

Sexual health issues in adolescents and young adults

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ABSTRACT

Adolescence is a time of sexual risk-taking and experimentation but also vulnerability. Young people may present to general physicians with systemic symptoms of sexually transmitted infections (STIs), such as arthritis, hepatitis or rash, but may not necessarily volunteer information about sexual activity. It is important for physicians to ask directly about sexual risks and if appropriate test for STIs and pregnancy. Knowing how to take a sexual history and consent a patient for an HIV test are core medical skills that all physicians should be trained to competently perform. Safeguarding young people is the responsibility of all healthcare professionals who come into contact with them, and young victims of abuse may present with physical symptoms such as abdominal pain or deliberate self-harm. We must all be aware of indicators of both child sexual exploitation and HIV infection and not be afraid to ask potentially awkward questions. If we don't we may miss vital opportunities to prevent or minimise harm to young people.

KEYWORDS: sexual health, adolescents, child sexual exploitation, HIV vertical infection, sexually transmitted infections, systemic symptoms

Introduction

Young people usually attend adult rather than paediatric secondary care services after the age of 16, so it is essential that all physicians, with a few exceptions such as geriatricians who do not participate in acute medical takes, appreciate the main issues around adolescent health. Adolescence is a time of risk-taking behaviour, particularly sexual risk taking, which can have far reaching consequences, such as unintended pregnancy or sexually transmitted infections (STIs). Those aged 15–24 years continue to be the main group affected by STIs.¹ Overall numbers of diagnoses have risen considerably over the past 10 years despite no change in the median number of lifetime sex partners,² with approximately 8% of young people aged 15–24 years testing positive for chlamydia through the National Chlamydia Screening Programme. General physicians seeing young people therefore need to consider whether they are

sexually active or not before prescribing medication, and also whether symptoms may be related to STIs, pregnancy, sexual abuse or exploitation. Consideration should be given as to whether any child under 18, or older young people with a vulnerability such as learning difficulties, presenting to healthcare could be being sexually exploited and physicians should be aware of indicators of this.³

The diagnosis of HIV should be considered in any adolescent presenting with indicator illnesses of either long-term infection or seroconversion and those who fall into at risk groups. It should be within the competence of any doctor to obtain consent for and conduct an HIV test.

What makes an adolescent different to those aged over 25?

Adolescence is identified by the World Health Organisation as the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19 years. Adolescents differ from adults in the way they behave, solve problems, and make decisions. Studies have shown that brains continue to mature and develop throughout childhood and adolescence, and well into early adulthood hence adolescence can also be considered to extend to the mid-twenties.⁴

The limbic system that is responsible for instinctual reactions, including risk taking, fear and aggressive behaviour, develops early. However, the prefrontal cortex, the area of the brain that controls reasoning and helps us think before we act, develops later. This part of the brain is still changing and maturing well into adulthood.

As a result of these neurophysiological differences, adolescents are less capable of understanding the relationship between behaviour and consequences and often see themselves as 'bulletproof'. They may face pressures to experiment with alcohol, cigarettes or other drugs and also to have sex at an earlier age. Although many teenage sexual relationships can be healthy and fulfilling, some young people will not yet appreciate the concept of fully informed consent being a vital part of sexual relationships; hence they can be vulnerable to sexual exploitation, unplanned pregnancies and STIs. Behaviour patterns learnt during this period, such as using condoms, can have far-reaching effects in the long term of both positive and negative form. This gives health professionals seeing adolescents a unique opportunity to influence their future health and wellbeing.

What proportion of adolescents are sexually active?

Some of the best information we have on sexual behaviour in the UK comes from the NATSAL-3 study.⁵ Over 15,000 adults

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aged 16–74 years participated in interviews between September 2010 and August 2012, producing data on sexual behaviour, attitudes, health and wellbeing. 29% of 16–24 year olds said they had sex with someone of the opposite sex before the age of 16.

