Sexually transmitted diseases in Indonesia

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SUMMARY Epidemiological factors and changing ecological conditions have greatly facilitated the spread of sexually transmitted diseases and led to their rising incidence in Indonesia. Gonorrhoea is at present very prevalent, and drug resistance among circulating strains of gonococci is a contributing factor. Despite medical advances in both diagnosis and treatment of sexually transmitted diseases, these are becoming commoner; unlike other communicable diseases they have so far defied efforts to control them.

Introduction

Indonesia is a country of more than 3000 islands with 140 million inhabitants (72 million female and 68 million male). The age distribution indicates a population with a 2.4% growth rate during these last few years. There are 60 million (43%) people between the ages of 15 and 49 years.¹

The medical needs of the population are cared for by 7000 doctors, 120 of whom are dermatologists and venereologists (a ratio of about one specialist for each specialty to one million inhabitants) (personal communication). Although poverty is still widespread, expanding building programmes and a rising standard of living bear witness to economic advances.

Epidemiology

GONORRHOEA

Sexually transmitted diseases (STDs) in Indonesia are poorly documented, but the figures available suggest an alarmingly high prevalence of gonorrhoea. A considerable proportion of the patients are treated by general practitioners, by private dermatovenereologists, and even by nurses; alternatively, patients simply treat themselves. Almost 80% of the population receive their primary care in peripheral medical units. In most of these units, laboratory facilities are inadequate, so diagnosis has to be made on clinical grounds and its accuracy therefore depends on the

ability of the primary physician and medical auxiliaries.

Complications, such as salpingitis, epididymitis, and ophthalmia neonatorum, are also encountered.

SYPHILIS

Syphilis appears to be on the increase in Indonesia but this is less alarming than the increase in gonorrhoea. In 1974, the number of cases of syphilis reported by the provincial health authorities to the Ministry of Health was 483, of which 401 cases were of early, 57 of latent, and 25 of congenital syphilis.² In 1977, the number of cases of syphilis reported was 1909.²

The true prevalence of syphilis is likely to be much greater, as cases tend to be concealed when they are seen in a wide variety of hospital departments, such as obstetric, paediatric, and dermatological departments, as well as in private practice. One of the causative factors of the increase in syphilis is the loss of protective crossimmunity between *Treponema pallidum* and *Treponema pertenue* infections after the highly effective campaigns to eradicate yaws in the early 1960s.

OTHER STDs

Most of the other sexually transmitted diseases occur throughout Indonesia, but granuloma inguinale and lymphogranuloma venereum are rarely seen. The former was endemic before the second world war in the southern part of Irian Jaya. Since the war it has appeared in Java but is now rare. Lymphogranuloma venereum is also uncommon.

Non-specific urethritis is not yet widely recognised because of the preoccupation with gonorrhoea and poor diagnostic facilities.

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Received for publication 13 August 1979

Factors underlying rising incidence

ECONOMIC AND CULTURAL

Contact between previously isolated rural societies and the outside world is increasing as a result of economic development, and STDs are being introduced in its wake.

The most important factors of all however have been increasing urbanisation and industrialisation. Young adults of both sexes are migrating to the towns in great numbers in search of work and a more exciting life. As a result transition from a traditional society to urban life, family disruption, housing problems, and loneliness all contribute to altered codes of behaviour and to promiscuity. The changing demographic picture is a result of the high birth rate, despite the intensified family planning programme, and an increase in the most sexually active and susceptible section of the population. The discarding of traditional values, the disappearance of previous restraints—such as religion and family and public opinion—have all been conducive to permissiveness. A substantial rise in tourism and occupational travel has contributed most to the increasing number of cases.

PROSTITUTION

Prostitution still plays an important part in the spread of STDs in Indonesia. Prostitutes account for 80-90% of the sources of infection of male patients treated for STDs. The prostitutes are examined every two weeks, when cervical and rectal swabs are cultured. Serological tests for syphilis are carried out every three months, and appropriate treatment is given when the results are positive. Between 10 and 60% of prostitutes have gonorrhoea at initial culture. Circulating antitreponemal antibodies are rare among these prostitutes (Harahap *et al*, paper read at 14th Congress of Medicine, Singapore, 1979). The prevalence of oropharyngeal gonorrhoea among prostitutes is between 5 and 18.2%.³

Mobility among prostitutes is common; they move freely from one brothel to another or between the brothel and the non-registered sectors. Moreover, these prostitutes may move to neighbouring countries, such as Singapore and Malaysia, and back to Indonesia. Periodically, prostitutes are arrested by the police so that they can be examined and treated.

