169 - ABDOMINAL CIRCUMFERENCE AS A PREDICTOR OF CARDIOVASCULAR DISEASE RISK OF ELDERLY.

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1. INTRODUCTION

The well-being is based on three pillars: physical activity, nutrition and mood. It should be understood that welfare differs from the well off, since this conception merely absence of disease, even though apparent, do not feel pain, do what you like etc.. The well-being dependent on everything that is associated with good physical health, social and mental. Thus, a person may feel well-being and be patient [1].

The World Health Organization (WHO) recommends the use of waist circumference at a cutoff of 94 cm for men and 80 cm for women, such as increased metabolic risk, few studies in northeastern Brazil assessed the appropriateness of using this indicator to the risk of developing cardiovascular disease in the Brazilian population [2].

The location of abdominal fat has a major impact on cardiovascular disease by associating with the high frequency conditions such as dyslipidemia, hypertension, insulin resistance and diabetes that favor the occurrence of cardiovascular events [3].

Although several methods can be used to characterize the distribution of adipose tissue, the most accurate methods such as computed tomography and magnetic resonance imaging are expensive and difficult to implement, so that anthropometry has been widely applied for this purpose by through the construction of anthropometric indices of good accuracy, the anthropometric measures of ease of measurement, obtained at low cost [4].

Waist circumference and waist-hip ratio are the main indicators used in the measurement of the centralized distribution of body fat assessments in individual and collective, but differences in body composition of different age and racial groups hamper the development of universal cutoff [5]. Knowledge of these cutoffs is useful in detecting the risk of developing diseases, both in nutritional surveillance and diagnostic studies in population [6]. The objective of this study is to identify the best anthropometric index of fat distribution and the best cutoff for predicting risk of dyslipidemia, since a previous study of this population allowed the identification of anthropometric markers in fat that most strongly associated to dyslipidemias, taking into account potential confounding factors [7,8]. This study aimed to use waist circumference as an indicator of risk of cardiovascular disease.

2. METHODS

Area and Population Study

The study was conducted in two locations, at first at the Health Unit Sister Hercilia Aragon (SER II), a typical health center in Fortaleza, capital of Ceará State. The area is located in the Barrio Pius XII where poor migrants from the countryside began to dwell in the early 1950s. According to the register of the Program of Family Health, the area has a total population of 20,000 people. About 90% of households have electricity, 70% access to piped water and 60% an income of less than two minimum wages. The illiteracy rate for adults is 30% in the study area, chronic diseases are hyperendemic, the other allocated to the study population consists elderly who reside in the Sacred Heart Retreat located on University Avenue in the neighborhood of Benfica which do not participate in any activity program physics.

Study design

We conducted a cross-sectional study evaluating the effectiveness of the measure of waist circumference as an predictor of cardiovascular disease in the elderly. The investigator, study participants were not masked regarding the treatment allocated. Examination was conducted before the exercise program.

Sample Size

To detect a decline in average index in a group 2.5 to 1.5 cm (standard deviation assumed to 1.5) with 90% and a significance level of 95% was estimated a required sample size of 24 participants per group. Taking into account a margin of safety and loss of follow-up included 27 subjects in each group, a total of 81 participants.

Selection of participants

The study subjects were identified and recruited in cooperation with community leaders in the area.

Inclusion criteria were: age between 60 and 85 years; Membership in the program Hyper-Day SUS; Living in Shelter Care. Exclusion criteria were: age less than 60 years, presence of systemic diseases, chronic alcoholism, mental illness. Randomization

Study participants were allocated to treatment by randomization in blocks of nine each. The code book of randomization was not accessible during the entire study for any of the researchers involved with the fieldwork.

The study involved three treatment groups:

a. Group 1: Diabetic Patients
b. Group 2: Hypertensive
c. Group 3: Idodos Shelter

Procedures and instruments for data collection

At baseline examination, all study participants were followed the steps in the following order:

1. Obtaining the prior written informed consent free and informed
2. Application of structured questionnaire regarding demographic, socioeconomic and anamnestic.
3. Anthropometric measurements for statistical analysis

After explaining the procedures of the study and obtaining written consent has been applied a semi-structured pre-tested as to demographic, socioeconomic, anamnestic and habits related degenerative diseases. Next was collected measures such as height weight and waist circumference for further statistical analysis in the laboratory of Biotechnology IFCE. Data collection

For assessing the risk of cardiovascular disease was used a tape measure appropriate for such a measure (Fischer Lylli, USA). The measure effectively provides an overview of the framework of abdominal fat in the elderly, representing a reliable picture of fat load [4, 7].