Over the past 60 years, age at first heterosexual intercourse has declined to an average of 16 years among 16–24 year olds. Among this age group, the latest survey found that 31% of men and 29% of women now have first sex before the age of 16 and the majority of 18 years old will be sexually active. Therefore, it is important to consider in any adolescent whether their presentation could be related to a STI or pregnancy. Additionally, adolescents presenting with self-harm, drug or alcohol abuse, or unexplained symptoms could also be at risk of sexual exploitation.⁶

Sexual history

Taking a sexual history requires additional skills to taking a normal medical history and it is vital to get over any embarrassment felt by the clinician so that the patient will feel at ease. Privacy is an important consideration that may be difficult in the emergency department or on a busy medical ward but every young person should be seen without their parent/friend/partner at some point to enable disclosure of sexual behaviour and possible abuse. It can be helpful to take a general history with the parent or partner present, ask them if they have anything to add or any questions and then politely but firmly ask them to leave so that you can talk privately with the young person.

It can be difficult to raise the subject of sex and STIs with a patient who may not be expecting to be asked such questions, so it is worth thinking about how to request permission to ask more personal questions and explain why you think it is relevant. For example, in a 20-year-old woman with recent onset right upper quadrant pain the following questions may be relevant: ‘Sometimes these symptoms are related to pregnancy or an STI, can I ask some questions about whether you might be at risk of these?’; ‘Are you in a relationship?’; and ‘When did you last have sex and who was it with, were they male or female?’. If you have established that the young person is sexually active, even if they state they are using condoms, the decision to test for STIs and pregnancy should be based on their clinical presentation rather than perceived risk. It is important not to make any assumptions about the gender of their partner or whether or not they may have concurrent relationships.

Some ‘legal highs’ are associated with increased sexual risk taking and STI acquisition, including hepatitis C. Therefore, asking about them, as well as recreational drugs and alcohol use, should be routine.

Child sexual exploitation

Child sexual exploitation (CSE) has been defined by the National Working Group for Sexually Exploited Children and Young People. It is the involvement of those aged less than 18 in exploitative situations, contexts and relationships where the young people (or a third person or persons) receive something (eg food, alcohol, cigarettes, affection gifts) as a result of them and/or others engaging in sexual activities. It is an abuse of power by those exploiting by virtue of their age,

gender, intellect, physical strength and/or economic or other resources.

CSE has been brought to public attention in recent years with a series of high-profile cases and it is important to consider whether any child presenting to healthcare could be at risk of CSE. The British Association for Sexual Health and HIV, together with Brook, has developed a national proforma for health professionals working in sexual health and primary care³ for the detection of CSE, but is a useful tool for all healthcare professionals seeing any young person under the age of 18, and for those older adolescents who have vulnerabilities. Questions asked such as ‘Have you ever been made to feel scared or uncomfortable by the person/s you have been having sexual contact with?’; ‘Has anyone ever given you something like gifts, money, drugs, alcohol or protection for sex?’; and ‘How old is the person you are having sex with?’ may seem intrusive but, if asked in a conversational way once a rapport has been established and confidentiality explained, can provide useful clues. It would be important to assess any adolescent presenting to the acute medical ward with drug or substance abuse or self-harm, eg an overdose, for risk of CSE. Sexual health staff can advise about the use of the proforma. Guidance is available on the RCP website.⁷

STIs presenting with systemic symptoms

Although most STIs will be asymptomatic, when they do have symptoms young people can present to many different medical specialties. Involvement of sexual health teams in young people with confirmed STIs is key so that partner notification can take place. This is particularly important with HIV infection, which although uncommon in 15–24 year olds,⁸ is associated with significant morbidity and mortality, and the risk of onward transmission to any sexual partners. Symptoms associated with STIs are shown in Box 1.

HIV: clinical features and testing

Early diagnosis and treatment of HIV are essential as they can assist in prevention of onward transmission and modify the course of immune damage. Seroconversion illness or primary HIV infection occurs typically 4–6 weeks after unprotected sex (Box 2).

