

77 - NECK CIRCUMFERENCE AND RISK FACTORS FOR CARDIOVASCULAR DISEASE IN THE ELDERLY

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INTRODUCCION

Increased body fat and thus overweight and obesity is caused mainly by changes in lifestyle, such as physical inactivity and increased intake. Obesity is the accumulation of fat tissue localized or generalized, caused by nutritional imbalance, associated or not with genetic and endocrine-metabolic disorders. One of the largest public health problems is a chronic disease that is being treated as a global epidemic responsible for substantial increased morbidity and mortality, which makes it a serious public health problem in the latest World Health Organization (WHO) World Health Organization world population is increasing significantly as your body mass, in developed and developing countries. The data do not differ in Brazil, so it is possible to observe a clear geometric progression in the prevalence of obesity in recent decades and therefore one chronic non-communicable disease such as, diabetes, hypertension, dyslipidemia and cardiovascular diseases representing 72% of deaths in Brazil.

Obesity is due to several factors such as functional disability, poor quality of life, serious illness, reduced life expectancy and higher mortality. One of the main risk factors for chronic diseases is obesity, and even more damaging consequences in the elderly, path concern the government.

Population studies show that the aging of the population is due, in particular, the substantial decline in mortality and fertility in Brazil, as this has caused not only a reduction in the amount of the Brazilian population, but also a significant change in the age structure with respect to aging and increased longevity. According to projections by the Brazilian Institute of Geography and Statistics-IBGE average life of Brazilian achieve in 2050, 81.29 years.

This process is exciting, but at the same time worrying, because aging is a multifactorial process that involves a sequence of physiological changes such as cell loss and decline of the organ. Begins the process of sarcopenia and hence muscle strength decreases. Replacing the muscle there is a proportional increase in fat, especially in the pelvic girdle and this tends to be centralized, making it more visceral, bringing numerous diseases such as metabolic syndrome and thus heart disease.

For the association between chronic diseases and obesity anthropometric indicators are used: BMI (body mass index), WC (waist circumference), WHR (waist / hip ratio). It has also been suggested in the literature CN (neck circumference) a simple measure, which enables the identification of overweight and obesity being used and to be positively correlated with changes in certain factors of metabolic syndrome. Increased C leads to an accumulation of fat molecules in the wall of the carotid arteries, favoring the development of CD (cardiovascular disease).

Although the literature indicates important association of CP with increased cardiovascular disease, further studies are needed, especially in the elderly population, as up. This study aimed to determine the prevalence of obesity from the CN and the risk factors for CD in the elderly.

MÉTODOS

Cross-sectional study, including 85 seniors between 60 and 93 years, residents of greater Vitória-ES. Were invited to participate in the study. As inclusion criteria the volunteers should be men above 60 years and exclusion were the ones who were unable to be measured and weighed. The volunteers who agreed to participate in the study were informed and understood the risks of the study and asked to sign the consent form Free Clarified in as ethical standards required by the resolution nº 196 of October 10, 1996 (National Health Council). The research project was submitted and approved by the Ethics Committee of Brazil Platform (CAAE in 16586913.7.0000.5060). All volunteers responded to anamnesis: gender, ethnicity, age, use of medications and diseases. In anthropometric assessment were measured: body weight, height, waist circumference, hip circumference and circumference of the neck.

Procedures

Body weight was measured in kilograms in a Welmy brand mechanical scale with a capacity of 150 kg and 100 g split into and the height in meters, for the balance coupled with capacity of 2m, divided in to inches stadiometer. The guy kept his body erect, with arms along the body pending and heels together, wearing light clothing and barefoot. From the values of height and hip circumference, we calculated the Body Adiposity Index by the equation: $BAI(\%) = HC(\text{cm}) / \text{height} \times \text{square root of the height (m)} - 18$. Waist circumference was a ferriawith an anthropometric tape measure with 2min length, measured midway between the iliac crest and the last rib, without clothing in the area of measurement. Classification of waist circumference occurred from the following values: <94 cm, 94-101.9cm \geq 102cm for men Hip circumference (HC) as the most posterior buttock circumference circumference homens. Hip circumference (HC) as the most posterior buttock circumference circumference. Neck was measured at the base of the neck at the time of the cricothyroid cartilage. In men with prominence, the CN was measured below the prominence. Regarding the classification of neck circumference, we used the values <37 cm and >37 cm for men according to a study by Ben-Noun et al.

Analysis of data

Were calculated the average and standard deviation of the quantitative variables. The data was stored in the Excel software for Windows and the statistical analyses performed using the SPSS program, version 20.0. The information was analyzed at a significance level of $p \geq 0.05$, with BAI numbers versus the other variables. Being held still the correlation of Pearson, to determine the possible correlations.

RESULTS AND DISCUSSION

Three methods of anthropometric measurements were used to analyze the prevalence of obesity among the elderly: BAI, CH and CN, since the combination of these measures can help solve some dilemmas of the BMI. There is extreme difficulty in these of BMI in the elderly, mainly due to the fact that there is an appropriate age cutoff (The difficulty exists because the elderly have a decrease in stature, fat accumulation, body mass reduction lean as well as reducing the amount of water in the

body, so the BAI comes as a great opportunity to study.

