Effect of Lipodystrophy on Quality of life of HIV/AIDS patients: A cross sectional study in South India

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Research Article

Abstract: **Background:** Introduction of ART has initially improved the quality of life (QoL) of HIV positive patients, however body fat redistribution and metabolic disorders associated with long-term ART use may attenuate this improvement. As access to treatment improves in India, the disfiguring nature of lipodystrophy (peripheral atrophy and/or central adiposity) may deter treatment adherence and decrease QoL. **Objective:** To study the relation between lipodystrophy and QoL in ART-treated HIV+ patients. **Methodology:** The study was conducted in January 2012 to August 2012. This cross sectional study was done in 1000 HIV/AIDS patients out of which 255 had lipodystrophy at ART centre K.R Hospital, Mysore. WHO-QOL-Brief a summarized quality of life questionnaire was used to assess the Quality of life. Physical examination was done to assess lipodystrophy. Statistical analysis was done using SYSTAT 13 software. To test the significance, t test was applied. **Results:** Out of 255 patients, who had lipodystrophy, 163 of them were male and 92 of them were females. Facial atrophy was more common among males and abdominal enlargement was found more commonly associated with females. The Quality of life score was found significantly less among HIV patients with lipodystrophy than those without. However CD4 count was found to be significantly higher in patients with lipodystrophy than those without. **Conclusion:** Body fat alterations negatively affect quality of life. These symptoms may result in stigmatization and marginalization and adversely affect ART adherence and treatment initiatives. Efforts to evaluate self-perceived body fat changes may improve patient's wellbeing, ART adherence and treatment outcomes can contribute towards stability in quality of life continuum.

Key words: HIV, ART, Quality of Life, Lipodystrophy and CD4.

Introduction

The morphological signs of lipodystrophy were first described approximately two years after the introduction of protease inhibitors (PIs)[1]. However, the introduction of PIs coincided with the inclusion of a second nucleoside reverse transcriptase inhibitor (NRTI), particularly Stavudine (d4T), into treatment regimens. It now appears that certain fatty tissue abnormalities may be independently associated with this older class of antiretroviral agents[2]. In addition, it has been reported that poor compliance with antiretroviral therapy can be strongly associated with an increased risk of lipodystrophy occurrence[3]. Symptoms of lipodystrophy include adipose tissue hypertrophy with central fat distribution, fat accumulation in the abdomen, chest and viscera, emergence of a cervical curvature called "buffalo hump", and loss of adipose tissue in the face, buttocks and upper and lower limbs[4]. Changes in body shape can be extremely disturbing in terms of psychological welfare affecting the quality of life and enhancing the stigma of the disease[5]. Both lipoatrophy and lipoaccumulation may be present simultaneously in the same individual. It is instructive to understand that facial lipoatrophy is the most stigmatising feature of HIV-related lipodystrophy, as the face is a part of the body not usually masked by clothes and is perceived by many as an expression of our health. Few studies have addressed QoL concerns in HIV-infected patients with lipodystrophy and its impact has not been definitively established. Aim of our study was to see the effect of lipodystrophy on QoL of HIV/AIDS patients.

Material and Methods

This study was conducted at the ART centre of a tertiary care hospital in Mysore, Karnataka. It was a cross sectional study conducted between January 2012 to August 2012. All HIV/AIDS patients who came at the ART center during the study period were included in the study. All patients who were above 18 years with no

severe psychiatric or cognitive problems and who gave consent were included in the study.

Approval of institutional Ethical committee was obtained. Permission was also obtained from KSAPS (Karnataka state AIDS prevention society), Bangalore to carry out this study. For calculating QoL, WHOQOL-BREF instrument was used. For lipodystrophy physical examination was done.

Statistical Analysis

Data thus obtained was coded and entered into Microsoft excel worksheet. This was analyzed using SYSTAT 13 version. To find out the association of QoL with lipodystrophy t- test was applied. The statistical significance was evaluated at 5% level of significance.

Results

In the study total 1000 patients were included, 545 were male and 455 were female, 60.4% of patients were married, 65.1% were from nuclear family, 33.3% were illiterate and 54.9% belonged to lower socio economic status. The sociodemographic profile of the study subjects have been shown in the table 1. Out of 1000 HIV/AIDS patients selected for the study 255 patients had lipodystrophy and out of 255,162 were male and 93 were females.(Table 2). It is seen in the study that among males lipodystrophy of face was more common whereas in female it was abdominal enlargement more common. Among the 255 patients with clinical evidence of HIV-associated lipodystrophy, 134 (52.5%) had evidence of lipoatrophy, 121 (47.4%) had evidence of lipohypertrophy (Table 3). Patients without lipodystrophy had significantly better QoL score than patients with lipodystrophy, however when CD4 was compared in two group it was found that patients with lipodystrophy had significantly higher CD4 count than patients without lipodystrophy.(Table 4)

