copies of HIV genome per $1 \times 10^6$ cells. The high sensitivity of PCR is often compromised by the specificity of the reaction because of false positivity. However, using the strict guidelines recommended by Ehrlich and co-workers (6) during sample preparation and amplification, we have been able to keep false-positive PCRs below 1%. Both virus culture and PCR-amplified HIV-1 DNA product were found in 13 of 19 (68%) children born to HIV-1-infected mothers. Our PCR results are in agreement with the high sensitivity of PCR reported for the early diagnosis of HIV-1 infection in infants (2,3). A 100% correlation of virus culture with PCR in both asymptomatic and symptomatic children indicates high sensitivity of the virus culture used in this study. Furthermore, all children who were positive for virus culture and PCR remained positive in both of these tests on follow-up visits (data not shown). Of eight asymptomatic children at enrollment, six were either seronegative or had subsequent reversion to seronegativity. All six children were found to be negative by virus culture and PCR, indicating that they were not infected. Serum antigenemia was found to be less sensitive for the diagnosis of HIV-1 infection as compared with PCR and virus culture. In this study, no correlation was obtained between the disease state and the ability to isolate virus or to detect HIV-1 by PCR. However, the small sample size used is insufficient to draw any conclusion.

Although direct detection of HIV provirus by PCR in lysed cells provides a rapid diagnosis of HIV-1 infection in children, it cannot be determined whether the viral genome is actively expressed. A positive virus culture, on the other hand, indicates that the provirus is capable of expression. Direct detection of HIV provirus by PCR circumvents the difficulties of serologic diagnosis of children born to HIV-1-infected mothers. However, because PCR is a very specialized test, it may not be available in all clinical laboratories. It is reassuring to know that virus culture can be performed to detect HIV infection in children with a high degree of sensitivity.

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HIV-1 Infection, Tuberculosis, and Syphilis in Male Transsexual Prostitutes in Milan, Italy

To the Editor: Even though homosexual male prostitution is currently indicated as a contributor to the dissemination of human immunodeficiency virus type 1 (HIV-1), its actual role has thus far been investigated only rarely (1,2). Although official data are presently lacking, it is estimated that at least 500 male transsexuals, from Brazil and other South American countries, mostly illegal immigrants, are actively engaging in prostitution in Milan, Italy. Male prostitution is also commonly practiced by Italian subjects, mostly transsexuals.

We describe here some clinical and epidemiological features found in a consecutive series of 49 male prostitutes observed at our departments in Milan from 1986 to 1989. 25 of the subjects studied were South Americans, all from Brazil except 2 (1 Colombian, 1 Argentine), and 24 were Italians. The mean age was 29.1 ± 4.6 years for South Americans and 35.7 ± 8.1 years for Italians.
The HIV-1 seroprevalence was significantly higher in South Americans than in Italian male prostitutes ($p = 0.0141$, Fisher's exact test—Table 1). Serologic tests for syphilis were very frequently positive in both groups without significant differences. All of the subjects who were reported positive for syphilis serology had a positive VDRL, *Treponema pallidum* hemagglutinin assay (TPHA) and fluorescent treponemal antibody absorption (FTA-ABS) tests. All of the South American subjects but one denied any previous treatment for syphilis. Only one of the Italian subjects had not been previously treated. As far as hepatitis B virus (HBV) infection is concerned, one or more markers of past infection (either anti-HBs and/or anti-HBc) were present in the great majority of the subjects studied (one Italian was HBSAg positive). Active tuberculosis was diagnosed in 11 South American and in 1 Italian patient (10 had positive sputum smear and all but 1 South American were HIV-1 positive). Intravenous drug use was always associated with HIV-1 infection in our case file.

The HIV-1 prevalence in our study is higher than those previously reported by Elfson et al. (27%) among male street prostitutes in Atlanta (2) and by Cortes et al. among homosexual (45%) and bisexual (32%) male prostitutes recruited in homosexual clubs in Rio de Janeiro (3), but it is similar to the one reported by Suleiman et al. among transsexual prostitutes in São Paulo (4). The prevalence rate of serologically documented syphilis in both South American (95%) and Italian (75%) transsexuals was much higher than the one found among male prostitutes in Atlanta (22%), as was the prevalence of the HBV markers.

