

Quality of Life in Symptomatic HIV Infected Children

MOHIT GUPTA, SANJIV NANDA AND JAYA SHANKAR KAUSHIK

From the Department of Pediatrics, Pt B D Sharma Postgraduate Institute of Medical Sciences, Rohtak, Haryana, India.

Correspondence to:

Dr Sanjiv Nanda, Professor, Department of Pediatrics, Pt B D Sharma Postgraduate Institute of Medical Sciences, Rohtak 124 001, Haryana, India.

drsanjivnanda@gmail.com

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We conducted a case control study to compare the quality of life (QOL) in 40 cases of HIV infected children and 40 demographically matched controls with other chronic ailments at a referral hospital in Northern India. Quality of life among HIV infected children was significantly better in psychosocial ($P=0.008$), emotional ($P=0.001$) and school ($P=0.039$) functioning. Factors including age ($P=0.07$), gender ($P=0.44$), socioeconomic status ($P=0.99$), clinical ($P=0.18$) and immunological staging ($P=0.91$) of HIV infection did not significantly influence QOL scores. Hence, quality of life in HIV infected children of North India was better than those suffering from other childhood chronic illness.

Keywords: India, Quality of life, Socioeconomic status.

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HIV infection among children accounts for 3.5% of HIV infected population in India [1]. HIV infection in children is a chronic illness with effect on physical, emotional and social well-being. There is, however paucity of information on assessment of quality of life among HIV infected Indian children [2,3]. The present study was designed to assess the quality of life (QOL) among HIV infected children when compared to children with other chronic diseases and to determine the influence of demographic and clinical factors on quality of life among HIV infected children.

METHODS

This cross-sectional study was conducted between May 2011 to December 2012. Forty HIV infected children aged 2-18 years attending antiretroviral treatment (ART) centre were included. Forty age- and gender-matched children suffering from other chronic ailments admitted in pediatric ward during the study period served as controls. Asymptomatic HIV infected children and those on ART for less than 2 months were excluded. Quality of life was assessed using Pediatric quality of life inventory (PedsQL 4.0) [4]. The scale was administered by a single resident under supervision. The instrument was translated by professional translators in Hindi and was piloted on 10 parents prior to initiation of the study. It has two components: Child self report (children > 5 years) and Parent proxy report.

The tool assesses the quality of life in five domains: physical functioning (8 items), psychosocial functioning (sum of emotional, social and school functioning),

emotional functioning (5 items), social functioning (5 items) and school (5 items) functioning. The PedsQL scores range from 0 to 100 points with higher scores predicting better quality of life. Baseline demographic factors including age, gender and kuppuswamy's socioeconomic status of the family were collected [5]. Clinical and immunological staging of HIV infection as per World Health Organization (WHO) guidelines was recorded among the cases [6]. Clinical diagnosis and duration of symptoms of control subjects were also recorded.

The Mean QOL scores were compared among the cases and controls and also among various demographic and clinical variables using a unpaired t test and analysis of variance (ANOVA). All tests were two tailed and P value of less than 0.05 was considered statistically significant.

RESULTS

The mean (SD) age of cases was 8.98 (3.49) years and 70% were males. Diagnosis of children in the control group ($n=40$) were thalassemia, in 18(45%) epilepsy in 10 (25%), nephrotic syndrome in 7 (17.5%) and one case each of celiac disease, leukemia, chronic liver disease, rheumatic heart disease and juvenile rheumatoid arthritis.

Majority belonged to lower socioeconomic status [23 (57.5%)], seven (17.5%) were orphans, one child above 5 years of age did not attend school, 38 (95%) had acquired infection by vertical transmission and were on ART for median (IQR) duration of 16.5 (7, 48.75) months. Clinical staging of cases at time of assessment were as follows: stage 1, 5 (12.5%); stage 2, 16 (40%), stage 3, 12

(30%) and stage 4, 7 (17.5%). Similarly, immunological staging were: not significant 2 (5%), mild 3 (7.5%), advanced 3 (7.5%) and severe 32 (80%).

In accordance with the child self-report, quality of life among HIV infected children was better compared to controls with significantly better scores in the psychosocial ($P=0.008$), emotional ($P=0.001$) and school ($P=0.039$) functioning among the former. Similarly, a parental proxy report on perceived quality of life of their HIV infected children was better than controls with significant difference in emotional functioning domain ($P=0.038$) (**Table I**).

Demographic factors did not significantly influence the total QOL scores among HIV infected children (**Table II**). In subgroup analysis, it was observed that children with milder clinical stage had significantly better quality of life scores in physical functioning domain ($P=0.021$). Similarly, younger aged children performed better QOL scores than their older counterparts in physical functioning domain ($P=0.014$).

