with low HIV prevalence rates (prevalence among the STD clinic attendees <5%) in the year 2001 while six states stayed as high prevalence states (prevalence among ANC attendees >1%). Haryana is still maintaining itself in a low level epidemic category. It is speculated that the effect of STD control and screening of ANC attendees for HIV transmission may decrease with the maturation of the HIV epidemic as experienced in trials in Tanzania and Uganda.[5] Therefore, we should increase intervention programmes in all high risk groups as well as in the general population of this city while it is still in the early epidemic phase to ensure that this cost effective opportunity is not missed.

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Increased numbers of acute hepatitis C infections in HIV positive homosexual men; is sexual transmission feeding the increase?

Although the principal mode of hepatitis C (HCV) transmission in the United Kingdom is injecting drug use (IDU), the risk for a third of infections is unknown.[1] The contribution of sexual transmission between men who have sex with men (MSM) to the spread of hepatitis C is unclear, however evidence is accumulating that both co-infection with HIV[2] and the presence of other sexually transmitted infections (STIs) facilitate sexual transmission of HCV.[3] With the reported increases in unsafe sex and STIs in HIV positive MSM we questioned whether these circumstances may lead to an increase in the number of HCV infections.

This study was undertaken to determine whether within our clinics, changes in the number of individuals being diagnosed with acute HCV infection were occurring and to ascertain risk factors for acquisition in these individuals.

A case note review of all patients within the HIV and sexual health clinics of St Stephen's Centre with diagnosed acute HCV infection between January 1997 and December 2002 was performed. Patients newly diagnosed with HCV were identified from departmental computer records. Cases were defined as individuals with a newly positive and a previous negative HCV antibody test. Where negative tests had been performed more than a year earlier, testing of stored samples was undertaken to determine more precise timing of HCV seroconversion. Testing was done using the Monolisa anti-HCV version 2 enzyme immunoassay.

Twenty six male (all MSM) and one female case were identified; median age was 34 years. Twenty five individuals were HIV positive. The median time between negative and positive HCV antibody tests was 5 months (interquartile range 3–10 months). There was a significant increase in HCV seroconversions over the study period (see fig 1).

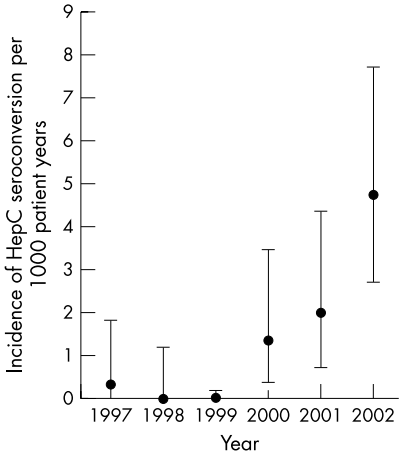

Figure 1 Changing incidence of documented HCV seroconversion. Test for trend p value using Poisson regression p<0.001. Error bars are 95% CI. Date of seroconversion was taken as the date of the first positive HCV antibody test.

The indications for HCV testing were the development of abnormal alanine transaminase (ALT) (21), recent IDU (two), sexual contact with HCV positive partner (one), and symptomatic seroconversion (three). Of those tested because of newly abnormal liver function tests (LFTs), 18 were asymptomatic. LFTs were performed as part of routine HIV follow up. There was no increase in HCV tests performed in HIV positive individuals with ALT levels more than 100 IU/l over the study period; however, the percentage of positive HCV tests increased from 0.6 to 9.3 (p value using χ^2 test for trend: <0.001).

Risks for acquisition of HCV were recent unprotected anal or vaginal sex (21) and IDU (two), while in four there were no documented risk factors. Nine individuals were diagnosed with infectious syphilis either concurrently (three) or in the year before HCV seroconversion. Of the HIV positive patients 15 were on antiretroviral therapy (ARV) and 11 had a viral load of less than 50 copies/ml. The median CD4 count was 359 cells $\times 10^6$/l.

