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Health and Nutritional Status of HIV Women Attending Tertiary Care Center in South India - A Cross Sectional Study

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Abstract

Background: *The majority of the HIV infected people live in resource poor countries of Africa and Asia where food insecurity is widespread and the diagnosis of HIV is often made only in the advanced stage. Malnutrition has been shown to be an important co-morbid condition, as these populations are vulnerable to high prevalence of food insecurity. There are only a few studies available on nutritional deficiencies in symptomatic and asymptomatic HIV infected Adults in the Indian scenario. The objective of the study was to assess the nutritional status of women patients suffering for HIV and who were attending ART centre in a Tertiary care hospital.*

Methods: *This cross-sectional study was conducted during the period October 2008 to April 2009. One hundred and ten HIV positive female patients age group of 18-45 years attending antiretroviral therapy centre (ART) in a Tertiary care hospital, south India. We measured Weight, height, general examination, urine routine and blood investigations like hemoglobin and CD4/CD8 count. In the History we have enquired about appetite, sleep, duration of illness and treatment and follow up. The data were classified and tabulated. The results were expressed in terms of ranges percentages, means, median and standard deviation.*

Results: *The mean age of the study population was 29.5±5.5 years and more than half 61/110 (55.4%) of the subjects were below secondary level of education. 70/110 (63.4%) were working women, among them 26/110 (23.6%) were either widow or separated. The mean number of children and adults in the family were 2.32± 1.05 and 1.31±1.37 respectively. In 15 (13.6%) opportunistic infection was tuberculosis. The other cause includes chronic dermatitis 27(24.5%) and oral candidiasis 48 (43.6%). These patients are taking (58.52% of RDA) in proteins, (63.6% of RDA) carbohydrates, (96.2% of RDA) fats a rough estimate by 24 hr recall method.*

Conclusion: *Majority of women suffering with anemia and malnutrion with lower social economic background. Therefore nutritional counseling, education, family support will play a major role in management of malnutrition and HIV disease progression.*

Keywords: *HIV infection, AIDS, Anemia, Malnutrition*

INTRODUCTION

In India there were 2.89 million people living with HIV infection the UNAIDS (2014) statement estimates. [1] The majority of the HIV infected people live in resource poor countries of Africa and Asia where food insecurity is widespread and the diagnosis of HIV is often made only in the advanced stage. [2] Malnutrition has been shown to be an important co-morbid condition, as these populations are vulnerable to high prevalence of food insecurity. [3] Malnutrition has been one of the most common hallmarks of HIV disease for years. It is thought to play a synergistic role in immunosuppressant initiated by HIV and has been proposed to be an independent risk factor for HIV disease progression. [4] HIV infected adults in India have higher rates of malnutrition, anaemia and hypo-albuminemia compared with HIV uninfected individuals, despite similar caloric intake. [5-6] While it is known that protein energy malnutrition is the commonest manifestation of HIV in India.[7-8] There are only a few studies available on nutritional deficiencies in symptom-matic and asymptomatic HIV infected Adults in the Indian scenario. It is also important to know the baseline nutritional status of the HIV infected individuals before supplementation may be planned. It is evident that the relation between nutritional status and quality of life still remains to be unfolded. Therefore the objective of the study was to assess the nutritional status of HIV women attending ART centre in a tertiary care hospital.