Table 1: Sociodemographic profile of study subjects

Sl.No	Profile	No.(%)
1	**Total no. of patients**	1000(100)
	Male	545(54.5)
	Female	455(45.5)
2	**Marital Status**	
	Married	604(60.4)
	Others	396(39.6)
3	**Type of family**	
	Nuclear	651(65.1)
	Joint	349(34.9)
4	**Education**	
	Graduate	39(3.9)
	Intermediate	102(10.2)
	High school	278(27.8)
	Middle school	153(15.3)
	Primary school	94(9.4)
	Illiterate	333(33.3)
5	**Employment status**	
	Yes	753(75.3)
	No	247(24.7)
6	**Residence**	
	Rural	487(48.7)
	Urban	514(51.4)
7	**Socio- Economic Status**	
	Class I	24(2.4)
	Class II	137(13.7)
	Class III	290(29)
	Class IV	435(43.5)
	Class V	114(11.4)

Table 2: Distribution of patients with lipodystrophy according to sex

Sl.No	Lipodystrophy	Male	Female	Total
1	Yes	162	93	255
2	No	406	339	745

Table 3: Distribution of patients according to Major type of Lipodystrophy

Sl.No	Type of Lipodystrophy	Male	Female	Total	Percentage
1	Face thinning	110	5	115	45.0
2	Buffalo hump	27	9	36	14.2
3	Breast enlargement	9	23	32	12.6
4	Abdominal enlargement	5	45	50	19.7
5	Thinning of arms	5	1	6	2.3
6	Thinning of legs	5	5	10	3.9
7	Reduction of buttocks	1	5	6	2.3
	Total	162	93	255	100

Table 4: Quality of life and mean CD4 count of patients with HIV and HIV with Lipodystrophy

Parameter	Status	No.	Mean ±S.D	p* value
Quality of life	HIV without Lipodystrophy	745	52.5±8.57	p<0.05
	HIV with Lipodystrophy	255	48.7±8.36	
Mean CD4 count	HIV without Lipodystrophy	745	330.6+197.25	P<0.05
	HIV with Lipodystrophy	255	519.5+227.94	
p<0.05 is significant				

Discussion

Our findings indicate that ART-treated HIV+ patients with lipodystrophy experienced lower quality of life than their HIV-infected counterparts with no lipodystrophy. Although HIV+ patients with body changes had more favourable immunologic outcomes of higher CD4 counts, and were probably on treatment for a significantly longer duration, they experienced more psychosocial impairment of quality of life. Other reports have shown that quality of life in ART-treated HIV patients deteriorate due to the effects of body changes[6]. Subsequently, clinical and treatment of HIV such as longer use of ART and higher CD4 counts, which predicts development of body fat alterations, appears also to be associated with quality of life in HIV+ patients. Studies have demonstrated evidence for adverse effects of morphologic changes on body image and impairment of psychological and social relationships in HIV patients receiving ART[7]. It is seen in other studies that HIV+ patients with lipodystrophy experience poor quality of life, due to forced disclosure of HIV+ diagnosis, stigmatization and isolation[8,9]. Therefore, body fat changes in ART-treated HIV+ patients may result in negative changes in self esteem, interpersonal relationships, and raise questions regarding the overall benefits of HIV treatment inpatients. Others have shown that although ART was keeping HIV+ patients alive, there was often tension between the desire for life sustaining treatment and optimal quality of life free from failure to conceal HIV sero-status and normal social interactions [10]. ART and HIV-associated morphologic changes are as stigmatizing as the wasting and skin lesions in the earlier years of the disease[11], and some of the affected individuals have described these changes as the 'Kaposi's sarcoma' of the 21st century[12]. The severity of body changes affecting ART-treated HIV+ patients may compound the existing stigma and discrimination in HIV patients[13]. As initiatives to improve wider distribution of ART in India progress, the need to address the associated problems of stigma becomes increasingly important. Although the introduction of ART has improved the quality of life of HIV+ patients by reducing HIV-related co-morbidities, the psychological and social consequences of chronic infection with HIV and body fat redistribution may lessen this positive impact. Therefore, treatment initiatives need to further enforce monitoring of the effects of HIV and ART resulting in lipodystrophy in patients, as the net benefit on the overall quality of life is considered to be a balance between decreased morbidity rates and the psycho-social symptoms of anxiety, depression and impaired self esteem.

Conclusion

In conclusion, although the benefits of antiretroviral therapy cannot be underestimated, the psychological and social impact of the associated body fat changes cannot be ignored. Equally important to HIV treatment initiatives is to prioritize effective monitoring methods of HIV and ART associated psychological and social consequences to maintain high levels of adherence. Effective and appropriate treatment programs need to adapt a more protracted approach, which embraces evaluation of self perceived body changes and their determinants to improve provided care. Patient-centred care approach in which patients are included in therapeutic decisions and paying attention to patients perceptions of the effects of ART, may contribute towards greater adherence to proposed interventions and develop a more stable quality of life continuum over time. An assessment of quality of life is integral to efficient treatment outcomes to evaluate long-term strategies that optimize the durability of response to antiretroviral therapy in India.

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