



ORIGINAL RESEARCH PAPER

Paediatrics

EPIDEMIOLOGICAL STUDY OF HIV-AIDS IN CHILDREN OF WESTERN RAJASTHAN

KEY WORDS: HIV infection, ART, Children

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ABSTRACT

HIV infection in children progresses more rapidly than in adults, and some untreated children die within the 1st 2 years of life. This observational study was conducted at the Department of ART centre MDM Hospital, in collaboration of Umaid Hospital, Dr. S.N. Medical College, Jodhpur. The purpose of this study was to clinical and epidemiological evaluation of HIV positive children under 1-15 year age group which are confirmed by HIV ELISA test. In present study there was male predominance in all age groups as compared to female (M: F = 1.94:1). In present study, 93.21% cases belonged to rural area. In present study most of cases (85%) belonged to lower socioeconomic condition. In present study, according to occupation of father out of 152 cases most of cases belong to laborers group (55.26%) followed by drivers (16.44%). In present study, most of pre ART cases were in WHO clinical stage I (52.6%) and ART cases were in WHO clinical stage II (46.62%).

Introduction

AIDS- Acquired Immuno Deficiency Syndrome is an important health problem in children in developing countries including India. Most HIV-infected children are born in developing countries. HIV infection in children progresses more rapidly than in adults, and some untreated children die within the 1st 2 years of life. This rapid progression is correlated with higher viral burden and faster depletion of infected CD4 lymphocytes in infants and children than in adults. Accurate diagnostic tests and the availability of potent drugs to inhibit HIV replication have dramatically increased the ability to prevent and control this devastating disease.

HIV infection in humans is considered pandemic by the World Health Organization (WHO). Nevertheless, complacency about HIV may play a key role in HIV risk.^{[1][2]} From its discovery in 1981 to 2006, AIDS killed more than 25 million people.^[3] HIV infects about 0.6% of the world's population.^[3] In 2005 alone, AIDS claimed an estimated 2.4–3.3 million lives, of which more than 570,000 were children. A third of these deaths are occurring in Sub-Saharan Africa, retarding economic growth and increasing poverty.^[4] According to current estimates, HIV is set to infect 90 million people in Africa, resulting in a minimum estimate of 18 million orphans.^[5] Antiretroviral treatment reduces both the mortality and the morbidity of HIV infection, but routine access to antiretroviral medication is not available in all countries.^[6]

Material and Methods

The present study was conducted at the Department of ART centre MDM Hospital, in collaboration of Umaid Hospital, Dr. S.N. Medical College, Jodhpur. This is an observational study of a cohort of patients receiving HIV primary care in the Department of ART centre MDM Hospital, Dr. S. N. Medical College Jodhpur. The purpose of this study was to clinical and epidemiological evaluation of HIV positive children under 1-15 year age group which are confirmed by HIV ELISA test.

In this study 280 HIV positive children (1-15 year age) were enrolled. Information on demographics and clinical category was noted.

Results

Table 1 DISTRIBUTION OF CASES ACCORDING TO AGE & SEX AT TIME OF DIAGNOSIS (YEAR)

AGE GROUP (YEAR)	MALE (%)	FEMALE (%)	TOTAL
1-5	77 (41.62)	43 (45.27)	120
5-15	108 (58.38)	52 (54.73)	160
TOTAL	185 (100)	95 (100)	280

Table 2 DISTRIBUTION OF CASE ACCORDING TO GEOGRAPHICAL AREA

AREA	No. of case (n=280)	%
RURAL	261	93.21
URBAN	19	6.79
TOTAL	280	100

Table 3 DISTRIBUTION OF CASES (PRE ART & ART) ACCORDING TO OCCUPATION OF FATHER

	NO. OF CASES (n=152)	%
DRIVER	25	16.44
FARMER	19	12.50
LABOUR	84	55.26
SHOPKEEPER	24	15.80
TOTAL	152	100

Table 4 DISTRIBUTION OF CASES (PRE ART & ART) ACCORDING TO WHO CLINICAL STAGE

WHO CLIN. STAGE	PRE ART CASE (n=192)	%	ART CASE (n=88)	%
I	101	52.60	13	14.77
II	78	40.62	41	46.60
III	12	6.25	31	35.23
IV	1	0.53	03	3.40
TOTAL	192	100	88	100