METHOD

This cross-sectional study was conducted during the period October 2008 to April 2009. one hundred and ten HIV positive female patients attending antiretroviral therapy centre (ART) in Kurnool Medical College & Hospital centre, Kurnool were studied. The participants were in the age group of 18-45 years. Institutional Ethical Committee approved the study protocol. A written consent was taken from each of the subjects before participating in the study and they were assured of complete confidentiality. The data was collected using a questionnaire which includes age, weight, height, demographic parameters, appetite and sleep, duration of illness, CD4 count, hemoglobin, urine examination and treatment. Information regarding opportunistic infection and chronic illness was collected from the case history. Daily dietary intake was calculated by 24 hour recall method with the help of cups, spoons, and glasses which were standardized with commonly consumed recipes. Standardized models of chapatti, rice, fruits, and snacks items were used for accurate data. Dietary pattern was collected by food frequency questionnaire. Energy and nutrient intakes were derived using the Nutritive value of Indian foods. [9] Food habits and quality of food was categorized as per the standard Indian diet and compared with available literature. BMI was calculated from the height and weight using the following formula: BMI = Weight (kg) / Height ^{2} (m). HIV RNA viral load (IU/ml) was measured using real-time quantitative polymerase chain reaction (RT-PCR) assay CD4

and CD8 cell counts (cells/µl) were determined using BD FACS flow cytometer.

STATISTICAL ANALYSIS

The data was tabulated. The results were expressed in terms of percentages, means, and standard deviation.

RESULTS

The mean age of the study population was 29.5±5.5 years and more than half 61/110 (55.4%) of the subjects were below secondary level of education. 70/110 (63.4%) were working women, among them 26/110 (23.6%) were either widow or separated. The mean number of children and adults in the family were 2.32± 1.05 and 1.31±1.37 respectively. In 15 (13.6%) opportunistic infection was tuberculosis. The other cause includes chronic dermatitis 27(24.5%) and oral candidiasis 48 (43.6%). These patients are taking (58.52% of RDA) in proteins, (63.6% of RDA) carbohydrates, (96.2% of RDA) fats a rough estimate by 24 hr recall method.

Table -1- Clinical characteristics of HIV woman

Clinical parameters	Total (n = 110)
Mean age - years	29.5±5.5
BMI - kg/m^2	18.30±2.2
Primary school education	65
Secondary school education	39
10+2 & above	06
Married	87
Widowed/separated	23
Duration of illness (in months)	19.84±15.36
Duration of ART	10.32±9.42
Hemoglobin	9±1.3
CD4 count	232±157.23
CD4/CD8	0.58±0.69
Opportunistic infections	
Tuberculosis	15
Dermatitis	27
Oral candidiasis	48
Not specified	20
Nutritive values as compared to RDA Mean ± SD	
Energy (kcal)	1613.48 ± 242.1 (RDA-2425) (33.4%)
Carbohydrates (g)	310.25 ± 24.23 (RDA-330) (63.6%)
Protein (g)	38.42 ± 11.7 (RDA-60) (58.52%)
Total fat (g)	19.22 ± 8.2 (RDA-20) (96.2%)

DISCUSSION

The nutritional status will influence very much all stages of HIV progression, co-infection and recovery.[10-11] There was 67% HIV positive patients were suffering from protein energy malnutrion (PEM) in Rajasthan, study conducted by Dutt et al.[12] Higher income and education lead to better coping strategies and since the study population was a representation of lower income group and majority of the women were below secondary level of education, the coping strategy was not good enough. PEM is common in HIV patients may be due to lack of appropriate counseling of the patients. [13] Nearly one fourth of total study population was widowed and separated which indicated the heavy responsibilities that these women had to bear alone without any support apart from their HIV positive status. In case of HIV, nutrition is an important factor which affects quality of life. Better nutrition is one of the key factors which helps in delaying AIDS in an HIV infected individual, thus leads to a better quality of life. This was evident by the correlation of nutritional status with quality of life. [14] In our study data showed that energy intake was significantly lower than the recommended intake in HIV infected individuals and efforts should be taken to ensure that HIV-infected individuals have access to high-quality, nutritious food choices that promote optimal dietary patterns supported by Ravinder Kaur Sachdeva et al [15] Thus the major goal of nutritional management is to intervene early and preserve lean body weight to prevent wasting but data suggest that depletion of nutrients affects the ability of the body to mount and sustain an immune response. [16-17]

CONCLUSION

It is obvious from the outcome of the present study found that patients with HIV disease are malnourished and anemic. Particularly women to be considered at risk for malnutrition and therefore nutritional counseling, education, family support will play a major role in management of malnutrition and in turn disease progression.