Homosexuality does not play an important role in the transmission of disease in Indonesia.

EDUCATION

Lack of understanding of the nature of STDs may encourage its spread. However, knowledge alone is not enough since high STD rates have been reported among university students who are well informed

about STDs. Most students obtain their information not from instruction but from their own studies of books and from radio, television, and the press.

OCCUPATION

STDs are an occupational hazard among certain occupational groups—such as taxi and truck drivers, salesmen, soldiers, and sailors—as well as among bar girls and prostitutes.

ASYMPTOMATIC CARRIERS

Asymptomatic carriers are an important source of infection. Over half the women infected with gonorrhoea have no symptoms unless complications ensue; hence without treatment they constitute a reservoir of infection. A proportion of the men may also be asymptomatic carriers, particularly in high-risk groups (Harahap *et al*, paper read at 14th Congress of Medicine, Singapore, 1979).

PENICILLINASE-PRODUCING GONOCOCCI

Penicillinase-producing *Neisseria gonorrhoeae* (PPNG) strains have been reported from the Philippines, Malaysia, Singapore, and Thailand.⁴ Although individuals and groups of people are increasingly mobile within and between countries for cultural, commercial, leisure, and occupational reasons, so far PPNG strains have not been observed in Indonesia. Tests have been performed by some laboratories.

PENICILLIN RESISTANCE

Partial resistance to penicillin has developed as a result of inadequate treatment regimens. Some failures are attributable to the administration of penicillin preparations with delayed absorption and prolonged low serum concentrations.

With the plate dilution technique, minimum inhibitory concentrations (MICs) for gonococci isolated during trials and in treatment failures have shown that the organism has become increasingly resistant to penicillin and the tetracyclines (Soendjojo *et al*, paper read at 3rd Conference of Dermatology, Bali, Indonesia, 1978).⁵ Gonococcal strains which have a MIC of penicillin greater than 0.075 µg/ml are considered to be less sensitive strains.

In a study conducted in Medan in 1977, 29 gonococcal isolates were tested for antibiotic sensitivity to penicillin; of these, 79% were less sensitive.⁵ In Surabaya, in 1978, 83% of 42 strains were found to be less sensitive (Soendjojo *et al*, paper read at 3rd Conference of Dermatology, Bali, Indonesia, 1978).

Chemotherapy

Penicillin was first introduced for the treatment of syphilis and gonorrhoea in Indonesia in 1946, just after the second world war. An intramuscular injection of procaine penicillin 4·8 megaunits with probenecid 1 g by mouth or ampicillin 3·5 g with probenecid 1 g by mouth are at present given routinely for the treatment of uncomplicated gonorrhoea. These dosages will have to be increased in the near future.

In Indonesia, the high percentage of strains which are less sensitive to tetracycline have led to a reluctance to use it in the treatment of gonorrhoea.

Single intramuscular doses of spectinomycin 2 g or kanamycin 2 g are still the drugs of choice for patients infected with less sensitive strains or with penicillinase-producing gonococci. However, the widespread use of spectinomycin and kanamycin may produce resistance among strains of *N gonorrhoeae*. Spectinomycin also has the disadvantage of being relatively expensive. The general replacement of penicillin by spectinomycin would be very costly. One of the possible consequences of the wide use of spectinomycin is an increase in the prevalence of infectious syphilis.⁴

The recommended treatment for early infectious syphilis is benzathine penicillin 2·4 megaunits given as a single dose. For patients who are sensitive to penicillin, tetracycline or erythromycin 2 g daily for 15 days is given.

Conclusions

We need to recognise the limitations of the present measures used to control STDs and to accept that, if we want control to the point of eradication, the only hope lies in immunisation.

Addendum

In June 1980 Widjaja *et al* (paper read at the Fourth Regional Conference of Dermatology, Penang, June 1980) reported four cases of gonorrhoea due to penicillinase-producing strains of *N gonorrhoeae* in Jakarta. Two methods were used to test for penicillinase production—namely, the iodometric and the acidometric tests. All isolates had MICs of $\geq 16 \mu\text{g/ml}$ for penicillin G, of 2·4 $\mu\text{g/ml}$ for tetracycline, and of 10·24 $\mu\text{g/ml}$ for spectinomycin.

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