

Syphilis and Women's Health in the Northern Territory

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Pregnancy Effects

Untreated primary or secondary syphilis during pregnancy affects virtually 100% of foetuses, with 50% resulting in premature delivery or perinatal death. Untreated early latent syphilis during pregnancy results in a 40% rate of prematurity or perinatal death. Ten per cent of infants born to mothers with untreated late syphilis show signs of congenital infection, and the perinatal death rate is increased approximately tenfold. Whereas syphilis is rarely transmissible sexually longer than one to two years after infection, women with untreated syphilis may remain infectious for their foetuses for a longer period.⁽⁶⁾

1. Spontaneous abortion – This is the most common outcome of syphilis in pregnancy, and occurs usually during the second and early third trimester. In one Third world country 19% of all miscarriages have been attributed to syphilis.⁽⁷⁾ In the Northern Territory there were at least two midtrimester spontaneous abortions at Royal Darwin Hospital in 1994 which were associated with reactive high titre maternal syphilis serology. To date there has been no formal local data published, although in the Top End a study looking at the correlation between maternal syphilis and infertility is currently underway.
2. Premature labour – This is associated with spontaneous abortion in early pregnancy and prematurity in the later stages of pregnancy. Because of other contributing factors (eg hypertension, smoking, other infections) it is difficult to define the proportion of cases due to syphilitic infection, but it has been suggested that this is a relatively important cause.⁽⁶⁾
3. Stillbirth and neonatal death – The percentage of stillbirths and neonatal deaths varies with the length of maternal syphilis, being 20% in early disease and 11% in later stages in one study.⁽⁸⁾ Another study in Zambia demonstrated a 28-fold increased risk of stillbirths in mothers with high titre RPR tests.⁽⁹⁾
4. Congenital syphilis – About two thirds of live infants born to mothers with untreated early syphilis will be

infected. This may manifest in a variety of ways, including growth retardation, skeletal, dental and CNS abnormalities. Rash and mucocutaneous lesions may also be present. In the NT there has not been a clinically apparent case of congenital syphilis for some years although several neonates every year receive treatment for presumed syphilitic infection.

Treatment of Infection

The cornerstone of treatment in syphilis infections is penicillin. In the Northern Territory the major preparation used is long-acting benzathine penicillin. Benzathine is used because only one intramuscular dose is required for the treatment of primary and secondary syphilis. The vast majority of cases in the NT are diagnosed on serology, in people with no symptoms and who therefore have latent disease. This is treated with one intramuscular dose of benzathine penicillin each week for three weeks. Tertiary and congenital syphilis treatment is complex and requires specialist management. Therapy for those with penicillin allergy also requires specialist supervision and follow-up.

Introduction

Syphilis has had a major impact on health of people since at least the fifteenth century.⁽¹⁾ With the advent of penicillin treatment rates of syphilis in first world countries including Australia has diminished markedly.

In the Northern Territory (NT) however the annual rate of syphilis for 1992 was 374.57 per 100,000. This is more than twenty times greater

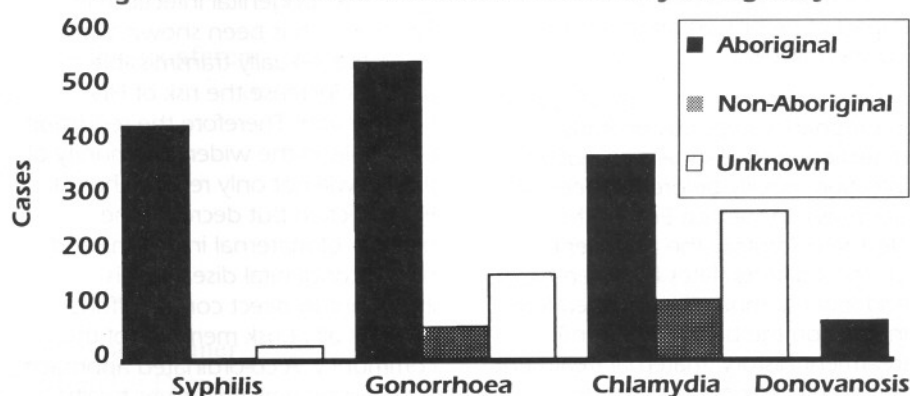
than the national 1992 figure of 16 per 100,000 population⁽²⁾, and similar to Third world figures. Despite the best efforts of NT Health staff these figures are similar for 1994 onwards. The relative risk of acquiring syphilis in the NT versus other parts of Australia is presently estimated at 25.56 with a 95% confidence interval 23.5-27.8.⁽³⁾