Being non-specific, these symptoms may be misdiagnosed as glandular fever in young people. A transient aseptic meningoencephalitis may also occur, though most primary

Box 1. Systemic manifestations of sexually transmitted infections.

- > Hepatitis – secondary syphilis, Fitz–Hugh–Curtis syndrome, viral hepatitis (A,B,C)
- > Arthritis – SARA, DGI
- > Skin lesions – syphilis, HIV seroconversion, SARA, DGI
- > Proctitis – LGV, chlamydia, gonorrhoea, herpes simplex virus types 1 and 2

DGI = disseminated gonococcal infection; LGV = lymphogranuloma venereum; SARA = sexually-acquired reactive arthritis.

Box 2. Symptoms of primary HIV infection.

- > Fever
- > Malaise
- > Rash – maculopapular affecting upper part of body
- > Myalgia
- > Pharyngitis
- > Lymphadenopathy

HIV infections are subclinical. It is important to diagnose, as due to very high levels of viraemia, those undergoing seroconversion are highly infectious to others. HIV should be considered in any young person who is sexually active with symptoms of glandular fever or meningitis.

The *UK National Guidelines for HIV Testing*⁹ were published in 2008 to try and increase universal testing of HIV and highlight indicator illnesses which should prompt clinicians to test for HIV even if the patient is not in an identifiable ‘at risk’ group. These include conditions such as recurrent bacterial pneumonia, chronic diarrhoea and/or weight loss and haematological abnormalities such as thrombocytopenia and neutropenia (Table 1).¹⁰ The RCP Concise Guidance¹⁰ covers who should be offered a test, pre- and post-test discussion, giving a positive result and clinical indicator diseases. Essentially, verbal consent is required and all physicians can and should be competent to do so. In many areas, such as antenatal settings and sexual health, an opt-out system with verbal consent occurs.

All children of HIV-infected women, or those whose parents were born in an area of high endemicity should be offered an HIV test when presenting to healthcare, regardless of age or symptoms. A national surveillance study¹¹ showed that of 42 adolescents who were diagnosed with HIV infection over the age of 13, the oldest was 20 and 95% were black African. Half were screened following diagnosis of a relative and were asymptomatic, but half presented with symptoms mainly HIV-related but also 17% had AIDS-defining illnesses.

Syphilis

Syphilis remains an important infection worldwide and should be considered in the diagnosis of many clinical syndromes.¹² Since 1999 there has been a sustained epidemic in the UK particularly among men who have sex with men (MSM), but also among heterosexuals. It is less common in adolescents, with the highest rates of diagnosis in 25–34 year old. However there is a significant number of infections in MSM aged 19–24 years old.¹³ The natural history of syphilis comprises three stages. Primary syphilis typically presents with a painless genital ulcer between 2–3 weeks after sexual exposure and the secondary stage follows often 4–8 weeks later. It is at this stage that systemic symptoms due to bacteraemia develop, classically a non-itchy macular widespread rash on the trunk and arms, and papular lesions on palms and soles. There may also be mucous membrane lesions, lymphadenopathy and generalised malaise and fever in a minority. In rare cases, hepatitis, glomerulonephritis, choroidoretinitis, meningitis, cranial nerve palsies or alopecia occur, prompting presentation to secondary

care. Untreated, the signs and symptoms will regress naturally, but may recur. Patients may go on to develop tertiary syphilis with cardiovascular, neurological and gummatous involvement 20 years later. Congenital syphilis is increasing.

Diagnosis is usually made on serology, although increasingly, *Treponema pallidum* nucleic acid amplification techniques are being used to diagnose early syphilis. Serology can also be performed on cerebrospinal fluid (CSF) if neurological symptoms or signs are present.