The initial physical characteristics were 69,55±5,89 years, with body mass 77,32±13,35kg and height 1,66±0,06m. However data can be explained according to the aging process in which body mass tends to decrease, along with stature, among other biological capabilities. However, it is not known how this process occurs.

Suriah et al. found a significant decrease in height of the elderly with more advanced ages found in the study with a range from 60 to 93 years. A trend can be seen in the declining stature among older seniors. Since the factors that contribute to this are: a decrease in the arch, flattening of the intervertebral discs and increased curvature of the spine.

Table 1 presents the descriptive characteristics of elderly men in relation to age, body mass, stature, hip circumference, CW, CN and BAI and all the correlations between anthropometric variables (CW, CN, BAI) were significant ($p \leq 0.05$) as shown in the table. According to the data presented in table 1, the sample is: about CW sample is a risk factor for developing diseases such as diabetes, chronic high and cardiovascular diseases.

As for CW, there was also a very high relationship between CW and CN increased, confirming the findings of Ben-Noun and Laor and Yang et al. Dagenais et al. and Yusuf et al., comparing the use of WC with cardiovascular disease, identified it as being the highest association with cardiovascular events. Thus, changes of CW reflect the male pattern of fat distribution and changes in risk factors for CD.

The CW better reflects the content of visceral fat worth mentioning that, according to the study International Day for the Evaluation of Abdominal Obesity – IDEA adipose tissue in this region is an excellent indicator for risk of chronic diseases, including hypertension and diabetes mellitus and most aggravating especially in the elderly population due to the reduced lean body mass, the metabolic rate, reduced physical activity and the thermogenic effect of food. These data in this study are sufficiently important for prevention, despite not having data presented in connection with these pathologies.

Regarding the CN sample is obese and frequency of risk factors for cardiovascular disease. Similar findings were found in the study of Tibana et al., who found an association of CP increased with hypertension, Ben-Noun and Laor com as dyslipidemias, Vasques et al. with diabetes and Preis et al. with resistance insulin, high blood pressure and dyslipidemia.

In relation to the BAI the sample meets obesity denoting a warning to the population of seniors belonging to the group, given the relationship that exists between high levels of body fat with the quality of life.

Despite the gradual reduction of mortality by CD in Brazil, mortality levels are still high and are similar to those seen in the countries of Eastern Europe and China, and higher than the most found in Latin American countries.

Table 1: descriptive data of elderly men in relation to age, body mass, stature, hip circumference, waist, neck and BAI.

| DATA | Minimum | Máximo | Average | Standard Desviation |
|----------------|---------|---------|----------|---------------------|
| AGE (years) | 60,00 | 93,10 | 69,5518 | 5,89993 |
| BODY MASS (kg) | 43,80 | 114,80 | 77,3200 | 13,35771 |
| HEIGHT (m) | 1,49 | 1,82 | 1,6616 | 0,06084 |
| WAIST (cm) | 70,30 | 127,00 | 95,7435* | 11,11300 |
| HIP (cm) | 13,80 | 123,80 | 101,3576 | 12,38850 |
| BAI (%G) | 12,01 | 42,04 | 29,7182* | 4,53204 |
| NECK (cm) | 32,80 | 49,8,00 | 39,9129* | 3,59999 |

*Significance Level $\leq 0,05$

CONCLUSION

The data showed that the CN, as well as the BAI and the CW can be used as a marker for estimating anthropometric cardiovascular risk. Individuals with CN may exhibit increased higher proportion of hypertension, diabetes, dyslipidemias, obesity, and change in anthropometric markers studied.

Despite the scarcity of studies on the measurement of CN as an indicator of CD, we can conclude that the CN is a simple measure to be undertaken and can, in practice, be used as a marker for relevant anthropometric, able to estimate cardiovascular risk factors.

The results of this research have shown that anthropometric indicators were highly correlated, being suitable for population studies also showed a high percentage of fat in both the IAC, which is a worrying factor for this population. Whereas if obesity were detected in all parameters, it is important to strengthen the importance of the evaluation of data bound to this epidemic. Studies with representative samples of the Brazilian population are required to verify and identify the metabolic changes, as parameters of prevention and diagnosis of obesity. It is urgent the need to develop references for anthropometric data for the elderly, especially in Brazil, where the data are still scarce.

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NECK CIRCUMFERENCE AND RISK FACTORS FOR CARDIOVASCULAR DISEASE IN THE ELDERLY

ABSTRACT

Increased body fat and thus overweight and obesity is caused mainly by changes in life style, such as physical inactivity and increased food intake. In elderly instead muscles there is a proportional increase in fat, especially in the pelvic girdle and this tends to be centralized, making it more visceral, bringing numerous diseases such as metabolic syndrome and thus heart disease. This study aimed to determine the prevalence of obesity from the CP and the risk factors for CVD in the elderly. The study is cross-sectional, including 85 elderly between 60 and 93 years, residents of Vitória-ES. Neck circumference, waist, hip, body mass and height was used. The study population is obese as the body adiposity index, neck circumference and waist. The data obtained demonstrated that CP as well as the CC and IAC may be used as a marker for anthropometric estimate cardiovascular risk. Individuals with increased CP may contain higher proportions of hypertension, diabetes, dyslipidemia, obesity and changes in the indicators studied.

