

Sexually Transmitted Diseases in the Older Population in Singapore

H H Tan,*^{FAMS, MBBS, MRCP (UK)}, R K W Chan,**^{FAMS, MBBS, FRCP (Lond)}, C L Goh,***^{FAMS, MD, FRCP (Edin)}

Abstract

Background: Sexually transmitted diseases (STDs) in persons older than 50 years are rarely studied because STDs are more common in young people. **Aim:** To study the distribution and types of STDs in older persons, defined in our study as individuals aged 50 years or older. **Method:** Retrospective analysis of surveillance data for diseases notified under the Infectious Disease Act, which include syphilis, gonorrhoea, non-gonococcal urethritis (NGU), vaginal discharge and chancroid. Human immunodeficiency virus (HIV) infections were not included. Data from notifications of diseases, such as genital herpes and genital warts, which are not compulsory, were also analysed. Period of study was from January 1996 to December 2000. **Results:** During the study period, STD notifications for persons aged 50 years and older accounted for 7.6% of all notifications. Among these older persons, males were predominantly affected. The most common disease notified in older persons was gonorrhoea (600 cases), followed by non-infectious syphilis (578 cases) and NGU (339 cases). There were 76 cases of infectious syphilis. The age-specific disease rates for this group of older patients were as follows (number of cases per 100,000 patients per year): gonorrhoea–17.61, non-infectious syphilis–16.96, infectious syphilis–2.23, NGU–20.66, genital warts–6.92 and genital herpes–7.33. **Conclusion:** Although STDs occur mainly in the young, it affects a small but significant proportion of persons aged 50 years and older. A better understanding of the epidemiology of STDs in these population is important for reducing STD morbidity and improving STD care.

Ann Acad Med Singapore 2002; 31:493-6

Key words: Epidemiology, Gonorrhoea, Older, Syphilis

Introduction

Sexually transmitted diseases (STDs) in persons older than 50 years are rarely studied because STDs are more common in young people. There is very little published data focussing on this group of patients which is relevant to Singapore or this part of the world. A better understanding of the epidemiology of STDs in older persons is important for reducing STD morbidity and improving STD care. Older people are not traditionally considered at risk for STDs. However, with better standards of healthcare, men and women are now living longer and healthier lives, and can remain sexually active well into advanced ages. In addition, there are biologic age-related changes that may render the older person more susceptible to acquiring STDs.

Aim

The aim of this paper was to study the distribution and types of STDs affecting older persons in Singapore.

Materials and Methods

Under the Infectious Diseases Act, acquired immuno-

deficiency syndrome (AIDS), human immunodeficiency virus (HIV) infection, chancroid, syphilis (all types), gonorrhoea and non-gonococcal urethritis (NGU) must be notified in Singapore. The notifications are pooled from several sources: medical practitioners in institutional and private practice, and the public STD clinic in Kelantan Lane. STD notifications are collated by the Department of STD Control (DSC), which is run by the National Skin Centre for the Ministry of Health. Since 1992, STD notifications have been entered into a computerised database in the DSC.

Our findings in this article were derived from statistics collected over a 5-year period (January 1996 to December 2000). Cases of HIV/AIDS were not included for analysis as these patients were seen mainly at the Communicable Diseases Centre. For this analysis, the person's age at diagnosis was calculated from the date of birth, if known, or the reported age. In this report, 'older persons' refer to persons 50 years of age and above. The unit of analysis was an episode of infection, so a patient may be counted two or more times if he or she had more than one infection at the same time or multiple infections during the study period.

* Consultant

** Senior Consultant

*** Clinical Professor and Director
National Skin Centre

Address for Reprints: Dr Tan Hiok Hee, National Skin Centre, 1 Mandalay Road, Singapore 308205.

E-mail: hhtan@nsc.gov.sg

Some of the data concerning non-notifiable STDs, such as genital warts and herpes, were collated mainly from the public STD clinic and not necessarily representative of the general population at large. Statistics for the population in Singapore were obtained from the census of population 2000 report published by the Singapore Department of Statistics.