RESULTS

Demographic and socio-economic study of the population

81 individuals were included in the study. Forty-five (55.6%) were male and 36 (44.4%) were female. The mean age was 31.2 years (SD = 11.0) with a minimum age of 16 and maximum of 85 years. In terms of schooling, 17 (21.0%) were illiterate or semi-illiterate and 64 (79.0%) literate; 6 (7.4%) had completed high school. None of the participants had completed a higher grade.

Median household income was $ 317, ranging between $ 9 and $ 1500. Of the participants, 97.5% had electricity at home and 93.8% tap water.

Of the 81 individuals, 45 (55.6%) are smokers or have smoked at some point in life.

Variables and indicators in groups

To assess the comparability between the treatment groups and randomization was performed to compare the demographic and clinical data between the groups in the survey before the intervention.

Randomization to treatment groups was balanced with 27, 26 and 28 individuals per group (Table 1).

Table 1: Number of subjects randomized and examined for the following three treatment groups.

	Hiper	Diab	Abrigo	Total
Randomized Subjects	27	26	28	81
Individual in the first exams	25	24	26	75

Sex, age and number of teeth present did not vary significantly between the treatment group (Table 2).

	Hiper	Diab	Abrigo	Significância	
				Hiper vs. Abrbigo	Diab vs. Abrigo
Sexo:					
Feminino n (%)	15 (55,6%)	10 (38,5%)	11 (39,3%)		
Masculino n (%)	12 (44,4%)	16 (61,5%)	17 (60,7%)	P=0.3*	P=1.0*
Idade:					
Média (anos)	31,0	31,7	31,0		
Desvio padrão	10,9	12.8	9.6	P=1.0†	P=0.8†
Amplitude (anos)	17-63	16-85	17 – 54		

Only gender shows that there is a statistically significant difference when comparing the risk of cardiovascular events Table 3

SEXO * RISCO Crosstabulation

Count

		RISCO		
		não	sim	Total
SEXO	1,00	9	11	20
	2,00	11	49	61
Total	1	20	60	81

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,068[a]	2	,048
Continuity Correction			
Likelihood Ratio	5,850	2	,054
Linear-by-Linear Association			
N of Valid Cases	81		

a. 3 cells (50,0%) have expected count less than 5. The minimum expected count is ,25.

Regarding the anthropometric indices no statistically significant difference of medians between groups when variables such as marital status and place of residence (Table 4 and 5).

Table 4: Marital Status (1 = married and 2 = single, N = 81) Chi Square Test

EST._CIV * RISCO Crosstabulation

Count

		RISCO			
			não	sim	Total
EST._CIV	1,00		10	23	33
	2,00	1	10	37	48
Total		1	20	60	81

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,542[a]	2	,463
Continuity Correction			
Likelihood Ratio	1,889	2	,389
Linear-by-Linear Association			
N of Valid Cases	81		

a. 2 cells (33,3%) have expected count less than 5. The minimum expected count is ,41.

Table 5: Place of residence (capital and 1 = 2 = Interior, N = 81) Chi Square Test.

LOCAL * RISCO Crosstabulation

Count

		RISCO			
			não	sim	Total
LOCAL	1,00	1	16	45	62
	2,00		4	15	19
Total		1	20	60	81

DISCUSSION

In this study it was determined that the vast majority of elderly patients were at risk to develop cardiovascular disease as an indicator taking the measure of its circumference, that the great percentage is showing above the normal range. One advantage of this study in relation to other cross-sectional studies, was the inclusion of obese patients with hypertension or diabetes population allocated.

The evaluation of markers and anthropometric cut-off points in cross-sectional studies are subject to bias, the widespread knowledge that obesity and dyslipidemia are associated with each other and with cardiovascular disease. Using random aspects of a population of healthy adults or without knowledge of their dyslipidemic conditions reduces the possibility of introduction of bias.