KEYWORDS: risk factors, cardiovascular disease, elderly

LA CIRCONFERENCE DU COU ET FACTEURS DE RISQUE MALADIES CARDIOVASCULAIRES CHEZ LES PERSONNES AGÉES

RESUME

Augmentation de la graisse du corps et donc surpoids et l'obésité est cause principalement par des changements de mode de vie, comme l'inactivité physique et l'augmentation de la prise alimentaire. Dans les muscles âgés il y a une augmentation proportionnelle de la graisse, en particulier dans la ceinture pelvienne et cela tend à être centralisé, ce qui rend plus viscérale, apportant de nombreuses maladies telles que le syndrome métabolique et donc la maladie de cœur. Cette étude visait à déterminer la prévalence de l'obésité et les facteurs de risque de maladies cardiovasculaires chez les personnes âgées. L'étude est transversale, dont 85 personnes âgées entre 60 et 93 ans, les résidents de Vitória-ES. La circonférence du cou, taille, hanche, la masse corporelle et la hauteur ont été utilisées. La population d'étude est obèse comme l'indice d'adiposité corporelle, la circonférence du cou et de la taille. Les données obtenues ont montré que CP ainsi que CC et IAC peuvent être utilisés comme un marqueur de risque cardiovasculaire estimation anthropométrique. Les personnes ayant augmenté CP peuvent contenir des proportions plus élevées de l'hypertension, le diabète, la dyslipidémie, l'obésité et les changements dans les indicateurs étudiés.

MOTS-CLÉS: facteurs de risque, les maladies cardiovasculaires, les personnes âgées

PERIMETRO DEL CUELLO Y FACTORES DE RIESGO PARA ENFERMEDAD CARDIOVASCULAR EN LAS PERSONAS MAYORES

RESUMEN

El aumento de la grasa corporal y por lo tanto el sobrepeso y la obesidad es causado principalmente por los cambios en el estilo de vida, tales como la inactividad física y el aumento de la ingesta de alimentos. En los músculos de edad avanzada en cambio, hay un aumento proporcional de grasa, especialmente en la cintura pélvica y esto tiende a ser centralizada, por lo que es más visceral, con lo que numerosas enfermedades tales como el síndrome metabólico y por lo tanto la enfermedad cardíaca. Este estudio tuvo como objetivo determinar la prevalencia de la obesidad y los factores de riesgo para las enfermedades cardiovasculares en los ancianos. El estudio es transversal, incluyendo 85 ancianos entre 60 y 93 años, residentes en Vitória-ES. La circunferencia del cuello, se utilizó la cintura, la cadera, la masa corporal y la altura. La población de estudio es obesa como el índice de adiposidad corporal, circunferencia de cuello y la cintura. Los datos obtenidos demostraron que CP así como la PC y IAC se pueden utilizar como un marcador de riesgo cardiovascular estimación antropométrica. Los individuos con una mayor CP pueden contener una mayor proporción de hipertensión, diabetes, dislipemia, la obesidad y los cambios en los indicadores estudiados.

PALABRAS CLAVE: Factores de riesgo, enfermedades cardiovasculares, ancianos

CIRCUNFERÊNCIA DO PESCOÇO E FATORES DE RISCO PARA DOENÇAS CARDIOVASCULARES EM IDOSOS

RESUMO

O aumento da gordura corporal e consequentemente o sobrepeso e a obesidade ocasiona-se principalmente pelas mudanças no estilo de vida, tais como: sedentarismo e aumento da ingesta. Nos idosos em substituição a musculatura há um aumento proporcional de gordura, principalmente na cintura pélvica e esta tende a ser centralizada, tornando mais visceral, trazendo inúmeras doenças como síndrome metabólica e consequentemente a doença cardíaca. O presente estudo teve por objetivo verificar a prevalência da obesidade a partir da CP e os fatores de risco para DCV em idosos. O estudo é transversal, incluindo 85 idosos entre 60 e 93 anos, residentes da Grande Vitória - ES. Foi utilizada circunferência do pescoço, cintura, quadril, massa corporal e estatura. A população estudada encontra-se obesa quanto ao índice de adiposidade corporal, circunferência do pescoço e da cintura. Os dados encontrados demonstraram que a CP, assim como o IAC e a CC, pode ser utilizada como marcador antropométrico para estimar risco cardiovascular. Indivíduos com CP aumentada podem apresentar maior proporção de hipertensão, diabetes, dislipidemias, obesidade e alteração nos marcadores antropométricos estudados.

PALAVRAS-CHAVE: Fatores de risco, doenças cardiovasculares, idosos