Sexually transmitted infections in older patients

Clinicians should recognise that older patients are often sexually active and, therefore, at risk of sexually transmitted infections. Syphilis and HIV are two such infections with particular relevance in an older population, since the morbitity of other infections mainly affects fertility, which is of little worry in older patients. Since 1998, diagnoses of syphilis have been increasing in the UK, and late effects of earlier epidemics may be seen as untreated, latent, or symptomatic syphilis. In the case of HIV, effective antiviral treatment has increased the lifespan of patients and an increasing number of new diagnoses are made in older patients.

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Sexuality remains an important aspect of the physical, psychological, and social wellbeing of many older people. As such, it is crucial that clinicians explore the possibility, and recognise the presence, of sexually transmitted infections in the older population. Unfortunately, there is a common myth of sex and sexuality being primarily the domain of young people. This myth is perpetuated in NHS agendas, namely the National Service Frameworks for Older People[1] and National Sexual Health Strategy,[2] which make limited reference to sexual-health issues in older people.

Discussion of sexual issues within this group is often out of the comfort zone of patients, public, and many health professionals alike. A reluctance to discuss this area leads to health-care professionals missing an important target population. This article will explore the prevalence and risks of sexually transmitted infections in older people, with a particular focus on the clinical presentation of syphilis and HIV, two important diseases in this cohort.

Sexual behaviour in older people

Studies often arbitrarily use 50 years of age and above as the general definition of an older person. Research about sex and epidemiology of sexually transmitted infections in this older population is limited.[3,4] One vulnerable group, older men who have sex with men, has been particularly difficult to study. They may have become sexually active surrounded by great societal stigma, and at a time when homosexuality was illegal.[3–5]

Studies show that older adults are sexually active. Much of what is known is based on studies from the USA, with relatively few from the UK.[3,4] The first, large, comprehensive, well-conducted study of sexual behaviour in the UK was the National Survey of Sexual Attitudes and Lifestyles (NATSAL-I) which was done in 1990–91.[6] This survey encompassed those aged 16–59 years. However, the subsequent NATSAL-II study[7] of 2000 did not explore the dynamics of those aged 45 or older, but instead concentrated on a younger age group. Of participants in NATSAL-I aged 45–59, 5·4% and 1·8% of men and women, respectively, were documented as having more than one sexual partner in the past year. These figures increased to 13·7% and 6·8%, respectively, when the time frame was extended to the past 5 years. It is also noteworthy that this activity was associated with low levels of condom use.

A group in Ireland did a retrospective analysis of case notes of all patients over the age of 65 years who attended a genitourinary clinic.[8] 81 patients were identified over a 6-year period, between 1991 and 1997. Of the 61 patients whose sexual history was available, 32 reported sexual intercourse within the previous 6 months.

The older population lead active sexual lives in which unsafe sexual activity may occur. The National AIDS Behavioural Study was a large, general population survey of HIV-related sexual behaviour in the USA.[9] In excess of 10,000 adults, aged 18–75 years, were interviewed during a 6-month period in 1990–91. The results showed that approximately 10% of the sample aged older than 50 years reported at least one risk factor for HIV infection. As thoroughly

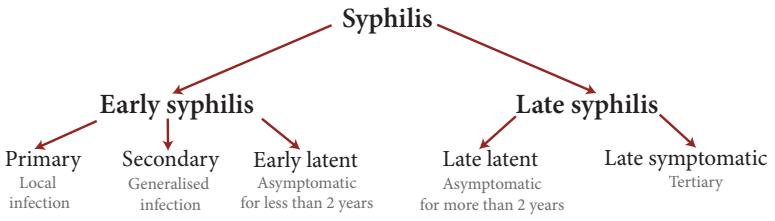

Figure: Classification of syphilis

reviewed by Gott[3] in 2005, this theme equally applies to the UK.

Studies confirm the incidence of sexually transmitted infections in patients older than 65 years, for both newly acquired disease and for residual complications.[3,4,10] Older people are at risk of the full spectrum of infections as are the general population. Acknowledging this risk is important, albeit noting that it is significantly lower than for younger counterparts.