The most favorable body mass measurement has traditionally been the weight alone or weight adjusted for height. More recently, it has been noticed that the distribution of fat is more predictive of health [8]. The combination of mass and body fat distribution is probably the best option to fill the need for clinical evaluation [1].

The abdominal circumference (AC) is a measure commonly used for central obesity. However, in 1990, it was recognized that this may be less valid as a relative measure, after weight loss, decreased the extent of the hip [2]. The WHO considers the CA as a criterion to characterize the metabolic syndrome, with a cutoff value of 80 pra 90 for women and men [1,4]. In the Brazilian population, the relationship between waist circumference also shown to be associated with risk of comorbidities. The waist circumference best reflects the content of visceral fat and also has a strong association with total body fat [5,6]. The location of fat in the abdominal region especially around the waist provides a greater risk for developing health problems [7]. Several studies show that women with a waist circumference of more than 80 inches or men with a waist over 90 inches, may have a higher risk of disease than those with smaller waist circumference due to the fact the location of fat [8].

CONCLUSION

Within the limitations of this study, we demonstrated that the measure of waist circumference above the values recommended by WHO was constant in the three study groups showed that such measures are effective in demonstrating the increased risk of developing degenerative diseases in old age.

The prevalence of higher scores was statistically different in females showing a greater risk being female in the third age for cardiovascular events.

The results indicate no direct correlation between marital status and locality in which they reside. It is expected that in the near future, other prospective studies with larger sample sizes will be conducted in order to be able to confirm these results.

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ABDOMINAL CIRCUMFERENCE AS A PREDICTOR OF CARDIOVASCULAR DISEASE RISK OF ELDERLY.

ABSTRACT

Demographic projections indicate a growing number of elderly and there is still incipient in Ceará programs aimed at improving the quality of life of this group. The monitoring program of the circle appears as an important ally for the elderly may have a better monitoring of risks arising from various diseases peculiar to increase this anthropometric index determining preventive and rehabilitation actions that aim to improve the quality of life in the reality of most survival of the population. This study aimed to identify the risk of cardiovascular disease in 3 different groups of older people by measuring waist circumference. The survey was conducted in two phases, the first consisting of a review of the literature and the second in a cross-sectional study in the application of a questionnaire adapted from Gedarni and application of the WHOQOL-100, the collection and analysis were performed at the Laboratory Biotechnology IFCE. The study sampled 81 individuals participating in the program HYPER-DAY SUS Health Center Sister Hercilia Aragon (SER II) and shelter for the elderly called the Heart Retreat, assisted by professionals from the Federal Office for Education, Science and Technology of Ceará -- IFCE. By analyzing the data could be identified that being female has a higher risk to have cardiovascular disease, but variables such as marital status and living in or on the capital have not directly correlated with increased risk of cardiovascular disease.

KEYWORDS: Abdominal circumference, Elderly, Physical activity.

ABDOMINAL CIRCONFÉRENCE COMME UN PRÉDICTEUR DE LA RISQUE DE MALADIE CARDIOVASCULAIRE DE PERSONNES ÂGÉES.

RÉSUMÉ

Les projections démographiques indiquent un nombre croissant de personnes âgées et il est encore embryonnaire dans les programmes de Ceará visant à améliorer la qualité de vie de ce groupe. Le programme de surveillance du cercle apparaît comme un allié important pour les personnes âgées mai ont un meilleur contrôle des risques découlant des diverses maladies propres à accroître la détermination de cet indice anthropométrique préventives et les actions de réhabilitation qui visent à améliorer la qualité de vie dans la réalité de la plupart des la survie de la population. Cette étude visait à identifier les risques de maladies cardio-vasculaires en 3 groupes différents de personnes âgées en mesure de la circonférence de la taille. L'enquête a été menée en deux phases, la première consistant en une revue de la littérature et la deuxième d'une coupe transversale d'étude dans l'application d'un questionnaire adapté de Gedarni et l'application des WHOQOL-100, la collecte et l'analyse ont été effectuées au Laboratoire Biotechnologie IFCE. L'étude de l'échantillon 81 personnes qui participent au programme HYPER-DAY SUS Health Center Soeur Hercilia Aragon (SER II) et des abris pour les personnes âgées appelée Retreat Heart, assistés par des professionnels de l'Office fédéral de l'Education, la Science et la Technologie de Ceará -- IFCE. En analysant les données pourraient être identifiés, que d'être une femme a un risque plus élevé d'avoir une maladie cardiovasculaire, mais des variables comme l'état matrimonial et vivant dans ou sur le capital ne sont pas directement corrélés avec un risque accru de maladie cardiovasculaire.