Discussion

In present study there was male predominance in all age groups as compared to female (M: F = 1.94:1). In present study it was found that age of diagnosis has wide variability ranging in 5-15 year of age group. In present study, 93.21% cases belonged to rural area. In present study most of cases (85%) belonged to lower socioeconomic condition. In present study, according to occupation of father out of 152 cases most of cases belong to laborers group (55.26%) followed by drivers (16.44%), shopkeepers (15.8%) and farmers (12.5%). In present study, most of pre ART cases were in WHO clinical stage I (52.6%) and ART cases were in WHO clinical stage II (46.62%).

Most untreated people infected with HIV-1 eventually develop AIDS.[7] These individuals mostly die from opportunistic infections or malignancies associated with the progressive failure of the immune system.[8] HIV progresses to AIDS at a variable rate affected by viral, host, and environmental factors; most will progress to AIDS within 10 years of HIV infection: some will have progressed much sooner, and some will take much longer.[9][10] Treatment with anti-retrovirals increases the life expectancy of people infected with HIV. Even after HIV has progressed to diagnosable AIDS, the average survival time with antiretroviral therapy was estimated to be more than 5 years as of 2005.[11] Without antiretroviral therapy, someone who has AIDS typically

dies within a year. [12]

Conclusion

Education is the best modality for HIV prevention. Antiretroviral therapy improves the health and immunity of patient. In children most common mode of transmission was mother to child transmission and this can be reduced by antiretroviral therapy during antenatal period.

REFERENCES

1. http://www.cdc.gov/hiv/resources/reports/hiv_prev_us.htm.
2. <http://www.cdc.gov/nchhstp/newsroom/docs/FastFacts-MSM-FINAL508COMP.pdf>.
3. http://data.unaids.org/pub/GlobalReport/2006/2006_GR_CH02_en.pdf.
4. Greener R. (2002). "AIDS and macroeconomic impact". State of The Art: AIDS and Economics. IAEN. pp. 49–55.
5. http://www.unaids.org/epi/2005/doc/EPIupdate2005_pdf_en/epi-update2005_en.pdf.
6. Palella F J, Delaney K M, Moorman A C, Loveless M O, Fuhrer J, Satten G A, Aschman D J, Holmberg S D (1998). "Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. HIV Outpatient Study Investigators". *N. Engl. J. Med* 338(13): 853–860.
7. Migueles S, Connors M, (2010). "Long-term Nonprogressive Disease Among Untreated HIV-Infected Individuals: Clinical Implications of Understanding Immune Control of HIV". *JAMA: the journal of the American Medical Association* 304 (2): 194–201.
8. Lawn SD (2004). "AIDS in Africa: the impact of coinfections on the pathogenesis of HIV-1 infection". *J. Infect. Dis.* 48 (1): 1–12.
9. Buchbinder S P, Katz M H, Hessel N A, O'Malley P M, Holmberg S D (1994). "Long-term HIV-1 infection without immunologic progression". *AIDS* 8 (8): 1123–8.
10. "Time from HIV-1 seroconversion to AIDS and death before widespread use of highly active antiretroviral therapy: a collaborative re-analysis. Collaborative Group on AIDS Incubation and HIV Survival including the CASCADE EU Concerted Action. Concerted Action on Seroconversion to AIDS and Death in Europe". *Lancet* 355 (9210): 1131–7. April 2000.
11. Schneider M F, Gange S J, Williams C M, Anastos K, Greenblatt R M, Kingsley L, Detels R, Munoz A (2005). "Patterns of the hazard of death after AIDS through the evolution of antiretroviral therapy: 1984–2004". *AIDS* 19 (17): 2009–18.
12. Morgan D, Mahe C, Mayanja B, Okongo J M, Lubega R, Whitworth J A (2002). "HIV-1 infection in rural Africa: is there a difference in median time to AIDS and survival compared with that in industrialized countries?". *AIDS* 16 (4): 597–632.