Data from KC60 forms collected in genitourinary medicine clinics are the main source of surveillance information on sexually transmitted infections in the UK. The data include age-specific diagnosis bands including the broad 45–64 years, and over-65 groups. In 2007, among those older than 45, there were 2614 cases of chlamydia, 2380 new diagnosis of primary herpes, and 528 new diagnoses of primary and secondary syphilis representing 2%, 9%, and 20% of total diagnosis in all age groups, respectively.

In 2007 there were 32 diagnoses of primary and secondary syphilis in men over the age of 65, representing 1·4% of total cases in men in the UK. Although total numbers of acute sexually transmitted infections in those older than 65 years are low, the number of diagnoses in the past 10 years has undergone a marked increase. For instance in men over 65 years, comparing 2007 with 1996, the percentage increase in diagnoses are as follow: primary genital herpes, 78%; chlamydia, 100%; gonorrhoea, 300%; primary and secondary syphilis, 1500%.[11]

Many older people experience the death of their life partner. Anecdotal evidence suggests that some become involved with new partners, including sex workers.[4] Normal changes associated with ageing, such as thinning vaginal walls and decreased vaginal lubrication, can increase exposure risk during unprotected sexual intercourse. Some older adults may have the desire to engage in sexual activity, but they face barriers, such as psychosocial factors or medical conditions leading to erectile dysfunction or dyspareunia. The advent of oral medications for erectile dysfunction, such as sildenafil citrate is helping some individuals to overcome that particular barrier.[4,5] With the increased availability of treatment, older people are able to continue or to restart sexual relationships that may not have been possible previously.

Some people appear to be oblivious to the risk of sexually transmitted infections. Condoms may be actively avoided by some for fear of impotence and poor sensation. Additionally, unwanted pregnancy is no longer an issue.[4,5,10] Compounding these factors is, seemingly, a failure of clinicians to actively address this subject with patients. A study[12] conducted in Sheffield, UK, on the basis of responses of 319 randomly selected people aged older than 50 years, described respondents feeling that they had not received much information about sexually transmitted infections Approximately 25% reported that they would like more information.

This lack of discussion has been confirmed by The Global Study of Sexual Attitudes and Behaviours. In this study, data were drawn from a survey of 27,500 men and women aged 40–80 years in 29 countries.[13] Approximately 50% of male respondents felt that sex was important in their relationship and indicated that they would prefer doctors to routinely enquire about their sexual function.

The burden of morbidity of most sexually transmitted infections, such as infertility, disproportionately affects the younger age group of 16–34 years. However, an awareness of sexuality in older patients is extremely important. Arthritis, gynaecological, neurological, and prostrate problems are extremely common in older people, but, as commented by Grigg,[5] they are rarely recognised by health-care professionals as being potentially associated with untreated sexually transmitted infections. Two particularly relevant infections in older people are syphilis and HIV.

Syphilis

Syphilis is an important diffential diagnosis for physicians caring for elderly people. The rate of syphilis diagnoses peaked in industrialised countries in the late 1940s and early 1950s, but was dramatically reduced after the widespread introduction of effective antibiotic therapy. After two decades of consistent decline in the UK, diagnoses of infectious syphilis started to increase in 1998. This was largely driven by a series of focal outbreaks in specific groups across England.[14]

Doctors may encounter not only acute infection, but also the consequences of earlier epidemics that may manifest now in the form of untreated, latent, or symptomatic,

syphilis in older people. Syphilis is caused by infection with Treponema pallidum. In addition to the sexual route, transplacental transmission is also possible from the ninth week of gestation. The typical classification[15] is outlined in the figure.

