



# Overweight and obesity among HIV infected patients; a forgotten problem

Beuy Joob<sup>1\*</sup>, Viroj Wiwanitkit<sup>2</sup>

## Abstract

Body mass index (BMI) is an important anthropometric parameter in clinical medicine. In the patients with metabolic syndrome, the abnormal BMI is commonly seen. The overweight and obesity is an important health problem that is observed around the world in the present day. Nevertheless, the overweight and obesity might be a forgotten problem in some specific groups of patients. Here, is the authors' reports on the observation of BMI among 542 human immunodeficiency virus (HIV) infected patients in our medical center. Of interest, there is a high incidence of overweight and obesity among our patients. The problem of overweight and obesity is rarely mentioned in HIV medicine. Due to the good antiretroviral therapy in control of HIV, the awareness of the problem among the HIV infected patients is required in the present day

**Keywords:** Overweight, Obesity, Body mass index, Human immunodeficiency virus

**Citation:** Joob B, Wiwanitkit V. Overweight and obesity among HIV infected patients; a forgotten problem. J Renal Endocrinol. 2019;5:e03.

**Copyright** © 2019 The Author(s); Published by Nickan Research Institute. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Introduction

The nutritional problem is the common health seen around the world. Either under- or over- nutrition are not good. Anthropometry is an important clinical assessment tool for nutritional status. Of several parameters, body mass index (BMI), which is calculated by body weight in kilogram divided by square of height in meter, is an important anthropometric parameter in clinical medicine (1). The BMI assessment is easy while body weight and height are routinely measured in each visit of the patient by the physician.

The abnormal BMI is an indicator for the problem of nutrition. The abnormality can be seen in several medical disorders. In the patients with metabolic syndrome, the abnormal BMI is commonly seen. The overweight and obesity is an important health problem that is observed around the world in the present day. Nevertheless, the overweight and obesity might be a forgotten problem in some specific groups of patients. In some situations, while the under-weight is highly prevalent, there might be hidden problem of overweight. The good example is the observation on the obesity problem in some children in an area with extremely high prevalence of pediatric underweight problem (2). The similar situation might be seen in the cases of human immunodeficiency virus (HIV) infected patients.

## Objectives

Here, the authors report on the observation of BMI among Thai adult HIV infected patients in our medical center in an area that HIV infection is endemic. Of interest, there is a high incidence of overweight and obesity among our patients. The problem of overweight and obesity is rarely mentioned in HIV medicine. Due to the good antiretroviral therapy in control of HIV, the awareness of the problem among the HIV infected patients is required in the present day.

## Patients and Methods

### Study design

This study is a retrospective. The data on body weight and height of overall 542 Thai adult HIV infected patients who received HIV treatment in our medical center during 2017 were analyzed. As a routine assessment, the body weight and height of each patient are measured by standard measurement tools. For each patient, the BMI is calculated and classified according to WHO criteria. According to the criteria, the overweight is designed as a BMI greater than or equal to 25 kg/m<sup>2</sup> and obesity is designed as a BMI greater than or equal to 30 kg/m<sup>2</sup>. The prevalence of overweight and obesity is calculated and presented. The research followed the Tenets of the Declaration of Helsinki.

Received: 12 September 2018, Accepted: 7 December 2018, ePublished: 21 December 2018

<sup>1</sup>Sanitation1 Medical Academic Center, Bangkok Thailand. <sup>2</sup>Honorary professor, Dr DY Patil University, Pune India; visiting professor, Hainan Medical University, China; adjunct professor, Joseph Ayobabalola University, Nigeria; visiting professor, Faculty of Medicine, University of Nis, Serbia.

\*Corresponding Author: Beuy Joob, Email: [beuyjoob@hotmail.com](mailto:beuyjoob@hotmail.com)

**Implication for health policy/practice/research/medical education**

We studied body mass index among 542 human immunodeficiency virus (HIV) infected patients. We found a high incidence of overweight and obesity among our patients. The problem of overweight and obesity is rarely mentioned in HIV medicine.

**Statistical analysis**

The prevalence of overweight and obesity is calculated and presented. Regarding statistical analysis, descriptive statistical analysis is used where it is appropriate. The percentage is used for representing the rate.

**Results**

Of 542 patients (374 males, 168 females; age between 18 to 72 years old), 42 were overweight (7.75 %) while, 26 were obese (4.80 %) (Table 1). Classified by CD4+ count, the number of cases with overweight and obesity in each group of patient is presented in Table 2.

