children have been in contact with infected clothing of their parents or members of their family. Most strains of *Neisseria gonorrhoeae* were sensitive to penicillin by the disc method, but a few were markedly resistant to this and other agents. It is to be expected that the problem of gonococcal drug resistance will increase unless effective legislation is introduced to discourage self-medication with antimicrobial preparations. Venereophobia was common (6.6%) and sociocultural factors may play a dominant role in the incidence of the basically psychiatric condition. Syphilis constituted 2.5% of diagnoses and this can be regarded as an ominous sign in an area where yaws was endemic two decades ago and is now virtually non-existent. Altogether 9.5% of cases had multiple diagnoses making them dangerous sources of multiple infections. Up to 70% of the patients were infected after a promiscuous sexual activity. Such a high level of promiscuity would undoubtedly lead to an even greater dissemination of these infections. It is essential to provide facilities for diagnosis and treatment in every major town in Africa, otherwise it will be difficult, if not impossible, to control such infections.

Introduction

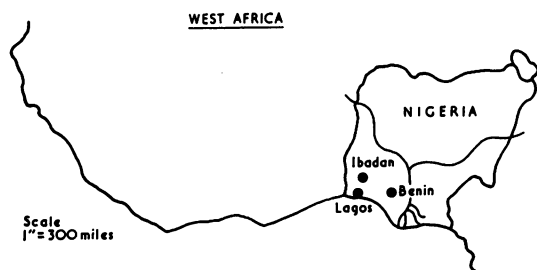
It is now accepted that sexually transmitted diseases (STDs) constitute major medical and social problems in those parts of the world where adequate statistics are available. This is particularly so in the case of post-pubertal gonorrhoea, syphilis, and non-specific genital infections (Idsøe *et al.*, 1973). It has been suggested that gonorrhoea is the most common communicable disease in the USA (O'Rourke, 1969). The same pattern can therefore be predicted for developing countries such as Nigeria where, unfortunately, the facilities for the correct diagnosis and treatment of these diseases are inadequate so

that there are no reliable statistics. The general impression is that STDs, particularly gonorrhoea, have reached endemic proportions in many parts of Africa.

Nigeria is a fast developing West African country with rapidly expanding cities as a result of the migration of young people from rural to urban areas. This migration has been encouraged by the rapid economic development following the boom in the oil industry. Nigeria is the largest single geographical unit along the west coast of Africa and occupies a position where the western parts of the African continent meet equatorial Africa (Figure). Its area of about 360 000 square miles lies between latitudes 4° and 14° north of the equator, extending north from the coast for over 650 miles. The preliminary figures of the 1973 census recently released give a population of approximately 80 million.

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The federal capital is Lagos on the south west coast. The country is divided into 19 states, each with its own state government. Although Nigeria is wholly within the tropics, the climate varies from tropical at the coast (temperatures ranging from 26°C (80°F) to 32°C (90°F) with high humidity) to subtropical further inland. Further north the climate is drier and extremes of temperature are common sometimes rising as high as 43°C (110°F) and falling to 10°C (50°F) and even lower on occasions.

Ibadan is the capital of Oyo State (formerly the Western State). It is situated 7° north of the equator at a height of 238 m (784 feet) above sea level and is about 90 miles by road from Lagos. It is the most densely populated city south of the Sahara with about 2 million people, and covers an area of about 100 square miles; it is the principal commercial and educational centre of the Oyo State. It has a predominant Yoruba population but with substantial representation of other Nigerians from the rest of the federation as well as hundreds of Europeans employed mainly in industry and engineering construction works.

Medical facilities and standards vary from state to state and from city to city. In cities with medical schools facilities are probably better than state hospitals where only essential facilities are available, while in the small towns and villages no medical personnel or hospitals are available. Laboratory facilities capable of carrying out the tests used in this study are available in only six medical schools and three state hospitals.

Although there is now universal free primary education in the country, the illiteracy rate is about 60%, with higher rates in some localities.

Socioculturally, the society is as permissive as any other in the western world and despite the acceptance of polygamy, casual sexual relationships are not uncommon in both sexes with the attendant risk of sexual transmission of disease.