Results

Figure 1 show the steady decline of all STD notifications in Singapore from 1978 to 1999. There were 22,427 notifications in 1978, but this had declined to 5570 in 1996. Since then, there has been a slow rise in the number of notifications, with 5801 cases notified in 1997, 6259 in 1998, 6318 in 1999 and 6251 cases in 2000.

Table I shows the burden of STDs in 2 different age groups, comparing the number of cases and the age-specific disease rates per 100,000 persons in those aged between 20 and 34 years (the age range with the highest number of STDs) with those aged 50 years and above; as well as the total number of cases for all age groups.

In the last census of population of Singapore (in 2000),

there were 771,071 persons (378,178 males) aged between 20 to 34 years of age compared to 681,282 persons (328,060 males) aged 50 years or older.

During the study period, there were 17,374 STD notifications in the 20 to 34 years age group, which accounted for 60.3% of all notifications, compared with 2179 notifications in those aged 50 years and older, which made up 7.6% of total notifications. In each disease category, the younger age group accounted for at least half of all

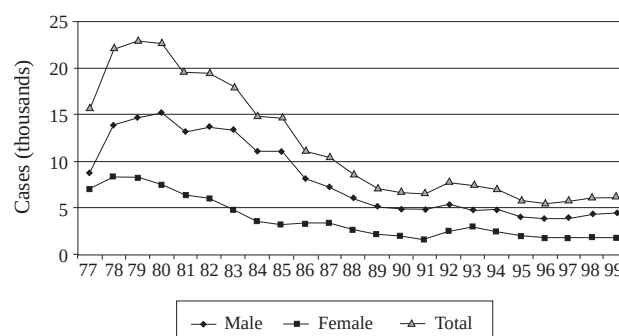


Fig. 1. STD incidence.

TABLE I: BURDEN OF SEXUALLY TRANSMITTED DISEASES REPORTED IN YOUNGER AND OLDER PATIENTS

Diagnosis	Younger (20 to 34 years) n (% of total notifications)	Age-specific disease rate among younger patients (cases per 100,000)	Older (50 years and above) n (% of total notifications)	Age-specific disease rate among older patients (cases per 100,000)	Total notifications (for all age groups)	Disease rate per 100,000 of entire population
Chancroid						
M	78 (50.9)	2.20	17 (11.1)	0.52	153	1.00
F	7 (63.6)		1 (9.1)		11	
Genital herpes						
M	995 (51.2)	35.09	227 (11.7)	7.33	1942	15.50
F	358 (60.9)		23 (9.1)		587	
Genital warts						
M	1213 (56.9)	39.03	215 (10.1)	6.92	2130	15.80
F	292 (65.1)		21 (4.7)		448	
Gonorrhoea						
M	3536 (56.5)	120.42	534 (8.5)	17.61	6259	47.87
F	1107 (71.3)		66 (4.2)		1553	
Syphilis (non-infectious)						
M	2087 (56.7)	78.22	398 (10.8)	16.96	3683	31.88
F	929 (61.1)		180 (11.8)		1519	
Syphilis (infectious)						
M	258 (49.0)	9.18	65 (12.4)	2.23	526	4.27
F	96 (55.8)		11 (6.4)		172	
NGU						
M	4005 (63.6)	211.80	339 (5.4)	20.66	6301	77.29
Vaginal discharge						
F	2413 (68.5)	122.83	82 (2.3)	4.64	3522	43.13
Total	17,374 (60.3)	NA	2179 (7.6)	NA	28,806	NA

F: female; M: male; NA: not applicable; NGU: non-gonococcal urethritis

notifications. For all age groups, males outnumbered females in every disease category.

Gonorrhoea was the most commonly notified disease. For gonorrhoea, the older male person appears to be far more likely to be affected compared to females in that age group. The age-specific rate for gonorrhoea was 120.42 cases per 100,000 persons in the younger age group compared to 17.61 in the older population. The disease rate among older males was 32.55 cases per 100,000 compared to 3.72 cases per 100,000 in women aged 50 years or older.