Disseminated gonorrhoea infection

The classic presentation of disseminated gonorrhoea infection (DGI) is arthritis-dermatitis syndrome, as often there are no genital symptoms. Joint or tendon pain with fever are the most common presenting complaints in the early stage of infection. Many patients with DGI describe migratory polyarthralgia, especially of the knees, elbows and more distal joints, and may also have tenosynovitis. The dermatitis consists of lesions varying from maculopapular to pustular, often with a hemorrhagic component. The second stage of DGI is characterised by septic arthritis, and the knee is the most common site of purulent gonococcal arthritis.¹²

Rare complications of DGI are gonococcal meningitis and endocarditis, with the aortic valve affected most commonly. Gonococcal endocarditis can cause severe valvular damage and death if not recognised and treated rapidly. Patients with suspected DGI should be screened for gonorrhoea at pharynx and genital sites, as well as synovial fluid, blood and CSF if presenting with symptoms of meningitis. If suspected, DGI should be treated empirically with intravenous third-generation cephalosporin. A response is usually seen within 48 hours.¹²

Sexually acquired reactive arthritis

Sexually acquired reactive arthritis (SARA) is a sterile inflammation of the synovium, tendons and fascia, linked to a STI: most commonly chlamydia (75%) but also gonorrhoea.¹² SARA is more common in men and those who are HLA-B27 positive, and tends to affect multiple asymmetric joints in the lower limbs or sacroiliac joints. Onset of arthritis typically occurs around 14 days after onset of urethritis in men (women usually have asymptomatic cervicitis) and 50% also develop conjunctivitis. Acute anterior uveitis may lead rapidly to cataract formation and blindness if it is inadequately treated or recurrent, so although this is rare, early detection is essential. Ideally all patients with SARA should be referred to an ophthalmologist for assessment with slit lamp. 40% develop skin manifestations such as psoriasis or circinate balanitis.¹²

SARA is usually self-limiting with an average first episode lasting 4–6 months. 50% of cases will recur. Any STI detected should be treated in the patient and their partners but this will not alter the course of the arthritis. This should be managed with rest and NSAIDs and referred to a rheumatologist if not responding.¹²

Fitz–Hugh–Curtis syndrome

Fitz–Hugh–Curtis syndrome is a rare complication of pelvic inflammatory disease (PID) where chlamydia (or occasionally gonorrhoea) spreads from the cervix causing endometritis,

Table 1. Clinical indicator diseases for adult HIV infection.

	AIDS-defining condition	Other conditions where HIV testing should be offered
Respiratory	Tuberculosis Pneumocystis	Bacterial pneumonia Aspergillosis
Neurology	Cerebral toxoplasmosis Primary cerebral lymphoma Cryptococcal meningitis Progressive multifocal leucoencephalopathy	Aseptic meningitis/encephalitis Cerebral abscess Space occupying lesion of unknown cause Guillain–Barré syndrome Transverse myelitis Peripheral neuropathy Dementia Leucoencephalopathy
Dermatology	Kaposi's sarcoma	Severe or recalcitrant seborrhoeic dermatitis Severe or recalcitrant psoriasis Multidermatomal or recurrent herpes zoster
Gastroenterology	Persistent cryptosporidiosis	Oral candidiasis Oral hairy leukoplakia Chronic diarrhoea of unknown cause Weight loss of unknown cause Salmonella, shigella or campylobacter Hepatitis B infection Hepatitis C infection
Oncology	Non-Hodgkin's lymphoma	Anal cancer or anal intraepithelial dysplasia Lung cancer Seminoma Head and neck cancer Hodgkin's lymphoma Castleman's disease
Gynaecology	Cervical cancer	Vaginal intraepithelial neoplasia Cervical intraepithelial neoplasia grade 2 or above
Haematology		Any unexplained blood dyscrasia including neutropenia, thrombocytopenia or lymphopenia
Ophthalmology	Cytomegalovirus retinitis	Infective retinal diseases including herpes viruses and toxoplasma Any unexplained retinopathy
Ear, nose and throat		Lymphadenopathy of unknown cause Chronic parotitis Lymphoepithelial parotid cysts
Other		Pyrexia of unknown origin Any lymphadenopathy of unknown cause Mononucleosis-like syndrome (primary HIV infection) Any sexually transmitted infection