Willcox (1946) reported an incidence of gonorrhoea of 600 per 1000 among Nigerian troops in Nigeria while the World Health Organisation Expert Committee on Gonococcal Infections (1963)

reported an infection rate of 4907.6 per 100 000 among the adult population of Lagos, this being the highest rate in the world. Osoba (1972a) reported a gonococcal infection rate of 15.8% and 17.0% respectively among prostitutes and female hospital patients in Ibadan. Furthermore, some of the devastating complications of gonorrhoea such as urethral stricture and 'watering-can perineum' are still commonly encountered in Nigeria as shown by the large attendance at the bouginage clinics of the medical schools (Osoba and Alausa, 1976).

It can therefore be assumed that there is a large reservoir of infection in the community and that gonorrhoea and other STDs are rife.

Ibadan has no single centre where patients suffering from STDs can be properly investigated and treated. Moreover, doctors in the government hospitals are too busy treating more important and acute conditions to attend to the venereal diseases. As a result, while private medical practitioners treat some of these patients, most are forced to seek treatment from pharmacists, traditional healers, quacks, and even hospital orderlies.

We therefore believe it is worthwhile to report our experience regarding the pattern of these diseases as seen at the Endemic Diseases Clinic of the University College Hospital, Ibadan, over a period of 30 months, to draw attention to the fact that these diseases constitute a major cause of morbidity and misery but are currently being neglected by many health authorities in Africa.

Materials and methods

Our study population comprised 578 patients referred to the Endemic Diseases Clinic of this hospital between 1 January 1973 and 30 June 1975 with a referral diagnosis of a STD. As there is only one clinic session each week, no patient was seen without a referral letter from a physician.

Standard microbiological methods were used for diagnosis and treatment was instituted on an outpatient basis. All patients had samples of their blood taken for the Venereal Diseases Research Laboratory (VDRL) test and positive cases were confirmed by either the fluorescent treponemal antibody test (FTA-200) or the *Treponema pallidum* haemagglutination (TPHA) test. In patients with genital ulcers, in addition to the above tests, dark field examination of the exudate was carried out. The Frei's test and lymphogranuloma venereum complement-fixation test (LGVCFT) and examination of smears of ulcers, stained by Gram's method for *Haemophilus ducreyi* were performed if appropriate. Urethral, cervical, and high vaginal specimens were collected and the smears stained by Gram's

method for intracellular Gram-negative diplococci. Specimens were then plated at the bedside on Oxoid Thayer-Martin's medium using GG agar base (code CM 367) sterile GC supplement (code SR 56) and soluble haemoglobin powder (code L 53). Plates were incubated immediately at 37°C in a tin with a lighted candle. A wet preparation of the genital discharge was examined for *Trichomonas vaginalis*, *Candida albicans*, and parasites. Gonococci isolated were identified by characteristic morphology, oxidase test, and fermentation reactions. The sensitivity of the isolated strains was tested by Oxoid multidisc method against penicillin (1.5 units), tetracycline (10 µg), streptomycin (10 µg), and chloramphenicol (10 µg). A two-glass urine test was performed on all men, and if threads were observed a centrifuged deposit of urine was examined microscopically.

Results

A total of 578 patients was seen during the period of the study. Thirty-one (5.4%) of them were girls under 10 years of age; these girls represent 21.5% of all female patients seen and, except for four, all of them had gonococcal vulvovaginitis. Of the adult patients, 434 (79.3%) were men while 133 (20.7%) were women. The overall male to female ratio was 3:1 and the adult male to female ratio was 3.8:1.

Table 1 shows the age distribution of the patients. As expected, 174 (58.3%) of the patients were aged between 15 and 29 years, that is, the period of maximum sexual activity.