There were 600 cases of gonorrhoea notified in older persons, and males accounted for 534 of these cases. The ratio of males with gonorrhoea in those aged 50 years and older compared to females was thus 8:1; whereas in the younger age group, males outnumbered females by 3:1. This could be because older males are turning to commercial sources for sex, or having sex with younger partners, and thus having reduced frequency of intercourse with their spouse.

There were 578 cases of non-infectious syphilis, and 76 cases of infectious syphilis. Older male patients accounted for 65 cases of infectious syphilis, which represented 12.4% of all cases of infectious syphilis in males. These figures reinforce the need to remain vigilant in detecting cases of infectious syphilis in the older population. Age-specific rate for non-infectious syphilis was 78.22 per 100,000 in the younger age group compared to 16.96 per 100,000 in those aged 50 years or older. For cases of infectious syphilis, there were 9.18 cases per 100,000 in those aged 20 to 34 years compared to 2.23 cases per 100,000 in the older population.

Among the viral diseases, total notifications for cases of genital warts and herpes were fairly similar in each age group. There were 1353 cases (35.09 cases per 100,000) of genital herpes and 1505 cases (39.03 cases per 100,000) of genital warts in the 20 to 34 years age group, while there were 250 cases (7.33 cases per 100,000) of genital herpes and 236 cases (6.92 cases per 100,000) of genital warts in the older age group.

The disease which shows greatest representation in the younger person compared to the older age group was NGU. There were 4005 cases of NGU affecting males aged 20 to 34 years of age in the study period, giving a disease rate of 211.8 cases per 100,000 in this age group. This compares with 339 cases affecting patients aged 50 years and older, giving a disease rate of 20.66 cases per 100,000. Patients in the younger age group were 10 times more likely to be diagnosed with NGU. This reinforces what we know about NGU being predominantly a disease of younger, sexually active males.

The top 3 most common STDs notified amongst all age groups during the study period were gonorrhoea (7812

cases), NGU (6301) and non-infectious syphilis (5202). Amongst the older males studied, the 3 most common STDs were gonorrhoea (534 cases, age and sex-specific rate of 32.55 cases per 100,000), non-infectious syphilis (398 cases, 24.26 cases per 100,000) and NGU (339 cases, 20.66 cases per 100,000). In their younger counterparts, the 3 most common diseases were NGU (4005 cases, 211.8 cases per 100,000), gonorrhoea (3536 cases, 187 cases per 100,000) and genital warts (1213 cases, 64.14 cases per 100,000).

The most commonly notified condition amongst older women was non-infectious syphilis (180 cases, age and sex-specific rate of 10.19 cases per 100,000), followed by genital discharge (82 cases, 4.64 cases per 100,000), and gonorrhoea (66 cases, 3.73 cases per 100,000). In their younger counterparts, the most common condition was vaginal discharge (2413 cases, 122.83 cases per 100,000), followed by gonorrhoea (1107 cases, 56.35 cases per 100,000), and non-infectious syphilis (929 cases, 47.29 cases per 100,000). It should be emphasised, however, that the entity of 'vaginal discharge' is not an accurate indicator of sexually transmitted infection, and a more accurate way to subdivide the causes into more specific aetiologies is required. However, the data were included, as collated information were available for the study period.

Discussion

There is little medical literature concerning STDs in the older person. Cranston and Thin,¹ in a commentary, pointed out that while contemporary media project sex and sexuality in a way that encouraged discussion and debate, the articles tended to emphasise appearance, fitness and predominantly youth. The older generation may have been brought up with the idea that sex was something improper, and this is particularly relevant in more conservative Asian cultures. They are uncomfortable sharing this aspect of their lives which, as a topic, would have been rarely discussed with either peers or their healthcare professionals.