Syphilis is transmitted sexually during primary and secondary syphilis, but transmission can also occur during early latent syphilis. If untreated, syphilis is a lifelong infection that progresses from a primary ulcerative lesion, after an incubation period of 9–90 days, to a systemic secondary vasculitic eruption involving skin, mucous membranes and other organs after 6 weeks to 6 months. This activity is followed by long periods of latency and late lesions of particularly the central nervous system, but also the cardiovascular system, skin, bone, and viscera.[16]

Box: Typical presentation of syphilis in an older patient

History

- Stepped decline in cognitive function, associated with dizziness and falls
- Presumptive diagnosis of dementia
- No previous syphilis serological tests done

Test results

- Reactive enzyme immunoassay
- Non-reactive rapid plasma reagin test
- Reactive Treponemapallidum particle agglutination test

Potential diagnoses

- (Late) latent syphilis
- Treated (prior) syphilis
- Late, symptomatic syphilis (neurosyphilis)

Primary and secondary syphilis are rare in the older population, as documented earlier, but should definitely be considered as potential diagnoses. Late syphilis—both latent and symptomatic—is an important diagnosis to consider. A high index of suspicion is needed. Cohort studies of untreated patients suggest that symptomatic late syphilis develops in up to 40% of individuals with late syphiltic infection.[16] Late symptomatic syphilis, otherwise termed tertiary syphilis, can present in a number of ways, which may co-exist, but three major manifestations are seen.[15–17]

Major manifestations of syphilis

Gummata

Locally destructive inflammatory fibrous nodules that mostly affect skin and bone. They are rare but can occur 3–12 years after primary syphilis.

Cardiovascular syphilis

Usually consists of an aortitis, involving the aortic root, occurring some 15–30 years after primary syphilis. This is also very rare.

Neurosyphilis

Encompasses a number of presentations. It should be part of the differential diagnoses for almost all neurological syndromes. The central nervous system becomes involved in as many as 40% of infected patients as a result of seeding during bacteraemia. However, few people will go on to develop symptomatic neurosyphilis. Meningovascular syphilis is rare but can present a few years after initial infection in secondary syphilis, or as a manifestation of late syphilis.

Late, tertiary lesions are caused by focal ischaemia of the central nervous system resulting from endarteritis of small blood vessels of the brain. Destruction of the nerve cells in the cerebral cortex leads to a combination of psychiatric manifestations and neurological findings. The most common manifestations of symptomatic neurosyphilis are related to loss of the spinal dorsal column (tabes dorsalis) and dementia (general paresis of the insane).

Clinical diagnosis

Diagnosis requires clinical assessment, serological testing with or without special tests (chest X-ray/cerebrospinal fluid). Examination should seek signs of congenital, early, and secondary syphilis. It should also include examining for the signs of tertiary syphilis including aortic regurgitation, Argyll-Robertson pupils (irregular pupils that constrict when accommodating, but not in response to, light) and dorsal spinal column impairment (ie, impaired proprioception, vibratory sense or absence of ankle jerk response). Disfigurements associated with other treponemal infections such as yaws, should also be sought.

Serological testing has the primary role of confirming a diagnosis of syphilis. Two types of serological tests exist. First, treponemal tests detecting specific treponemal antibody—including Treponema pallidum particle agglutination, and enzyme immunoassay. Second, non-treponemal tests such as a venereal diseases research laboratory test or a rapid plasma reagin test. Enzyme immunoassay is the current screening test of choice. Most of these tests detect both IgG and IgM. They usually become positive within 3 or 4 weeks of infection and typically remain so for life, despite adequate treatment. Diagnosis is based on enzyme immunoassay generally confirmed by a positive particle agglutination, with or without positive non-treponemal tests. Serology

cannot distinguish between the different treponematoses (syphilis, yaws, pinta, and bejel).[15–17]

Interpretation of serological tests can be perceived as complicated but does not have to be the case. In patients with untreated syphilis for many years and whom are presenting with late complications, the non-treponemal tests may be negative, with only a positive treponemal serological test as indication of infection. However, non-treponemal tests can give a titre, which in early infection decreases with treatment and increases with reinfection. It is necessary to review syphilis serology in the context of: clinical history and examination; serial reagin titres, tested in parallel if possible; treponemal test results; and a past record of treatment. A typical scenario is outlined in the box.