Table 2 gives an analysis of the diagnoses. Non-specific genital infections were the most common (25.9%), closely followed by post-pubertal gonorrhoea (19.5%). Syphilis accounted for only 2.5%, and in all cases this was latent syphilis. Venereophobia was also common (6.6%). Other diagnoses were trichomoniasis (6.9%), yeast infections (4.0%), lymphogranuloma venereum (2.5%), and condylomata acuminata (1.9%). Herpes genitalis,

Table 1 Age distribution

Age group (years)	Male	Female	Total (no.)	Total (%)
0-4	—	14	14	2.4
5-9	—	17	17	2.9
10-14	3	2	5	0.9
15-19	21	21	42	7.3
20-24	117	26	143	24.7
25-29	125	27	152	26.3
30-34	66	13	79	13.7
35-40	26	10	36	6.2
Over 40	53	4	57	9.9
Age uncertain	23	10	33	5.7
Total	434	144	578	100

Male: female ratio = 3:1.

chancroid, scabies, pediculosis pubis, and molluscum contagiosum comprised the remaining conditions. Fifty-five patients (9.5%) had more than one diagnosis, Table 3.

Table 4 gives the sources of infection. Two hundred and sixty (52.3%) of them were infected either by a prostitute or by a casual sexual partner. In 122 (24.6%) of cases the source of infection was either marital or by a steady partner, while 115 (23.1%) of the patients did not know the source of their infection. Of the adult patients, 289 (52.8%) were married.

Table 3 Patients with multiple diagnosis

Diagnosis (no.)	Patients (no.)
2	37
3	16
4	2

Table 4 Source of infection*

Source	Patients (no.)	Total (%)
Spouse	59	11.9
Casual	168	33.8
Prostitute	92	18.5
Regular partner	63	12.7
Unknown	115	23.1
Total	497	100

*Does not include the 37 patients who came for a check and were found not to be suffering from any STD and the 44 cases of venereophobia.

Table 2 Analysis of the diagnoses*

Diagnoses	1973		1974		January-June 1975			
	Male	Female	Male	Female	Male	Female	Total (no.)	Total (%)
Non-specific genital infections	64	13	69	1	26	1	174	25.9
Post-pubertal gonorrhoea	39	19	48	2	19	4	131	19.5
Pre-pubertal gonorrhoea	—	15	—	5	—	7	27	4.0
Candidiasis	—	7	2	14	1	3	27	4.0
Trichomoniasis	4	18	4	13	5	2	46	6.9
Lymphogranuloma venereum	2	1	4	4	5	1	17	2.5
Syphilis	2	1	7	—	7	—	17	2.5
Condylomata	3	1	4	3	2	—	13	1.9
Venereophobia	8	—	21	—	15	—	44	6.6
Others	46	7	52	28	30	12	175	26.1

*Does not include the 37 patients who came in for a check and were found not to be suffering from any STD.

Discussion

In his annual report of 1972, the Director-General of WHO stated that the STDs were spreading at such a rate that they threatened to become uncontrollable (World Health Organisation, 1972). This is particularly true in the developing countries where it is often difficult to engender a sense of urgency in health authorities in relation to venereal diseases when there are other more pressing problems—such as, malaria, malnutrition, tuberculosis, parasitic diseases, and other life-threatening preventable communicable diseases. It is not surprising that there are few facilities for the proper management of venereal diseases, despite the fact that limited experience has shown that these diseases are rampant.

Two hundred and ninety-five (51%) of our patients were aged between 20 and 29 years, following the same world-wide pattern observed by Idsøe *et al.* (1973). Young people are particularly vulnerable as they belong to an age group where sexual activity is at its peak. This is especially so in Nigeria because of the mass movement of the young to the cities in search of employment. There they become independent of parental control and find themselves in an environment where they may be completely unknown. This situation, combined with the sophistication bestowed by western education, results in open interaction and casual sexual relationships among young men and women.