In our population a large proportion of people infected with syphilis are Aboriginal (see Figure 1). The reasons for this are complex. They include the painless or asymptomatic nature of infection, large reservoirs of infected people, and the lack of facilities or lack of access to facilities for diagnosis and treatment of infection in remote areas. In some communities small differences in social circumstances and sexual behaviour lead to large differences in prevalence of disease.⁽⁴⁾ This means that for one sexual encounter the likelihood of contracting infection may be much greater in areas where the baseline prevalence of syphilis is high. Hence it is not surprising that the rates of infection vary throughout the different regions in the Northern Territory (Figure 2).

Clinical

Adult syphilitic infection can be divided into four stages: primary, secondary, latent, and tertiary. Primary disease is manifest as a painless ulcer or chancre, usually located at the site of initial inoculation. Symptoms of secondary syphilis include a cutaneous rash, and wart-like lesions on the genitalia called condylomata lata. It can be a significant illness.⁽⁵⁾, although the majority of illness in both sexes is

Figure 1. Notifications of STDs in the NT 1994: By Aboriginality



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usually relatively benign. Latent disease is said to occur when the above manifestations are absent and syphilis is diagnosed on serological testing alone. Tertiary illness is rarely seen in the NT. Symptoms are diverse and many include chronic meningitis, cardiac and gait abnormalities, dementia and paralysis.

Syphilis and Women's Health

The most important impact of syphilis

Figure 2. Notifications of STDs in the NT 1994: By Sex

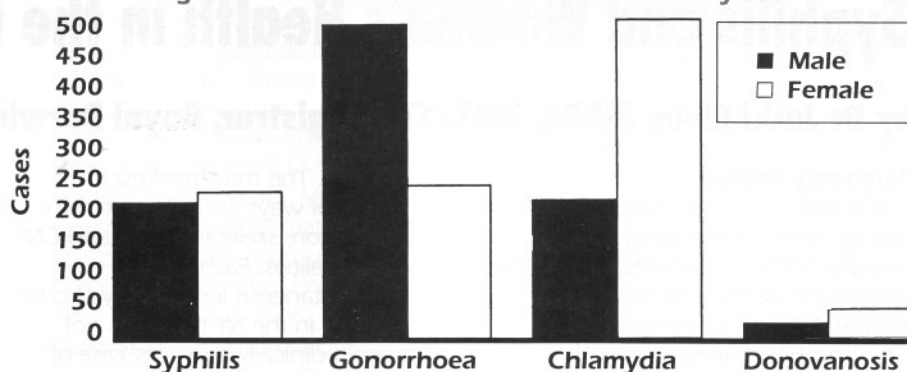


Figure 3. Sexually Transmitted Diseases in the NT 1994: Age Stratified

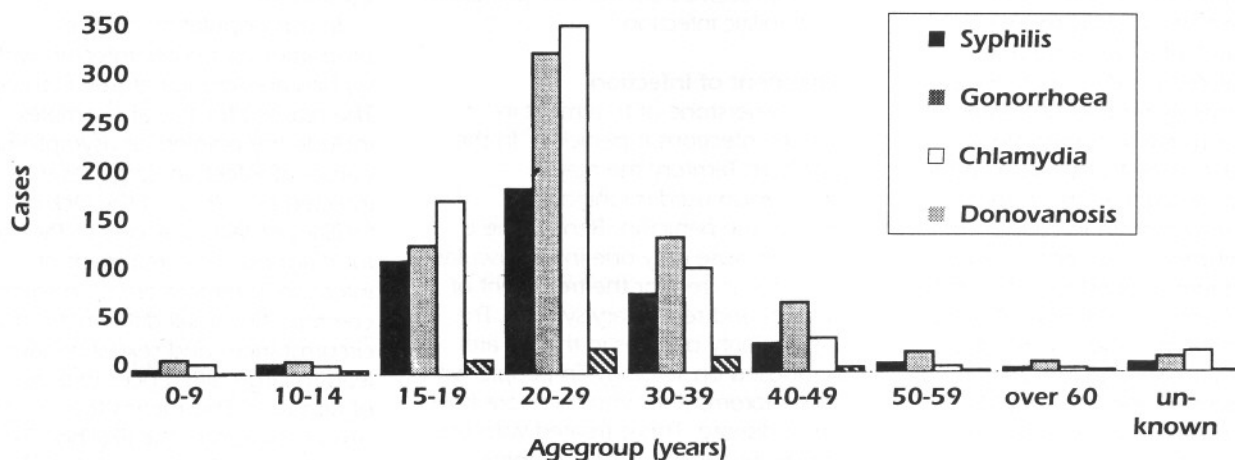
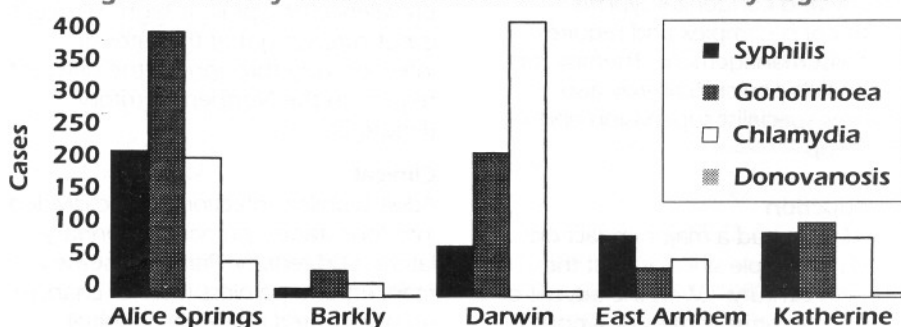