MOTS-CLÉS: la circonférence abdominale, personnes âgées, l'activité physique.

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CIRCUNFERENCIA ABDOMINAL COMO PREDICTOR DE LA RIESGO DE ENFERMEDAD CARDIOVASCULAR DE ADULTOS MAYORES.

RESUMEN

Las proyecciones demográficas indican un número creciente de personas de edad avanzada y no es todavía incipiente en los programas de Ceará, destinado a mejorar la calidad de vida de este grupo. El programa de monitoreo del círculo aparece

como un aliado importante para las personas mayores pueden tener un mejor control de los riesgos derivados de diversas enfermedades propias de aumento de este índice antropométrico para determinar acciones preventivas y de rehabilitación destinadas a mejorar la calidad de vida en la realidad de la mayoría de los la supervivencia de la población. Este estudio tuvo como objetivo identificar el riesgo de enfermedad cardiovascular en 3 grupos diferentes de personas de edad mediante la medición de la circunferencia de la cintura. La encuesta fue realizada en dos fases, la primera consistente en una revisión de la literatura y el segundo en una sección transversal de estudio en la aplicación de un cuestionario adaptado de Gedarni y la aplicación del WHOQOL-100, la recogida y análisis se realizaron en el Laboratorio Biotecnología IFCE. El estudio de muestras de 81 individuos que participan en el programa HYPER DÍAS SUS Centro de Salud de la hermana Hercilia Aragón (SER II) y refugio para las personas de edad llamado Retiro del Corazón, con la asistencia de profesionales de la Oficina Federal de Educación, Ciencia y Tecnología de Ceará -- IFCE. Al analizar los datos se pudo identificar que ser mujer tiene un mayor riesgo de tener enfermedades cardiovasculares, pero las variables como el estado civil y que viven en o sobre el capital no directamente relacionada con un mayor riesgo de enfermedad cardiovascular.

PALABRAS CLAVE: circunferencia abdominal, tercera edad, la actividad física.

CIRCUNFERÊNCIA ABDOMINAL COMO PREDITOR DE RISCO DE DOENCAS CARDIOVASCULARES DA TERCEIRA IDADE.

RESUMO

As projeções demográficas indicam um crescente numero de idosos e observa-se que ainda são incipientes no Ceará programas destinados a melhoria da qualidade de vida deste grupo. O programa de vigilância da circunferência surge como um importante aliado para que os idosos possam ter um melhor acompanhamento dos riscos advindos de diversas doenças peculiares ao aumento de tal índice antropométrico determinando ações preventivas e reabilitadoras que objetivam melhorar a qualidade de vida frente à realidade da maior sobrevida da população. O presente trabalho teve como objetivo identificar o risco de doenças cardiovasculares em 3 grupos distintos de idosos através da medida da circunferência abdominal. A pesquisa foi realizada em dois momentos, sendo o primeiro constituído de um levantamento da literatura e o segundo em um estudo transversal, com a aplicação do questionário adaptado de Gedarni e a aplicação do WHOQOL-100, a coleta e análise dos dados foram realizadas no Laboratório de Biotecnologia do IFCE. O estudo teve como amostra 81 idosos participantes do programa HIPER-DIA do SUS Centro de Saúde Irmã Hercília Aragão (SER II) e do abrigo de idosos denominado Recanto do Coração, assistido por profissionais do Instituto Federal de Educação, Ciência e Tecnologia do Ceará – IFCE. Através da análise dos dados foi possível identificar que ser do sexo feminino apresenta um maior risco a apresentar doenças cardiovasculares, no entanto variáveis como estado civil e viver no interior ou na capital não apresentam correlação direta com o aumento do risco de contrair doenças cardiovasculares.

PALAVRAS-CHAVE: Circunferência abdominal, Idosos, Atividade física.

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