



A CROSS-SECTIONAL STUDY ON EMOTIONAL AND BEHAVIORAL DISTURBANCES IN SCHOOL GOING HIV POSITIVE CHILDREN ATTENDING HIV CLINIC

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ABSTRACT

To study the emotional and behavioral disturbances (EBD) in school going HIV positive children attending HIV center in a tertiary care hospital. This cross-sectional study was conducted on 258 HIV infected children between 6 and 16 years of age, 200 were on Anti-retroviral therapy (ART) and 58 were not on ART. They were evaluated for EBD by using Pictorial Pediatric Symptom Checklist (PPSC) screening tool. A cut-off score of 28 was taken as significant for detecting early EBD. The prevalence of EBD in our study is 11.2%. Demographic and disease related profile were assessed for correlation with EBD. Type of family ($p = 0.023$), school attendance ($p = 0.034$), school performance ($p = 0.045$), and CD4 count ($p = 0.015$) were detected to have significant association with early manifestation of EBD in the study group. HIV positive children who have low CD4 count, poor school attendance, and performance are at a higher risk of being detected with EBD. Screening with PPSC to identify EBD in HIV positive children attending HIV clinic in a hospital setting could help in early diagnosis and management.

KEYWORDS : Emotional and behavioral disturbance (EBD), HIV positive children Anti-retroviral therapy (ART).

INTRODUCTION

The total number of people living with HIV in India is estimated at 21.17 lakhs. Children (<15 years) account for 6.54%. Too often many HIV infected children, and their families live in shame associated with HIV/AIDS. The diagnosis is hidden from relatives and disease not discussed. It continuously poses physical, psychological and social challenges apart from the inherent problems of the disease per se and these children are at increased risk for emotional and behavioral disturbances (EBD). Emotional and behavioral problems in CLHIV predominantly manifest as attention deficit, hyperactivity, depression, anxiety, adjustment disorder, and violent behaviour. With the improving availability of triple ART, disease prognosis has dramatically improved and these children are surviving into adolescence and adulthood. However, they are at particular risk for psychological disturbance due to both the direct effects of HIV infection on brain and indirect effects related to coping with the range of medical, psychological, and social stresses associated with HIV thus calling for the development of psychological support and treatment services. The available studies have used behaviour checklist indices which require specific training in psychology. Primary care providers and pediatricians do not receive adequate training to assess psychosocial problems

MATERIAL AND METHODS

This was a cross-sectional analytical study conducted at the HIV center of a tertiary care hospital. After receiving ethical clearance from the Institutional Ethical Committee, 258 children between 6 and 16 years of age, who were known cases of HIV/AIDS, status known for at least 6 months and attending the HIV clinic were included in the study. Children with any physical, mental handicap or CNS disorders were excluded from the study. Informed consent was taken from the care taker before including subjects in the study. Assuming a general prevalence of psychiatric problems in India (6–15%), a higher anticipated prevalence in HIV children was arbitrarily taken to be 50%. Considering an error of 5% with 95% level of confidence; a minimum sample size of 197 was required for the study from the defined study population. Data from selected subjects was collected, on a predefined proforma. PPSC was used for assessment of behavioral and emotional disorders. All parents or primary caregivers were asked to complete a PPSC, a set of 35 questions with answers rated as "never," "sometimes," "often" with corresponding scores 0, 1, and 2, respectively. These questions were explained to the responders in the language they understood and their responses noted. The total score was calculated by adding together the score for each of the 35 questions. A cut-off score of 28 or higher was taken to indicate EBD. 8 Children detected to have EBD were referred to psychiatrist for further evaluation. The primary objective of this study was to detect prevalence of EBD in school going HIV positive children attending HIV clinic in correlation to duration of the disease, age, sex, and family income of the patient. It was planned to assess parameters associated with early detection of

EBD as secondary outcome, therefore, subgroup analysis was done to correlate other parameters like disclosure of HIV status, stage of disease (HIV), CD4 count, school attendance (regular >60%, irregular <60% in last 6 months) and academic performance (based on school records – average 50–74%, above average >75%, and below average <50%), HIV status of father and mother and type of family.

RESULTS

Majority of the subjects were in the agegroup of 11–15 years (56%), living in nuclear family (73%), attending regular school, with World Health Organization (WHO) Clinical Stage I HIV disease and 72% were on ART. As per the protocol of the clinic, children less than 8 years were excluded from disclosure of HIV and among the subjects >8 years of age ($n = 219$), only 38% of children were aware of their HIV status at the time of interview. Prevalence of EBD in our study group was 11.2%. Among them, prevalence of EBD in children on ART was 12% and not on ART was 8.6%. Among the various parameters, type of family ($p = 0.023$), school attendance ($p = 0.034$), school performance ($p = 0.045$), and CD4 count ($p = 0.015$) were detected to have significant association with early manifestation of EBD in the study group. Other parameters like disclosure of HIV status, stage of disease, and status of parents did not have significant association with early manifestation of EBD.

DISCUSSION

The prevalence of EBD in our study was 11.2%. Grover et al. reported a prevalence of 80.7% in their study group against a background prevalence of 18.2% in general population. High prevalence of EBD in their study was attributed to disturbed family environment of the child. Denise et al., in their study on long-term outcome among HIV infected children reported an incidence of 6.17 psychiatric cases per 1000 person-years. This was significantly higher than the incidence of 1.70 cases per 1000 person-years in the general pediatric population. It was also seen that the knowledge of HIV seropositivity status was significantly associated with an increased risk of psychiatric hospitalization. In contrast, a study done at Atlanta reported an EBD prevalence of 25%, where an increased access to multidisciplinary services was thought to contribute to low prevalence. In a recent multicenter prospective study done by Gadow et al. in 2010, participants were recruited from 29 Pediatric AIDS Clinical Trial Group in the United States and Puerto Rico, 27% children in the age group 6–17 years were reported to have psychiatric problems. A higher prevalence of psychological morbidity of 40–46% has been reported in a study by Mendoza et al. in HIV infected children not on ART in the age group 2–8 years. This study attributed low socioeconomic status, caregiver education, medical status, and child neglect as the likely causes for the high prevalence of behavioral problems in these children. Our study was done on a population of children in the age group (6–16 years) which was similar to Bachnans et al. Thirty percent of children in our study were of younger age group (<10 years). Around

62% of CLHIV, more than 8 years age, were not aware of their disease status and 83% of total subjects were in WHO Stage I, hence less symptomatic. Most of the children in our study were in the early stages of disease; were being followed up at a large HIV clinic as a closed group along with a psychological counselor. This represents the ideal method of institutional follow up of HIV positive cases. Disease severity in terms of low CD4 count has a significant association with early detection of EBD. The median CD4 count in our study was 715 cells/mm³; children with low CD4 count <500 cells/mm³ are more likely to develop EBD as compared to children with CD4 count >500 cells/mm³ ($p = 0.015$). Our study also found that HIV positive children who were living with their parents ($p = 0.023$), attending school regularly with more than 60% school attendance per month ($p = 0.034$) and had average (more than 50% marks) or above average school performance (more than 75% marks) were significantly less likely to develop EBD ($p = 0.045$).

CONCLUSION

HIV positive children attending the HIV clinic, who have low CD4 count, have a poor school attendance and scholastic performance, are at a higher risk of developing EBD. Based on our result of 11.2% prevalence of EBD in school going CLHIV, we recommend that it must be routinely assessed for as a part of holistic treatment of HIV positive children.

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