

Correspondence

Declining HIV seropositivity: Ten years experience from a tertiary care hospital in central India

Sir,

The testing for HIV, early diagnosis and access to treatment are important factors for controlling the HIV/AIDS epidemic¹. The theme of “Getting to Zero” adopted by UNAIDS for the period 2011-2015 clearly reflected optimism regarding global response to HIV². The impact of various interventions under the National AIDS Control Programme (NACP) can be seen from an overall reduction of 57 per cent in the annual new HIV infections among adult population from 2.74 lakh in 2000 to 1.16 lakh in 2011³. After the encouraging results of NACP Phase III, the NACP Phase-IV (2012-2017) aims to accelerate the process of reversal and further strengthen the HIV epidemic response in India⁴.

To understand the HIV/AIDS epidemiology in a particular region with reference to various socio-demographic factors, awareness, high risk behaviour, *etc.* the HIV reporting trends in the Integrated Counselling and Testing Centres (ICTC) provide an important clue to assess the effectiveness of the preventive strategies undertaken⁵. Therefore, a retrospective analysis of data from available records of all individuals who attended ICTC of Government Medical College, Nagpur, Maharashtra, India, between January 2004 and December 2013 was carried out. The present study included 60,181 ICTC attendees. The NACO guidelines of pre-test counselling, written informed consent and post-test counselling was followed⁶. The Strategy III of National HIV testing algorithm was followed⁷. Prior clearance was obtained from the Ethical Committee of the institution. The statistical analysis was done using STATA (version 10.4, 2009, STATA Corp, Texas, USA) and Epi Info 7 (version 7.1.06, 2012, CDC, Atlanta, USA). Chi-square test for linear trend (Extended Mantel Haenszel) and Student t test were used for data analysis.

A total of 60,181 individuals (37,077 male, 23,104 female) were tested for the detection of HIV antibodies. Of the 10,089 HIV seropositive cases, 6537 (17.63%) were males while 3552 (15.37%) were females. It was observed that though the maximum total per cent positivity was 33.26 per cent in 2005 and 2006, there was a steady decline in the per cent positivity from 2007 onwards and it was remarkably reduced to 6.01 per cent in 2013 (Table I).

The seroprevalence in males was highest (33.42%) in 2006 which gradually declined to 6.30 per cent in 2013. The seroprevalence in the females was highest in 2005 (34.08%) which declined to 5.63 per cent in 2013. There was a significant ($P < 0.001$) declining trend in seropositivity over the 10 years period. A similar decline in seroprevalence from 10.4 per cent in 2008 to 6.1 per cent in 2010 was observed in Andhra Pradesh⁸. In comparison, lower prevalence of 1.44 per cent were observed in Rajasthan⁹, 4.8 per cent in Ahmedabad, Gujarat¹⁰, 5.1 per cent in Andhra Pradesh⁸, and 5.6 per cent in Kwara, Nigeria¹¹. A declining trend in adult HIV prevalence has been reported in high-prevalence States¹². In the present study, the HIV seropositivity amongst males was 64.79 per cent and amongst females was 35.21 per cent. Similar estimates have been reported by Sekar *et al*¹ (45.5% males and 54.5% were females) in southern India, Dash *et al*¹³ (62% males & 38% females) in Odisha and Gupta *et al*¹⁴ (61 and 39%) in Udupi. The last six year data (2008-2013) showed that HIV-2 seropositive cases were only 5, 8, 4, 2, 4 and 2, respectively, while combined HIV-1 and -2 cases were 29, 57, 18, 18, 13 and 9 during these years. A very low seroprevalence of combined HIV-1 & -2 and only HIV-2 was observed in our study from the data available since 2009-2013. Similar finding has been reported by Kannangai *et al*¹⁵.