Sociocultural attitudes to sex play a significant role in the transmission and high incidence of STDs in Nigeria. In some communities, sexual matters are treated by double standards. On one hand young men are readily permitted or even encouraged to indulge in promiscuous sexual activities often with a small group of notorious women or prostitutes. Therefore the development of a urethral discharge in these young men is accepted as a sign of adolescence or evidence of sexual potency. On the other hand, young unmarried girls are expected to remain chaste. Even after marriage, similar standards may apply. Married women may be veiled, confined to special quarters, or chaperoned on outings but there is little or no restriction on the extramarital sexual activities of men. In some communities an even more permissive attitude to sexual relations has developed, which now tends to take a liberal view of all forms of sexual relations regardless of the sex or the marital state of the partners. The situation is further complicated by polygamy, which is an accepted practice in Nigeria as in many parts of Africa. Importation of STD by the husband or any of the wives results in the infection of the entire household. Thus the speed of transmission

is increased, thereby making the western style contact tracing methods more difficult to operate and even ineffective.

Thirty-one (5.3%) of the patients were girls under the age of 10 years, and all except four were cases of gonococcal vulvovaginitis. This high incidence of gonorrhoea in girls is contrary to the popular belief that gonococcal infection in children is now a rarity (Jeffcoate, 1967). The mode of infection in these children is not clear although Willcox (1964) suggested intimate contact with infected parents or relatives, contaminated linens and towels, lavatory seats, sexual assault, and mutual masturbation. In their series of cases of gonococcal vulvovaginitis in Nigerian children, Osoba and Alausa (1974) were able to implicate intermediary objects as the source of infection in 24% of their cases. Furthermore, it has been shown experimentally that the gonococcus can survive for up to two hours on a damp cloth in tropical humidity (Montefiore: personal communication).

It is probable that since most Nigerian mothers still carry their children on their backs, the vulva of the child may be contaminated either directly from the genital secretions of the mother or through the clothing. However, a contributory factor to this high incidence of gonococcal infection in prepubertal females may be the belief among some uneducated members of the community that their urethritis can be cured by sexual intercourse with a young virgin.

As in many parts of the world (Willcox, 1975), non-specific genital infections were the most common (25.9%). The aetiology of this condition is still not clear although *Chlamydia trachomatis*, *Ureaplasma urealyticum*, and immunological factors among others have been implicated. The tetracyclines are the drug of choice in the treatment of the condition (King, 1973) and most of our patients responded to chlortetracycline.

Gonorrhoea was the second most common condition (23.5%). This was to be expected for 5% of women in Ibadan are asymptomatic carriers of the gonococcus (Osoba, 1972a). Most of the strains of *N. gonorrhoea* isolated from patients were sensitive to penicillin but a few were markedly resistant. Gonococcal drug resistance is a problem in Nigeria as people have an implicit confidence in antibiotic preparations which are freely available and there is no effective legislation against their indiscriminate sale. Self-medication is popular and it is common for a patient suffering from urethritis to take more than four anti-microbial agents before consulting a doctor (Alausa, *et al.*, 1974). The ready availability of antibiotics has contributed to the casual attitude shown towards STDs. This indifference

has in turn contributed towards sexual promiscuity. It is to be expected that a high incidence of relatively insensitive strains of the gonococcus will be encountered if this situation persists.

Only 17 cases (2.5%) of syphilis were seen during the study. All were cases of latent syphilis and diagnosis was established by positive results to serological tests for syphilis in the absence of a previous history of yaws. It appears that venereal syphilis is uncommon in southern Nigeria, but the tendency for the primary lesion to heal by itself may have reduced the necessity for hospital attendance. If this is so then many cases of late or latent syphilis may be expected in the future. Yaws was once endemic and was eradicated by the WHO yaws campaign of the early 1950s. However, Guthe and Willcox (1971) have observed that early syphilis is becoming more usual in many parts of Africa including Nigeria. Osoba (1972b) showed this was so in southern Nigeria when he reported a treponemal sero-reactivity rate of 2.8% among 15 399 hospital patients, whereas Guthe and Idsøe (1968) reported a yaws incidence of only 0.2%. In fact, syphilis may soon become a problem because a new generation of young people is maturing without the immunity against syphilis that earlier generations possessed following their previous infection with endemic treponematosi—that is, yaws in the south and bejel in the north of Nigeria. This fact has already been illustrated in New Guinea (Garner and Hornabrook, 1968).