Having multiple sexual partners, a history of STIs, and certain sexual practices have been associated with HCV infection. Reported increases in HCV seroconversion among HIV positive MSM in association with high risk sexual behaviour (unprotected anal sex, fisting, and rimming) suggests an interaction between HIV and sexual practice.[4] As HCV plasma viraemia is higher in co-infected patients[5] and correlates with that in saliva and semen, this may facilitate sexual transmission of HCV. Furthermore, there is evidence that ARV treatment may be associated with increases in HCV RNA levels.[6]

While retrospective assessment of factors may be problematic, features of this study make us more confident of attributing risk to sexual activity. Data were collected in both general HIV and specialist hepatitis clinics, and also most patients were under long term follow up allowing cumulative recording of risks particularly those relating to IDU.

Although it is possible that increased numbers result from changing HCV testing thresholds there was no evidence of this when we examined HCV tests performed to investigate those with abnormal LFTs, the commonest scenario leading to diagnosis. As the ALT trigger was present in the HIV positive group and not in the sexual health clinic attendees, the numbers from this source may be under-represented.

Determining the associated factors for transmission of HCV is critically important in order to introduce targeted screening and prevention interventions. As 85% of infected patients become chronic carriers and treatment of acute hepatitis C leads to high clearance rates, these strategies may be crucial in reducing the carrier pool of HCV, further transmissions and the risk of cirrhosis and hepatoma.

The study numbers are small and may represent a pocket of infection not indicative of increased risks in larger populations. However, the manner in which these infections parallel recent increases in STIs gives cause for the concern that risks may be more generalised. Further studies are needed to clarify this trend.

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Transmission of *Neisseria gonorrhoeae* from a toilet seat

In August 2003 a prepubescent 8 year old girl presented with a sudden onset history of a non-irritating, odourless heavy green vaginal discharge which had developed overnight. She had arrived back in Sydney approximately 24 hours earlier by an international air flight following an overseas holiday with her mother and two adolescent siblings. The family had spent 72 hours in transit flying from Rome to Sydney via Moscow.

The child was taken initially to her family doctor and a heavy growth of *Neisseria gonorrhoeae* was isolated. The organism was resistant to both penicillin and ciprofloxacin. One week later, following an initial course of antibiotics, the child was referred to the author for assessment of possible sexual abuse and ongoing management of the *N gonorrhoeae* infection.

Before boarding a flight to Moscow the family had spent 3 days in a hotel, sightseeing and the previous 2 days with relatives. During the 8 days before arriving in Sydney, the mother had unusually close contact with the child, had shared a bedroom with her, and had accompanied her almost continually. The child's behaviour and demeanour had shown no change and both the child and the siblings were asymptomatic. When questioned by her mother, the child strongly denied any history of genital contact.

The flights to and from Moscow were noted to be full with no spare seats. Both the mother and the child stated that there were queues to use the toilets during both flights and that by the end of the flights the ''toilets were very dirty.''

The mother stated that when the child used a public toilet the child always wiped the seat with toilet paper before using it. The child confirmed this. She said her fingers occasionally became dirty while wiping the seat.

Genital examination of the child revealed no significant redness of the introitus or physical abnormality. She had an intact annular hymen; however, the absence of genital injury has no relevance in making a diagnosis that excludes sexual abuse.[1]

As part of the routine investigation, the matter was reported the New South Wales Department of Community Services and all family members were tested for *N gonorrhoeae* and were negative.

It is important that all cases of *N gonorrhoeae* in children be fully investigated for sexual abuse, and reported to the relevant child protection authorities. There is no doubt that almost all gonococcal vaginal infections in prepubertal children are sexually transmitted,[2] and this may include those previously reported as non-sexual.[3] However it is also accepted that cases of non-sexual transmission of *N gonorrhoeae* in children do occur,[4] but proof beyond all doubt can be very difficult to document scientifically.