Table I. Year-wise & sex-wise distribution of persons tested for HIV seropositivity (2004-2013)

Year	Persons tested	Male tested	Male positive (%)	Female tested	Female positive (%)	Total positive (%)	95% CI
2004	1983	1355	417 (30.77)	628	182 (28.98)	599 (30.20)	28.2-32.3
2005	4233	2886	949 (32.88)	1347	459 (34.08)	1408 (33.26)	31.8-34.6
2006	3962	2624	877 (33.42)	1338	441 (32.96)	1318 (33.26)	31.8-34.8
2007	4331	2789	704 (25.24)	1542	410 (26.59)	1114 (25.72)	24.4-27.1
2008	5773	3774	755 (20.01)	1999	397 (19.86)	1152 (19.95)	18.9-21.0
2009	6762	4081	663 (16.25)	2681	375 (13.99)	1038 (15.35)	14.5-16.2
2010	8122	4959	739 (14.90)	3163	451 (14.26)	1190 (14.65)	13.9-15.4
2011	7185	4360	548 (12.57)	2825	285 (10.09)	833 (11.59)	10.9-12.4
2012	8339	4757	539 (11.33)	3582	327 (9.13)	866 (10.38)	9.7-11.1
2013	9491	5492	346 (6.30)	3999	225 (5.63)	571 (6.01)	5.5-6.5
Total	60181	37077	6537 (17.15)	23104	3552 (15.37)	10089 (16.76)	16.5-17.1

The age-wise distribution of total seropositive cases showed the maximum seropositivity (4420, 43.81%) in 25-34 yr age group. The age-wise distribution in seropositive males was 303 (4.63%), 290 (4.44%), 2787 (42.63%), 2487 (38.04%) and 670 (10.25%) and in seropositive females was 313 (8.81%), 420 (11.82%), 1633 (45.97%), 970 (27.31%) and 216 (6.08%) in the age groups 0-14, 15-24, 25-34, 35-49 and ≥ 50 yr, respectively. Thus, the maximum seropositivity was seen in the same age group in both the sexes. In the seropositive cases, the commonest

route of transmission was heterosexual seen in 83.70 per cent cases (Table II). Chi square test for linear trend (Extended Mantel Haenszel) indicated a significant association ($P < 0.05$) between the route of transmission and prevalence of HIV. In our study, the parent-to-child transmission of HIV was 5.02 per cent which was similar to earlier studies; (5.6 to 12%)⁵, (5.8%)¹³ and (4.16%)¹⁶. There was a reduction in positive cases over the recent years especially from 2007 with 7.18 to 2.63 per cent in 2013. Transmission by other modes like homosexual transmission (0.53%), blood transfusion

Table II. Route of HIV transmission in seropositive cases

Year	Heterosexual (%)	Homosexual (%)	Blood & blood product (%)	Infected needles (%)	Parent to child transmission (%)	Not specified (%)	Total (%)
2004	498 (83.14)	1 (0.17)	10 (1.67)	0 (0)	20 (3.95)	70 (11.69)	599
2005	1038 (73.72)	14 (0.99)	31 (2.20)	4 (0.28)	80 (5.68)	241 (17.12)	1408
2006	961 (72.91)	6 (0.45)	54 (4.09)	0 (0)	84 (6.37)	213 (16.16)	1318
2007	858 (77.02)	14 (1.26)	37 (3.32)	2 (0.18)	80 (7.18)	123 (11.04)	1114
2008	1011 (87.76)	9 (0.78)	13 (1.13)	1 (0.09)	56 (4.86)	62 (5.38)	1152
2009	907 (87.38)	3 (0.29)	25 (2.41)	0 (0)	36 (3.47)	67 (6.45)	1038
2010	1049 (88.15)	3 (0.25)	12 (1.01)	3 (0.25)	53 (4.45)	70 (5.88)	1190
2011	770 (92.44)	0 (0)	11 (1.32)	1 (0.12)	46 (5.52)	5 (0.60)	833
2012	808 (93.30)	2 (0.23)	9 (1.04)	1 (0.11)	36 (4.16)	10 (1.15)	866
2013	545 (95.45)	1 (0.17)	8 (1.40)	2 (0.35)	15 (2.63)	0 (0)	571
Total	8445 (83.70)	53 (0.53)	210 (2.08)	14 (0.14)	506 (5.02)	861 (8.53)	10089 (100)

(2.08%), and infected needles (0.14%) was low similar to that reported earlier^{8,16}.

Our study had some limitations. The results were based on data collected from the persons attending the ICTC setup only. The data on HIV-2 prevalence before 2009 were not available. The strength of the study was that the data presented useful epidemiological information about the HIV epidemic and the steady decline in HIV prevalence indicated the effectiveness of the present interventions of NACP III and the ongoing NACP IV programme. This needs to be strengthened further.

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