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CONFLICT OF INTEREST: NONE

REFERENCES

1. National AIDS Control Organization. Technical report: India HIV estimates. New Delhi: National Institute of Medial Statistics (ICMR), NACO, DAC, Ministry of Health & Family Welfare; 2012.
2. Report on the global AIDS epidemic 2008. Available from: http://www.unaids.org/en/ KnowledgeCentre/HIV data/global Report/ 2008/2008_Global_Report.asp, accessed on May 4, 2009.
3. Gillespie S, Greener R, Whiteside A, Whitworth J. Investigating the empirical evidence for understanding vulnerability and the associations between poverty, HIV

infection and AIDS Impact. AIDS 2007; 21 (Suppl. 7) : S1.4

4. Smith, R.A., 1998. Encyclopedia of AIDS: A Social,Political, Cultural and Scientific Record of the HIV Epidemic. 2nd Edn., Taylor and Francis, USA., ISBN-10: 1579580076, pp: 601.
5. Swaminathan S et al Nutritional status of persons with HIV infection, persons with HIV infection and tuberculosis, and HIV-negative individuals from southern India. Clin Infect Dis 2008; 46: 946-9.
6. Wig N, Bhatt SP, Sakhuja A, Srivastava S, Agarwal S. Dietary adequacy in Asian Indians with HIV. AIDS Care 2008; 20 : 370-5.
7. Shah SR, Tullu MS, Kamat JR. Clinical profile of pediatric HIV infection from India. Arch Med Res 2005; 36: 24-31.
8. Merchant RH, Oswal JS, Bhagwat RV, Karkare J. Clinical profile of HIV infection. Indian J Pediatr 2001; 38: 239-46.
9. Gopalan C, Rama Sastri BV, Balasubramanian SC. Nutritive value of Indian foods. Hyderabad: National Institute of Nutrition, ICMR; 1971, p. 204.
10. Baum MK, Shor-Posner G, Lu Y, Rosner B, Sauberlich HE, Fletcher MA, et al. Micronutrients and HIV-1 disease progression. AIDS 1995; 9 : 1051-6.
11. Baum MK, Shor-Posner G, Zhang G, Lai H, Quesada JA, Campa A, et al. HIV-1 infection in women is associated with severe nutritional deficiencies. J Acquir Immune Defic Syndrome Human Retrovirol 1997; 16 : 272-8.
12. Dutta, K., B. Sati, D.K. Garg, S.D Purohit and A. Haag et al., 2002. Nutritional profile of HIV/AIDS patients from Raj-asthan, India. International AIDS Socity.
13. Jirathitikal, V., O. Metadilogkul and A.S. Bourinbaiar. 2004. Increased body weight and improved quality of life in AIDS patients following V-1 Immunitor administration. J. Eur. Clin. Nutr., 58: 110-115.DOI: 10.1038/sj.ejcn.1601756
14. Ananya Bhowmik et al. Nutritional Status and Quality of Life of Women with HIV/AIDS. American Journal of Infectious Diseases 8 (1): 13-18, 2012.ISSN 1553-6203
15. Ravinder Kaur Sachdeva et al. Dietary adequacy of HIV infected individuals in north India -a cross-sectional analysis. Indian J Med Res 134, December 2011, pp 967-971
16. Baum MK, Shor-Posner G, Lu Y, Rosner B, Sauberlich HE, Fletcher MA, et al. Micronutrients and HIV-1 disease progression. AIDS 1995; 9 : 1051-6.
17. Beach RS, Mantino-Atienza E, Shor-Poner G, Javier JJ,Szapocznik J, Morgan R, et al. Specific nutrient abnormalities in asymptomatic HIV infection. AIDS 1992; 6 : 701-8.