DISCUSSION

The present study highlights a better quality of life in HIV infected children especially in psychosocial functioning as compared to other childhood chronic illness. We believe the study provides a further insight into this aspect of care of HIV infected children in the context of developing country.

HIV infection not only affects physical well-being but also compromise emotional and social well-being [7-10].

TABLE I QUALITY OF LIFE SCORES IN CASES AND CONTROLS

	Cases		Controls	
	n	Mean (SD)	n	Mean (SD)
<i>Self report functioning</i>				
Physical	35	80.80 (10.63)	36	74.54 (15.83)
Emotional*	35	93.69 (10.11)	36	84.96 (11.58)
Social	35	91 (12.47)	36	90.42 (11.42)
School*	34	82.94 (10.45)	36	76.25 (15.55)
Psychosocial*	35	89.31 (8.39)	36	83.38 (8.52)
<i>Proxy report functioning</i>				
Physical	40	90.16 (12.63)	40	83.98 (18.86)
Emotional*	40	81.63 (6.14)	40	76.75 (13.18)
Social	40	91.88 (11.70)	40	91.13 (11.01)
School	35	80.43 (12.97)	36	77.22 (13.70)
Psychosocial	40	85.16 (7.85)	40	82.10 (9.04)
Total score scale*	40	87.05 (7.98)	40	82.45 (9.98)

* $P < 0.05$

TABLE II FACTORS AFFECTING QUALITY OF LIFE AMONG CASES (N=40)

Characteristics	Total QOL scores [Mean (SD)]
<i>Age</i>	
2-4 yrs	91.98 (1.91)
5-7 yrs	89.13 (6.39)
8-12 yrs	82.64 (10.94)
13-18 yrs	82.14 (8.61)
<i>Gender</i>	
Male	85.15 (8.7)
Female	83.19 (11.22)
<i>Socioeconomic status</i>	
Upper	86.55 (7.13)
Upper middle	87.52 (10.39)
Lower middle	87.46 (7.53)
Upper lower	86.39 (9.23)
Lower lower	86.74 (8.19)
<i>Parental living status</i>	
Both alive	85.64 (7.27)
One expired	89.89 (6.86)
Both expired	81.98 (10.52)
<i>WHO clinical stage</i>	
Stage 1	91.09 (2.51)
Stage 2	85.95 (7.89)
Stage 3	89.24 (8.61)
Stage 4	82.06 (9.0)
<i>Immunological staging</i>	
No immunosuppression	83.18 (9.11)
Mild immunosuppression	86.52 (12.73)
Advanced immunosuppression	88.79 (6.09)
Severe immunosuppression	86.95 (8.15)

P value > 0.05 for all factors

In addition, school dropouts and school absenteeism are perceived as a major handicap to care of chronic childhood illness like HIV in India [11]. In the present study, performance on emotional, social and psychosocial functioning as per child self-report was interestingly better than those with other chronic ailments. However, Indian studies have demonstrated significantly better scores on physical functioning domain among HIV infected children as compared to emotional, social and school functioning [2,3]. Although, parents of HIV infected perceive significantly lower scores in emotional functioning as compared to parents of uninfected children [12].

WHAT THIS STUDY ADDS?

- Quality of life of symptomatic HIV infected children was better than controls in Rohtak district of Haryana.

We believe the emotional and social components of quality of life largely depend on ethnic origin, local cultural and societal practices. Indian society is largely composed of children who hail from middle socioeconomic status, living in a joint family, a larger number of siblings as compared to their Western counterparts. In India, HIV infected children are largely supported by governmental and non-governmental organizations with access to free supply of drugs. This could probably influence better psychosocial scores when compared to other chronic ailments.

Although male gender and lower socioeconomic status contributed to almost two third of our enrolled cases, interestingly, our study did not find any significant influence of these factors on quality of life. In addition, parental living status also did not influence the overall quality of life in HIV infected children. It has been observed that children living with grandparents and parents who spent more hours with their children have performed better on emotional and psychosocial well-being [14]. Similarly, clinical and immunological staging also did not contribute to effect on quality of life scores. The lack of effect could be the result of small sample size, acknowledged as a limitation of the study.

To conclude, the present study shows overall quality of life in HIV infected children was better when compared to other chronic illness of childhood and that demographic and clinical and immunological severity did not affect the quality of life. However, studies with larger sample size could provide a further insight into factors affecting quality of life in HIV infected children in India.

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