Young people have been the focus of most studies on STDs because they have the highest rate of sexual activity and thus carry the highest burden of these diseases. Younger people are also at risk for reproductive sequelae such as ectopic pregnancy and infertility. Traditionally, older people have not been considered at risk for STDs. However, there are several factors that put them at risk. With increased life span and better quality of life due to advancements in healthcare, it is not surprising that men and women continue to have sex in their older years.² Sexual behaviour in this age group has not been studied to any significant extent, and we do not have much information about their knowledge, attitudes and behaviour where STDs are concerned. In older women, the increased friability of the vaginal mucosa

can result in tears and microabrasions during sexual intercourse, facilitating disease transmission.³

In Singapore, although STDs in older persons were relatively uncommon compared with the high level of STDs in younger populations, a small but notable number of cases were reported among older persons for diseases such as gonorrhoea, NGU, syphilis, genital warts, and genital herpes. The 3 most common diseases in the older population were gonorrhoea, syphilis and genital herpes. NGU was also a common STD in the older male.

The past two decades have seen a progressive decline in the incidence of bacterial STDs in Singapore, while viral diseases have not shown the same trends.⁴ Although we are seeing much less bacterial STDs compared to two decades ago, they still remain a significant problem. Gonorrhoea and infectious syphilis affect both the younger person as well as patients over the age of 50 years; thus, any preconceived notion that older people are unlikely to harbour STDs should be laid to rest. The majority of cases of syphilis seen in the older patients are non-infectious cases. This trend may increase as more patients are doing multiphasic screening examinations, which would detect otherwise asymptomatic cases of late latent syphilis. It is also likely that with time, more viral STDs will be notified in the older age group. In this present study, the figures for genital warts and herpes do not represent the true burden of disease in the population, as these are currently non-notifiable STDs and the figures presented here were collated mostly from the public STD clinic. This represents one of the limitations of the study.

There are also other potential limitations. Firstly, as surveillance data were used, the study could have been subject to the bias associated with underdetection of asymptomatic infections and underreporting. Secondly, the diagnosis of NGU and genital herpes may be based solely on clinical impressions. Microorganisms that are not sexually transmitted may also cause NGU, or it may result from non-infectious causes. The potential for using urine as a non-invasive source for diagnosis of chlamydia infections, using ligase chain reaction or polymerase chain

reaction, will aid in the gathering of more exact data in future.⁵ Thirdly, vaginal discharge (moniliasis, trichomoniasis and chlamydial infections) affects a heterogeneous group, and as with NGU, not all microorganisms that cause it are sexually transmitted. There are also non-infective causes of vaginal discharge as well. This particular disease category may need to be further subclassified in future in order to provide more accurate statistics.

Among the older patients diagnosed with STDs, there is a higher male predominance than that seen amongst the younger males. This was also observed in an American study of STDs in older persons in Washington State.⁶ This could be because older men are having sex with commercial sex workers and younger women. Among the older generation, the male is still likely to be the sole breadwinner, whilst the younger generation are likely to see both sexes working and being financially independent.

In conclusion, it is apparent that STDs affect individuals aged 50 years or older. While it remains a priority that prevention efforts are focussed on younger people, STD counselling regarding safer sex and risk reduction should be considered for persons of all ages. More information should be gathered about the knowledge, practices and risk behaviour of this group of patients in the future.

REFERENCES

1. Cranston R D, Thin R N. Sexually transmitted infection in the elderly. *Sex Transm Infect* 1998; 74:314-5.
2. Byers J P. Sexuality and the elderly. *Geriatr Nurs* 1983; 4:293-7.
3. Scura K W, Whipple B. Older adults as an HIV-positive risk group. *J Gerontol Nurs* 1990; 16:6-10.
4. Ang P, Chan R K W. Sexually transmitted diseases in Singapore—trends in the last two decades. *Ann Acad Med Singapore* 1997; 26:827-33.
5. Tan H H, Chan R K W, Teo A S M, Boey L P. Use of ligase chain reaction and polymerase chain reaction on urine specimens to detect *Chlamydia trachomatis* infections in a sexually transmitted diseases clinic in Singapore. *Ann Acad Med Singapore* 1999; 28:245-51.
6. Xu F, Schillinger J A, Aubin M R, St Louis M E, Markowitz L E. Sexually transmitted diseases of older persons in Washington State. *Sex Transm Infect* 2001; 28:287-91.