On the basis of the demeanour of the child, reports of increasing rates of gonorrhoea in the former Soviet Block countries,[5] the incubation period for symptomatic *N gonorrhoea*, the history from the mother and her unusually close supervision of the child, as well as the child's known behaviour in public toilets, it is the belief of the author that the child most probably contracted the infection via autoinoculation while using a mixed toilet in a crowded aeroplane.

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Detection of *Chlamydia trachomatis* by polymerase chain reaction in male patients with non-gonococcal urethritis attending an STD clinic

Genital infection with *Chlamydia trachomatis* (35–50%) is the single most identifiable cause of non-gonococcal urethritis (NGU) in heterosexual men and may have serious consequences, not only for men but for their partners. In India, a high prevalence of genital *C trachomatis* infection has been reported in women.[1] However, there is considerably less information on male chlamydial infection.[2 3] There is a definite need for reliable screening of *C trachomatis* genital infection in men in order to prevent underdiagnosis of genital chlamydial infection and to facilitate better clinical management of this infection in India. This study was undertaken with the aim to find the prevalence of *C trachomatis* infection in male patients with NGU attending the STD clinic of a major city hospital in north India.

After obtaining informed oral consent, 90 male patients (age 18–55 years) clinically suspected to have urethritis and attending the STD clinic at Safdarjang Hospital, New Delhi were enrolled. Of these, 85 NGU patients were included in the study on the basis of microscopic examination of urethral swab specimens for the presence of >10 polymorphonuclear neutrophils/high power field and negative results for *Neisseria gonorrhoeae*. None of the patients showed genital lesions. The patients belonged to various socioeconomic groups and the majority of them admitted to having extramarital heterosexual contact. The specimens were collected using sterile cotton tipped swabs (Hi Media, Mumbai, India) from the urethra of each patient after removing the secretions/discharge. The samples were collected in vials containing phosphate buffered saline for screening by a plasmid specific polymerase chain reaction (PCR) assay (517 bp)[1] and confirmation by culture in McCoy cell line followed by direct fluorescent assay (DFA) (Microtitre, Syva Corporation, Palo Alto, CA, USA) on infected coverslips.[4]

Urethral *C trachomatis* infection was found by PCR (fig 1) and culture in 20 (22.3%) and 21 (24.7%) symptomatic male NGU patients, respectively. Further, chlamydial infection was most common (27.6%; statistically non-significant) in men in the 26–35 years age group. In an earlier hospital based study on male NGU patients reported from India, *C trachomatis* and *Trichomonas vaginalis* were the most common pathogens found by culture in urethral discharge specimens, being responsible for 18% and 19% cases, respectively.[2] Another study from Chennai, India reported the prevalence of *C trachomatis* infection in male and female genital swab specimens as 18.9% and 32.2% by culture and PCR, respectively.[3] *Chlamydia* and *Ureaplasma urealyticum* were the most common infecting and co-infecting pathogens (51.5% by PCR in first void urine and 45.6% by culture in intra-urethral swab specimens, respectively) in male patients with NGU attending an Israeli STD clinic.[5] In a study from Turkey, the prevalence of *C trachomatis* and *N gonorrhoeae* (screened by ligase chain reaction in either

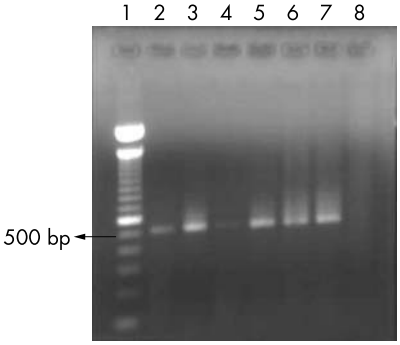

Figure 1 Detection of *Chlamydia trachomatis* by polymerase chain reaction in 1% agarose gel electrophoresis using 517 bp plasmid primer. Lane 1 is DNA marker. Lanes 2–6 show amplification of *C trachomatis*. Lane 8 is a negative control. Lane 7 is a positive control for *C trachomatis*.