There were 44 cases (6.6%) of venereophobia seen in this series. They were all in adult men. These are patients who are convinced that they have a sexually transmitted disease despite evidence to the contrary. They are usually quite unreasonable in their demands upon the doctor, and often insist on having repeated investigations. Of course, such tests give negative results but this is invariably insufficient to reassure the patients who are best treated by a psychiatrist. The high incidence of venereophobia in this series may be an indication of the consciousness of the high incidence of STD by the male population and the fear of reproductive failure from STD, a much dreaded incapacity in the African. It is well recognised that venereophobia may provoke psychiatric illness and be associated with a wide range of psychiatric disorders (Pedder, 1970; Kite, 1971). The high incidence recorded here demands a systematic study involving both venereologists and psychiatrists to elucidate the role of sociocultural factors in Africa.

Tropical venereal diseases—that is, lymphogranuloma venereum, chancroid, and granuloma inguinale—were rare in this series. It is probable that these conditions are not recognised by the

referring physicians or that self-medication masks the primary lesion so the patients do not present themselves. However, Lawson (1963) reported 26 cases of lymphogranuloma venereum in southern Nigerian women with 48 lesions, indicating that more than one type of lesion was seen in each patient. It was his hope that further investigation would be carried out into its epidemiology and distribution in West Africa, but this has so far not been done.

There was a high incidence of multiple infection in the patients reviewed. In the absence of adequate facilities for proper management, it is to be expected that these diseases will readily spread among the general population.

The best method for controlling venereal disease is for people to have only one sexual partner. This is borne out by our experience that only 59 (20.4%) of the 289 married patients could trace their sources of infection to their spouses and that 92 (21.2%) of the men acquired their infections from prostitutes. Furthermore, 168 (33.8%) of the patients (men and women) were infected by casual consorts while 115 (23.1%) did not know their source of infection.

Experience shows that men who have been infected by prostitutes often state that they contracted their infection from casual partners or from those whom they no longer remember. Making allowance for the 27 cases of gonococcal vulvovaginitis therefore, it would appear that up to 70.0% of the patients became infected after promiscuous sexual activity. This is a reflection of the level of promiscuity in the community. Despite the United Nations Convention for the Suppression of the Traffic in Persons and the Exploitation of the Prostitution of Others, brothels and prostitutes abound in the large cities. Furthermore, semiprostitutes—that is, single working-class girls who do not demand money for their services and who are only after a good time—contribute significantly to the high incidence of venereal diseases. They may in fact be more dangerous than prostitutes who not only take antibiotics prophylactically but often have personal physicians whom they consult periodically. The good-time girls are uninhibited in their pursuits and although abortion is illegal in Nigeria, an unwanted pregnancy can readily be terminated by quacks. Moreover, the use of contraceptive devices is becoming more popular and this may lead to an even higher frequency of intercourse with several partners (Juhlin and Lidén, 1969).

Therefore although it is desirable to control prostitution, it would appear that the role of the prostitute as a source of venereal infection here is less important than one would imagine. The good-time girls or semiprostitutes should also receive

attention. No homosexuals were seen during the period of the study.

Homosexuality is not a problem but with increasing travel and exchange of ideas this form of sexual orientation may soon appear.

What we have reported represents the tip of an iceberg and measures must be taken to control the situation. Health education needs to be provided for the young and other high-risk groups, and facilities must be provided for the adequate investigation and treatment of cases. People require accurate information that will be appropriate for their age, level of education, and culture. They should know the early signs and symptoms and the manner in which these diseases are spread, the place to where persons suspecting infection may go for examination, and what constitutes good treatment. Most important is the doctrine of 'one person—one sexual partner' although difficult to achieve this has to be emphasised even in a community where polygamy is accepted. More research needs to be carried out in developing countries to define the pattern of these diseases among the population so that proper controls can be worked out.

A change of attitude towards patients with venereal disease is needed among members of the medical profession in developing countries, many of whom still have to appreciate that these diseases are just like any other communicable diseases and that the patients need an understanding and sympathetic confidant.

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