Pediatric HIV in Mumbai

Sir,

An estimated 2.1 million children were living with HIV/AIDS at the end of 2007. Of these, two million were living in sub-Saharan Africa. Most of these children have acquired HIV from their HIV-infected mothers during pregnancy, birth or breastfeeding. With successful interventions, the risk of mother-to-child HIV transmission can be reduced to 2%. However, such interventions are still not widely accessible or available in most resource-limited countries where the burden of HIV is highest, and an estimated 1,000 children get newly infected with HIV each day.[1]

In India, most initial reports in pediatric HIV infection were focused on multi-transfused recipients such as thalassemics.[2] With mandatory screening of blood products, the incidence of transfusion-associated HIV infection has reduced dramatically and is now seen only sporadically. In spite of this decrease, pediatric HIV infection has become an important public health issue due to a sharp rise in infection rates among women. This is particularly true for India where the major mode of transmission is heterosexual contact.[3]

Although the problem is well-recognized, there are scant reports on the prevalence of pediatric HIV infection from India.

This study was carried out in the Department of Microbiology at the B.Y.L Nair Charitable Hospital, Mumbai.

A total of 1,220 children (652 males and 568 females) in the age group of 18 months to 14 years, who were either walk-in clients or referred by clinicians, underwent HIV antibody testing after pre-test counseling and informed consent of guardian or parent from August 2009 to July 2010. Tests were carried out as per the guidelines laid down by the National AIDS Control Organization (NACO), India.

A total of 66 children (5.4%) were seropositive for HIV. The seroprevalence rate was highest in males, 8-14 years (50%), followed by females, 8-14 years of age (42%), and females, 18 months-3 years (33%). Mother-to-child transmission was the most common mode of infection in 63 children (95.4%). Two children gave history of blood transfusion. The mode of transmission was uncertain in one female child. A history of sexual abuse could not be elicited.

Karande et al. have reported a seroprevalence of 11.2% among hospitalized children in 2002 in Mumbai.[4] Parthasarathy et al, reported a prevalence of 8.9% in 2006 in New Delhi.[3] However, prevalence in our study was 5.4%. This fall in seroprevalence may be attributed to the effectiveness of the Prevention of Parent to Child Transmission (PPTCT) program by NACO, which was started in 2002.[5]

In general, pediatric HIV is not equivalent to adult HIV. Children tend to suffer from primary infections - opportunistic as well as others. While adults suffer with reactivation infections due to waning immunity as their HIV progresses, the overall progression of HIV in children is more rapid, and it tends to occur with more immature immune systems, although CD4 counts are still high. If children acquire this infection at an early age, this has prominent effects on growth and neurodevelopment. A majority of pediatric infections are perinatally acquired. Hence, early diagnosis of HIV infection among children is crucial, enabling early initiation of anti-retroviral therapy and cotrimoxazole prophylaxis, thus limiting virus multiplication and preventing secondary infections.

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Antimicrobial susceptibility of Neisseria gonorrhoeae in Pune from 1996 to 2007

Sir,

Gonorrhea is one of the most common sexually transmitted infections (STIs) in developing countries. The prevalence of gonorrhea in males aged between 15 and 49 years was estimated to be 1% in South and Southeast Asia.\[1\] Control of gonococcal infection is a difficult and a complex issue due to emergence of strains resistant to different antibiotics. Recent studies have revealed a high level of resistance against several antimicrobial agents, such as penicillin, tetracycline, and quinolones in different countries, including India,\[2,3\] resulting in increasing challenges in the management of gonorrhea. Periodic monitoring for antimicrobial resistance against Neisseria gonorrhoeae provides essential information for updating local treatment guidelines. Therefore, the ongoing surveillance for antimicrobial resistance against N. gonorrhoeae is a public health strategy to detect its emergence and extent of spread and also to formulate national treatment guidelines.

The present study describes the variation in antibiotic susceptibility pattern of 296 N. gonorrhoeae strains isolated from patients attending four sexually transmitted disease clinics from January 1996 to December 2007 as a part of ongoing long-term surveillance conducted at the National AIDS Research Institute in Pune city in India. Isolation, identification, and antibiotic susceptibility testing was performed as per standard guidelines.\[4,5\] Overall, increase in resistance for all antibiotics over time, was recorded. Penicillin resistance showed an increasing trend from 13% in 1996 to 100% in 2007 and was found to be significant (\(P < 0.01\)). Ciprofloxacin resistance increased from 72% in 1996 to 100% in 2007 and no significant trend was observed. The prevalence of plasmid-mediated penicillin-resistant gonococci strains increased significantly from 4% in 1996 to 25% in 2004 (\(P < 0.05\)). The MIC 90 values of the resistant isolates are shown in Figure 1. The ciprofloxacin MIC 90 (64 mg/L) for the isolates in 2007 was higher than isolates obtained in 1996 [MIC 90 (4 mg/L)]. All isolates were susceptible to ceftriaxone and spectinomycin except two obtained in 2005, which showed reduced susceptibility to ceftriaxone.

No difference was observed in the antibiotic susceptibility pattern in N. gonorrhoeae strains isolated from HIV-positive and HIV-negative individuals. The study has the limitation of smaller number of isolates in the later years (2002–2007). The number of gonorrhea patients seen in the clinics drastically reduced over time, which may be due to increased awareness or widespread use of syndromic management of the STD cases.

Antimicrobial susceptibility of N. gonorrhoeae isolated in Pune during the past decade was characterized by high rates of resistance to penicillin and ciprofloxacin. Cefixime is the first-line drug recommended under syndromic management of STIs according to the recent NACO guidelines for treatment of gonorrhea.\[6\] However, emergence of less susceptible strains to ceftriaxone and cefixime have been reported from WHO regional and reference center Delhi (Personal communication) which highlights the importance of routine monitoring antibiotic resistance. Results of the study support the current recommendations of NACO for use of third-generation as the first choice drugs for the empirical treatment of gonorrhea in India.