Ideally, examination of cerebrospinal fluid should be undertaken to evaluate patients with seropositive syphilis neurological signs or symptoms.[15–17] If the cerebrospinal research laboratory test is positive, then the patient is regarded as having neurosyphilis.[18] However, in patients with negative cerebrospinal fluid tests, the clinician should consider a diagnosis of neurosyphilis if there are any other relevant markers including non-specific findings of white-blood-cell count greater than 5 per mm^3 (10×10^6 per litre). Cerebrospinal fluid analyses must be interpreted with caution, with regard to individual cases.

Treatment

The first-line treatment for late latent, cardiovascular and gummatous syphilis is either a single, intramuscular dose of benzathine penicillin 2·4 megaunits, on days 0, 7, and 14, or intramuscular procaine penicillin 600,000 units once daily for 17 days. First-line treatment for neurosyphilis is intramuscular procaine penicillin 2·4 megaunits once daily plus oral probenecid 500 mg four times a day for 17 days. Intravenous crystalline benzylpenicillin at a dose of 18–24 megaunits daily, given as 3–4 megaunits intravenously every 4 hours for 17 days is also effective therapy. If intramuscular administration is not possible or is inappropriate, or if a patient declines this treatment, 28 days of doxycycline 100 mg twice daily for cardiovascular/gummatous syphilis or 28 days of doxycycline 200 mg twice daily for neurosyphilis may be offered.[15–17]

Further information and guidance may be sought from the British Association for Sexual Health and HIV,[17] which recommends that patients with positive syphilis serology and no clear history of documented treatment and with no evidence to exclude reinfection should be assumed to have active syphilis. This strategy aims to ensure that patients with active syphilis are not left untreated.[17] Neurosyphilis tends to improve, or at least stabilise, with therapy. Gummata also tend to heal. The cardiac manifestations are generally irreversible.[17,18]

The impact of this diagnosis must not be dismissed and the need for psychological support for the patient and carers must be reviewed. Partner notification is also relevant. Long-term partners should be tested. Health advisers in local genitourinary clinics are invaluable in this process, facilitating disclosure, testing, and providing necessary support. All such patients should be offered screening for other sexually transmitted infections, including HIV.

HIV

In 1996 two new classes of anti-HIV therapy were launched: non-nucleoside reverse transcriptase inhibitors and protease inhibitors. HIV viral load testing became available, and trial data showed compelling evidence that combination therapy was highly effective at preventing disease progression. HIV in the UK changed from a progressive untreatable condition to a long-term controllable condition with huge reductions in morbidity and mortality. In the past 10 years, HIV mortality in the UK has fallen by 80%. Indivuduals with HIV infection who are either symptomatic or immunocompromised should start therapy with two nucleoside reverse transcriptase inhibitors with one of either a non-nucleosidease reverse transcriptase inhibitor or a protease inhibitor. The indications for treatment and recommended regimens are regularly reviewed and updated by the British HIV Association, and are available on its website.[19]

The number of older people with HIV is rising. The use of highly active antiretroviral therapy (HAART) has had a dramatic effect on HIV-related morbidity and mortality.[20] Thus, the extended survival with HAART is leading to increased numbers of older individuals with HIV. Furthermore, the Health Protection Agency reports a rise in HIV diagnoses in older age groups.[11] In 2005, 7% of all individuals diagnosed with de novo HIV infection in the UK (3384 of 47,517) were over the age of 54 years. Consistent with the overall trend of the epidemic, an increasing number of older women and ethnic-minority adults are becoming infected with HIV.