STI = sexually transmitted infection.

salpingitis and then perihepatitis.¹² Fitz–Hugh–Curtis syndrome causes inflammation of the liver capsule, and fibrous 'violin string' adhesions may form between the capsule and parietal peritoneum. It usually presents with acute right upper quadrant pain, pleuritic pain and liver tenderness. Features of PID, such as

pelvic pain, dyspareunia and vaginal discharge, may be minimal making the diagnosis less obvious. Abdominal ultrasound can rule out cholecystitis, and liver function tests are typically normal, as the liver parenchyma is not involved. Vulvovaginal or cervical swabs for chlamydia and gonorrhoea should be taken

and treatment with appropriate antibiotics is required for 2–3 weeks. Pain usually settles quickly, although laparoscopy for lysis of adhesions is sometimes required for chronic pain.¹²

Lymphogranuloma venereum and proctitis

While chlamydial infection affects people of all genders and sexual orientation, diagnoses of lymphogranuloma venereum (LGV), an infection caused by three serovars of *Chlamydia trachomatis*, are made almost exclusively in MSM.¹³

Acquisition of LGV in the UK has been found to be associated with unprotected anal sex and fisting, simultaneous contacts eg at sex parties or saunas, poly-drug use and HIV seropositivity. Until 2004, LGV was rare in Europe, however, an increasing number of cases are now being reported. Patients often present with anal pain, tenesmus, pain on defaecation and bloody diarrhoea, hence LGV can be mistaken for inflammatory bowel disease.¹⁴

Proctoscopy typically reveals a blood-stained purulent discharge and there may be visible ulceration. Rectal nucleic acid amplification tests (NAATs) for *Chlamydia trachomatis* will be positive, and specific analysis for the L1, L2, and L3 serovars that cause LGV should be requested. Treatment is with a prolonged course of doxycycline 100 mg twice daily for three weeks.

Chronic untreated cases are at risk of anal stenosis and fistulas.¹⁵

Several other STIs, including gonorrhoea, chlamydia and herpes simplex virus, can also manifest with symptoms and endoscopic features of proctitis. Therefore, testing should be considered irrespective of age or gender, as anal sex is increasing in young women, and males may not disclose their sexual orientation.

Testing for HIV and STIs

Venous fourth-generation HIV tests can detect infection four weeks after exposure in 95% of cases; therefore, testing should not be deferred. In high-risk cases, testing should be repeated at six weeks. Oral sampling, point of care testing and self sampling can be used if the patient requests these options.¹⁶ However as these methods only test for antibody, UK guidelines⁹ state an additional HIV test should be offered to all persons at 12 weeks to definitively exclude HIV infection. Syphilis testing can occur at the same time and hepatitis B and C serology should be considered if there are abnormal liver function tests or risky behaviour.

Most STI testing can be done in medical outpatients, on wards or in emergency rooms using NAATs allowing self-testing for vaginal, pharyngeal and rectal samples and urine testing for males. High-risk cases should also be referred to sexual health services, but as they may not attend, testing should be done initially by the referrers.

Summary

All physicians who care for adolescents need to consider that they may be sexually active and be able to take a sexual history. A risk assessment for CSE using the *Spotting the signs* proforma should be performed on any under 18 year olds or those over this age who are vulnerable, if there is evidence of self-harm, drug or alcohol abuse or unexplained medical symptoms. Legal highs used by adolescents increase risk taking behaviour and STI risk further.

Systemic symptoms of STIs, including HIV, should be considered in adolescents as well as adults, and testing can be undertaken in general medical settings. ■

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