



REVISTA ARGENTINA DE ENDOCRINOLOGÍA Y METABOLISMO

www.elsevier.es/raem



Original research

Optimal cutoff for visceral adiposity index in a Venezuelan population: Results from the Maracaibo City Metabolic Syndrome Prevalence Study

Valmore J. Bermúdez^{a,b}, Juan Salazar^{b,*}, Roberto Añez^b, José Ramón Rivas-Ríos^b, Mervin Chávez-Castillo^b, Wheeler Torres^b, Victoria Núñez^b, José Mejías^b, Sandra Wilches-Durán^a, Marcos Cerda^a, Modesto Graterol^a, Rosemily Graterol^a, Juan Hernández^a, Carlos Garicano^a, Joselyn Rojas^{b,c}

^a Grupo de Investigación Altos Estudios de Frontera (ALEF), Universidad Simón Bolívar, Cúcuta, Colombia

^b Endocrine-Metabolic Research Center "Dr. Félix Gómez", Faculty of Medicine, School of Medicine, University of Zulia, Zulia State, Maracaibo, Venezuela

^c Division of Pulmonary and Critical Care Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, USA

ARTICLE INFO

Article history:

Received 6 June 2017

Accepted 18 July 2017

Available online xxx

Keywords:

Visceral adiposity index

Visceral obesity

Adiposity

Gender

Age

ABSTRACT

Aim: Visceral obesity is one of the most intensely researched cardiometabolic risk factors in recent years; nonetheless, its accurate assessment remains a challenge in regions where socioeconomic conditions hinder the widespread use of diagnostic methods for this purpose, such as imaging tests. In this setting, Visceral Adiposity Index (VAI) may be a useful tool. Thus, the objective of this study was to determine the VAI cutoff in adult population from Maracaibo City, Venezuela.

Methods: This is a descriptive, cross-sectional study with multi-staged sampling; 2026 subjects of both genders aged ≥ 18 years were selected from this database and had their VAI calculated. In order to determine VAI cutoffs, subsamples of metabolically healthy and sick individuals were determined, with 599 and 286 subjects, respectively. Gender-specific and general ROC curves were plotted in order to identify the most suitable cutoff according to sensitivity and specificity.

Results: Median VAI in the selected sample was 1.67 (0.97–2.78). The optimal cutoff was determined to be 1.91, with 70.3% sensitivity, 70.3% specificity [AUC = 0.777 (0.745–0.808)]. No differences were found between genders. Analysis by age revealed VAI to have greater predictive power among subjects aged < 30 years (cutoff: 1.53), 78.6% sensitivity, 72.8% specificity [AUC = 0.797 (0.709–0.884)].

* Corresponding author.

E-mail address: juanjsv18@hotmail.com (J. Salazar).

<http://dx.doi.org/10.1016/j.raem.2017.07.004>

0326-4610/© 2017 Sociedad Argentina de Endocrinología y Metabolismo. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Conclusion: We suggest a VAI cutoff of 1.9 for define dysfunctional adiposity in our population, with age being an important factor in the epidemiologic behavior of this variable, particularly in younger individuals.

© 2017 Sociedad Argentina de Endocrinología y Metabolismo. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Punto de corte para el índice de adiposidad visceral en una población venezolana: resultados del Estudio de prevalencia de síndrome metabólico de Maracaibo

R E S U M E N

Palabras clave:

Índice de adiposidad visceral
Obesidad visceral
Adiposidad
Sexo
Edad

Objetivo: La obesidad central es uno de los factores de riesgo cardiometabólicos emergente más evaluado durante los últimos años, sin embargo, su medición de forma precisa resulta un reto en aquellas poblaciones cuyas condiciones económicas dificultan la realización de métodos diagnósticos complejos, como pruebas de imagen. Por ello el objetivo de este estudio es determinar el punto de corte del índice de adiposidad visceral (VAI) en sujetos adultos de la ciudad de Maracaibo, Venezuela.

Métodos: Se seleccionó a 2.026 individuos de ambos sexos, mayores de 18 años, de la base de datos del Estudio de prevalencia de síndrome metabólico en la ciudad de Maracaibo, un estudio descriptivo, transversal, con muestreo multietápico. El VAI se calculó para cada sexo y para la estimación del punto corte se seleccionó a 599 sujetos sanos y 286 enfermos, realizándose curvas COR para identificar el mejor valor de acuerdo con la sensibilidad y la especificidad.

Resultados: El promedio de VAI en la muestra seleccionada fue 1,67 (0,97-2,78). El punto de corte fue 1,91 (70,3% de sensibilidad y 70,3% de especificidad) con AUC = 0,777 (0,745-0,808), sin diferencias en el punto de corte según sexo. En el análisis por grupos etarios la mayor capacidad predictiva fue para el grupo < 30 años con AUC = 0,797 (0,709-0,884), con un punto de corte de 1,53 (78,6% de sensibilidad y 72,8% de especificidad).

Conclusión: El punto de corte indicado para VAI en nuestra población es de 1,9; considerando la edad como un factor importante en su comportamiento, especialmente en los grupos más jóvenes.

© 2017 Sociedad Argentina de Endocrinología y Metabolismo. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Obesity is a metabolic disorder with a wide phenotypic variability and a myriad of associated conditions, whose prevalence has risen alarmingly in recent decades, especially in developed countries.¹ In 2014, the WHO estimated 13% of the worldwide adult population to be obese, with 39% being overweight.² Likewise, the Latin American Consortium of Studies on Obesity has estimated the prevalence of obesity to be around 16.1% in this region, based on reports from eight countries in South America and the Caribbean.³ Although Venezuela lacks data on the nationwide prevalence of this disease, the Maracaibo City Metabolic Syndrome Prevalence Study – based on the second most populous city – has found a 33% prevalence of obesity.⁴

The close relationship between obesity and various cardiometabolic conditions such as Type 2 Diabetes Mellitus (DM2), hypertension (HTN), hyperlipidemia, metabolic syndrome (MS) and hepatic steatosis has led to continuous research in the last decade on the concept of sick adipose

tissue.⁵ Adiposopathy is adipose tissue dysfunction found in genetically and environmentally susceptible individuals, characterized by adipocyte accumulation and hypertrophy of visceral adipose tissue (VAT), which lead to the activation of numerous molecules with proinflammatory and proatherogenic properties in response to various stimuli.⁶

Therefore, assessment of visceral obesity is key in the evaluation of cardiometabolic risk in daily clinical practice. Various methods may be used for the evaluation of body composition, ranging from simple anthropometric measurement to imaging techniques such as dual-energy X-ray absorptiometry, computerized axial tomography and magnetic resonance imaging, each with specific advantages and disadvantages.⁷

Given the need to routinely identify individuals in which central obesity may confer an increased cardiovascular risk, the visceral adiposity index (VAI) emerges as a system based on simple anthropometric measures, such as body mass index (BMI) and waist circumference (WC), in conjunction with functional parameters such as serum triacylglycerides (TAG) and high-density lipoprotein-cholesterol (HDL-C), capable of

Download English Version:

<https://daneshyari.com/en/article/8724411>

Download Persian Version:

<https://daneshyari.com/article/8724411>

[Daneshyari.com](https://daneshyari.com)