Figure 4. Sexually Transmitted Diseases in the NT 1994: By Region



on the health of women and by definition their offspring occurs in pregnancy. Figures 3 and 4 show the notifications of syphilis in the NT by age and sex. As can be seen from the graphs women of child-bearing age are most likely to be infected. The impact of syphilis on pregnancy is outlined below.

Successful management of syphilis in pregnancy depends on early detection and treatment of maternal infection, ideally before 28 weeks of gestation. In the Top End of the Northern Territory the treatment protocol differentiates between high and low risk mothers (and therefore infants) on the basis of maternal treatment history, maternal treatment during pregnancy, possible re-

infection during pregnancy or persisting high maternal titres despite treatment.

Strategies for Control of Infection

The most important complication of syphilis is congenital infection. In addition, it has been shown that ulcerative sexually transmissible diseases increase the risk of HIV transmission. Therefore the reduction of syphilis in the wider community of the NT will not only reduce the risk of HIV infection but decrease the number of maternal infections and hence congenital disease. It is important to direct control efforts towards all at risk members of the community. A co-ordinated approach is necessary which involves health

clinics, community councils and schools.

General measures

1. Contact tracing – Contact tracing and treatment is an essential component of any syphilis control programme. Both upstream (the source contact) and downstream contacts should be asked for.
2. "Core transmitters" – These are people with multiple partners who may rarely use health care resources, and are important to identify and treat to help prevent persistence of infection in the community. In addition, counselling members of this group about safer sex practices may limit the future spread of infection.
3. Screening – As syphilis is so commonly asymptomatic, active or opportunistic screening of at risk groups is very helpful in identifying active cases of infection. Specific screening programmes are very useful in high prevalence areas of the NT for this purpose.
4. Education – Although behaviour (particularly sexual) can be very difficult to modify, several simple measures help to reduce the transmission of infection. These include the use of condoms with new partners, limitation of alcohol

intake, and promotion of monogamy or celibacy as safer sex options. Culturally appropriate education, ideally delivered by peers is very important.

Specific syphilis programmes

The development of comprehensive protocols for treatment and follow-up of syphilis is very important. In addition, an understanding of the serological responses of infected individuals is essential. Co-ordination with existing antenatal screening programmes already routinely testing for syphilis improves cost efficiency.

It is important to tailor programmes to the specific requirements of our NT populations. The approach in an area of high endemicity (for instance, some rural aboriginal communities) emphasises culturally appropriate education and screening, as well as early detection of disease in both sexes to try to decrease the pool of those infected. Efforts to ensure early antenatal testing (and hence treatment) are also stressed. The approach to sections of our population with a lower endemicity centres around the testing of antenatal women and contact tracing where appropriate.

Conclusion

Syphilis is an important cause of morbidity in women of the Northern Territory, particularly in the Aboriginal population. The most important complication of syphilis in women occurs in pregnancy, with fetal wastage and congenital infection common outcomes. Although effective treatment of syphilis is available, case detection, follow-up and compliance remain problematic. The above strategies for control are in place throughout a large part of the Top End of the Northern Territory; it remains to implement them further and provide adequate support to control an eminently treatable disease.

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