These two data confirm the high risk of infections transmissible through sexual contacts among transsexual prostitutes. Besides providing portals of entry of HIV, syphilis-related genital ulcerations might also represent a source of HIV transmission to uninfected sex partners. The high frequency of tuberculosis among South American transsexuals reflects the epidemiological situation of HIV-infected people in Brazil (5). Lastly, it is possible that drug addiction has a relevant role in the spread of HIV among transsexuals. The high frequency of drug addiction in these subjects is also confirmed by the data collected at the Milan City Morgue: Of the six corpses of transsexuals deceased because of violent or uncertified death (four South Americans, two Italians) examined during the period of our study, four died by overdose and the other two had opioids in their body fluids.

In conclusion, transsexual male prostitution has become in recent years a common form of prostitution in major Italian towns. The behavioral characteristics and the sexual habits of the subjects who practice this kind of prostitution make them a quite different group from the other male prostitutes engaging in sexual intercourse with homosexual men; furthermore, their clients frequently define themselves as heterosexuals and have regular intercourse with women. Besides being a possible source of tuberculosis and syphilis, male prostitution practiced by transsexuals might play an important role in the transmission of HIV-1 infection to the heterosexual population.

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HIV Infection in the Blood Donors of Delhi, India: 1½ Years' Experience

To the Editor: Studies in India have shown that the two important population groups at risk for human immunodeficiency virus (HIV) infection are heterosexually promiscuous persons and professional (paid) blood donors (1–5). After the first report of seropositivity among blood donors from our group (5), mandatory screening of all the units of donated blood was started (6), leading to the detection of many more HIV-infected blood donors in Delhi. This report describes the seroprevalence of HIV infection among voluntary and paid blood donors from the Delhi area.

There are two types of blood donors: voluntary and professional (paid) blood donors (4). Professional blood donors donate their blood on payment in most blood banks in the country, including Delhi. Most of them indulge in heterosexual promiscuity. We tested 26,746 serum samples from paid donors and 52,956 units from voluntary donors, using commercially available enzyme-linked immunosorbent assay (ELISA) (Wellecozyme, Wellcome Diagnostics, Dartford, England) and Western blot (Du Pont, MD, U.S.A.) kits. The methodology followed was the same as that described in our previous article (5). The ELISA reactive units of blood were discarded and the blood donors with confirmed seropositivity were counselled on safe sex and avoidance of blood donations. They were also examined for any HIV-related clinical illness.

Of paid blood donors, 28 (0.10%) were found to have antibodies against HIV-1 by both ELISA and Western blot tests. Four of them have been described previously (5). These four were counselled about HIV infection by one of us (Y.N.S.). Twenty of the remaining 24 seropositive blood donors could be traced, 16 of whom have been visiting prostitu-

utes. The additional two admitted having bisexual promiscuity. None of them, however, gave a history of i.v. drug use or transfusion of blood/blood products. Interestingly, the remaining two donors did not give any history of risk behavior.

Among the voluntary blood donations, seven (0.01%) samples gave unequivocal evidence of HIV-1 infection. While one of them was from an African who donated blood for his colleague, the other six were from Indians. Five of them could be traced. The African national and the three Indians were promiscuous heterosexuals. One Indian was a promiscuous homosexual with contacts in India and abroad. Interestingly, two of the Indian seropositive blood donors were actually professional (paid) blood donors disguised as voluntary blood donors posing as relatives after they were paid by the patient.

This work and the work from other centers in India (7) clearly shows that paid blood donors have much more risk of being HIV positive than voluntary donors. Since the majority of seropositive blood donors are heterosexually promiscuous, there is a distinct chance that they may infect their sexual partners. Many of the seropositive donors have migrated peripherally to the smaller cities for donating blood because for many of them blood donation provides earnings for the daily sustenance. Rising seroprevalence among blood donors and a high chance of HIV infection to the recipient of the infected blood makes it all the more important that in every blood bank, mandatory HIV screening must be started for each unit of donated blood. The fact that two blood donors did not admit any risk behavior is an important finding. The possibility that they had gotten HIV infection from unsterilized needles/instruments at the donations sites cannot be ruled out.

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