**Discussion**

The nutritional status among HIV infected patients is an interesting issue in clinical medicine. In fact, several problems of nutrition can be seen in the HIV infected problem. In patients with advanced HIV infected disease, the malnutrition is a common problem (3). However, in the present day, due to the improved antiretroviral therapy and nutritional care for HIV infected patients, most

**Table 1.** Demographic data of the patients and numbers of overweight and obesity

	Overweight	Obesity
<b>Sex</b>		
Male (n = 374)	30	15
Female (n = 168)	12	11
<b>Age (y)</b>		
<20	3	1
20–30	8	5
30–40	7	5
40–50	8	4
50–60	9	6
60–70	5	4
>70	2	1
<b>Antiretroviral drug</b>		
Receive (n = 28)	20	2
Not receive (n = 514)	22	24

**Table 2.** The number of cases with overweight and obesity in each group of patient classified by CD4+ count

CD4+ count	Overweight	Obesity
<200 (n = 52)	4	2
200–500 (n = 116)	8	4
>500 (n = 374)	30	19

patients can have normal life without problem similar to general non-HIV infected people. As suggested by Ruiz et al, nutritional assessment is important in management of HIV infected patients since it can help plan for nutritional care of the patients (4). Ruiz et al also suggested the use of simple tools as BMI for assessment (4).

In fact, the poor nutritional status is a common known problem in HIV infection. Nevertheless, the problem on the other side of the coin should not be forgotten. At present, the interesting issue is on the metabolic problem including to metabolic syndrome among HIV infected patients (5, 6). In the present report, the interesting high prevalence of HIV infected patients with either overweight or obesity is observable (12.55%). The problem can be seen in any subgroups of patients regardless of demographic background, basic immunological status or antiretroviral drug treatment.

**Conclusion**

This observation can imply that the overweight and obesity are existed problem in the HIV infected patients. Nevertheless, these problems are little mentioned in the literature (7-9). Most previous reports are from Western countries (7-9) where the obesity is the common problem. Nevertheless, the present report is from tropical developing countries where malnutrition is still prevalent. The similar trend of high prevalence of overweight and obesity among our patients can be seen. The new paradigm to recognize these forgotten problems among HIV infected patients is needed.

**Authors' contribution**

Both authors wrote the manuscript equally.

**Conflicts of interest**

The authors declared no competing interests.

**Ethical considerations**

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

**Funding/Support**

None.

**References**

- Kirk SF, Cramm CL, Price SL, Penney TL, Jarvie L, Power H. BMI: a vital sign for patients and health professionals. *Can Nurse*. 2009;105:25-8.
- Wiwanitkit V, Sodsri P. Underweight schoolchildren in a rural school near the Thai-Cambodian border. *Southeast Asian J Trop Med Public Health*. 2003;34:458-61.
- de Pee S, Semba RD. Role of nutrition in HIV infection: review of evidence for more effective programming in resource-limited settings. *Food Nutr Bull*. 2010;31:S313-44.
- Ruiz M, Kamerling LA. Nutritional screening tools for HIV-infected patients: implications for elderly patients. *J Int Assoc Physicians AIDS Care (Chic)*. 2010;9:362-7.
- Li Vecchi V, Maggi P, Rizzo M, Montalto G. The metabolic syndrome and HIV infection. *Curr Pharm Des*. 2014;20:4975-5003.

6. Nix LM, Tien PC. Metabolic syndrome, diabetes, and cardiovascular risk in HIV. *Curr HIV/AIDS Rep.* 2014;11:271-8.
7. Mankal PK, Kotler DP. From wasting to obesity, changes in nutritional concerns in HIV/AIDS. *Endocrinol Metab Clin North Am.* 2014;43:647-63.
8. Pourcher G, Costagliola D, Martinez V. Obesity in HIV-infected patients in France: prevalence and surgical treatment options. *J Visc Surg.* 2015;152:33-7.
9. Thompson-Paul AM, Wei SC, Mattson CL, Robertson M, Hernandez-Romieu AC, Bell TK, et al. Obesity Among HIV-Infected Adults Receiving Medical Care in the United States: Data From the Cross-Sectional Medical Monitoring Project and National Health and Nutrition Examination Survey. *Medicine (Baltimore).* 2015;94:e1081.