The need for early diagnosis in older people is highlighted by

data from the Concerted Action on SeroConversion to AIDS and Death in Europe (CASCADE) collaboration trial.[21] Data from 20 cohorts of individuals with known dates of seroconversion to HIV, from clinics in Europe and Australia, were combined. A significant association of age with a more rapid progression to AIDS in the absence of therapy was seen. Older people experienced an increased AIDS rate, at a rate ratio of 1·23 for an increase in age of 10 years (95% confidence interval of 1·07–1·42, p=0·003). Consistently, the median time of survival after HIV infection was found to be 4·4 years in those aged 65 and older as compared with 9·2 years in 35–44 year-olds. Late diagnosis results in an increased prevalence of opportunistic infections. Some studies have suggested that older patients are also less likely to achieve virological suppression than younger patients.[20,22] These data provide further impetus to encourage awareness and HIV testing in older persons. Potential benefit from HAART requires diagnosis. Barriers to testing should be recognised, but clinicians should consider and recommend HIV testing whenever it is clinically indicated, rather than treating it as entirely different from other tests for serious conditions.

The clinical presentations of HIV and AIDS-defining illnesses in older patients are fairly similar to those of younger patients. Nevertheless, diagnosis proves challenging in older patients because clinical signs and symptoms, as with syphilis, mimic common ailments associated with older age. Pneumocystis jiroveci pneumonia—the most common AIDS-defining opportunistic infection—has been misreported as congestive cardiac failure and chronic obstructive pulmonary disease.[5,19]

For many patients neurological symptoms may be the first sign of HIV infection. Dementia is commonly attributed to Alzheimer's disease, cerebrovascular disease, and Parkinson's disease. The diagnosis of HIV encephalopathy, a well recognised neurological manifestation of HIV, is not usually entertained. As a result, it is easily missed. Some important features differentiate these diseases; HIV dementia can occur rather rapidly, whilst Alzheimer's dementia is more of a gradual decline.[23] Diffuse cortical atrophy is the most common finding in HIV on CT and MRI. It generally affects the subcortical and cortical regions, whilst Alzheimer's predominantly affects the cortical regions. There is a strong possibility of HAART significantly improving or at least halting symptoms. Accurate diagnosis is imperative.[23]

The delay between symptom recognition and presentation to health-care services is age specific, with longer latency periods experienced by people over the age of 50 years. Clinicians must have a high index of suspicion and lower their threshold for testing. Guidelines for HIV testing of patients attending general medical services may be found at the Royal College of Physician's website.[24]

Adults with HIV infection are now surviving long enough to experience HIV as a chronic disease. They also tend to have other medical comorbidities, such as ischaemic heart disease, diabetes, and cancer, which may complicate their management. Care of older patients with HIV will also increasingly necessitate an awareness of the long-term complications of HAART.

Many investigators have noted an increased risk of cardiovascular and cerebrovascular events in HIV-infected patients. This potential is particularly relevant in older people who already have a higher risk of ischaemic heart disease and cerebrovascular accidents. How much of this increased risk will be attributable to age compared with that of exposure to HIV or HAART, or both, is unclear.[20,25] There are a number of causes of atherosclerosis and thrombosis, which in patients with HIV might be accelerated by HAART. Atherosclerosis might be promoted by metabolic side-effects associated with protease inhibitor therapy including increased insulin resistance, diabetes mellitus, hypercholesterolaemia, hypertriglyceridaemia, hypertension, and lipodystrophy syndrome.[25]

Polypharmacy of older people leads to greater potential for harmful interactions. There are major and newly emerging interactions between anti-HIV drugs and standard prescription or over-the-counter medications. A comprehensive website, developed by the pharmacology department at Liverpool University, is a useful reference tool for determining possible HIV drug interactions.[26] All HIV-positive patients should be referred to a genitourinary specialist or an HIV specialist for further advice and management.

Conclusion

The realm of sexuality and related behaviour is complex. It is an issue that remains important to many older people. The risk of acquisition of sexually transmitted infections in older groups of patients must not be dismissed. HIV and syphilis are noteworthy differential diagnoses to which clinicians must remain alert. Doctors should have a low threshold for HIV and syphilis testing.

Clinicians should aim to ascertain the sexual concerns of patients, being aware of both the negative and positive factors

that can influence sexuality with age. These factors should be explored even if they are not the presenting symptom. Education and counselling to increase patient's comfort in addressing sexual health is important and should not be overlooked in health promotion activities. These efforts will serve to enhance the quality of care of this important group of patients.

We have no conflict of interest.

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