Overweight and salt intake associated with uncontrolled hypertension arterial

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ABSTRACT Arterial hypertension is the main cause of morbidity in Mexico, being secondary to triggers such as salt intake. Objective. To determine the overweight and salt intake associated with the lack of control of arterial hypertension in Santa Lucia, Comalcalco Tabasco, Mexico. Methodology. An observational, analytical, cross-sectional, prospective study was performed in patients attending the Santa Lucia ejido health center in Cunduacán Tabasco in May 2016, using the Pearson chi-square test and Fisher's exact test, accepting a p≤0.05. Results. The 57.5% were female, 19 cases were found with salt intake ≥5.1 grams in 24 hours and blood pressure ≥140 / 90 mm hg (p = 0.008). Conclusion. The intake of salt is related to the lack of control of the aterial pressure.Palabras claves: presion arterial, sal, sobrepeso, Mexico

Introduction

Hypertension is a serious global public health problem; In fact, its complications annually cause 9.4 million deaths. (Andrade Castellanos, 2015) (Campos Nonato, y otros, 2013)

In a sample of 10,000 subjects, in 52 centers, in different parts of the world; Urinary excretion was correlated with blood pressure between individuals, but not between the different centers of study. Higher sodium excretion was associated with an increase in pressure between 25 and 55 years, demonstrating an increase of six grams accompanied by an increase in systolic and diastolic pressures of 10 ± 6 mm Hg, respectively. (Valdés Stromilli, 2009) Where in the alteration of this, the genetic factors usually modulate the genetic predisposition of a predisposing genome for the disease. (Moreno Plasencia, Lardoeyt Ferrer, Iglesias Rojas, & Padilla Preval, 2015)

Complications cause an estimated 9.4 million deaths annually, suggesting an increasing prevalence of hypertension in some ways to increase population, aging and behavioral risk factors such as unhealthy diet, harmful use of alcohol , Physical inactivity, overweight and prolonged exposure to stress. (Rondanelli, 2015) In addition to factors that suggest the presence of smoking (43.24%), obesity (31.65) and heart disease (12.28%) (Trindade Radovanovic, dos Santos, De Barros Carvalho, & Silva Marcon, 2014).

Therefore, the objective of this study was to determine the overweight and salt intake associated with uncontrolled hypertension in a primary care center in Santa Lucia, Comalcalco Tabasco, Mexico

Methodology
Study design

An observational, analytical, cross-sectional, prospective study was conducted in patients attending the Santa Lucia ejido health center in Cunduacán Tabasco in May, 2016

Universe shows and sampling

The universe was constituted by patients who come to the health center of Ejido Santa Lucia in Cunduacán Tabasco, obtaining a formula for finite population using a 99% confidence level (2.57), a margin of error of 99% (0.01). Selected by systematic sampling.

Selection criteria

Inclusion: Men and women with hypertension, apparently healthy people. Exclusion: subjects under 18 years of age. Elimination: patients with change of address.

Data collection plan

Data collection was carried out by means of a data collection instrument which consisted of a questionnaire of 12 itmes where variables such as body mass index (BMI), salt intake according to a previously weighed sample were evaluated, indicating ≥ 5.1 grams as high and ≤5 grams as adequate, intake in 24 hours. (Lamelas, 2015). The body mass index (BMI) considered as normopeso <25.0, overweight 25.0-29.9, obesity> 30.

In relation to blood pressure, the values of <120/80 mmhg, prehipertension 121/81 - 139/89 mm hg, grade one hypertension 140/90 - 159/99 mmhg, hypertension grade two ≥160 / 100 mm Hg, measured by mercury baumanometer. (Chobanian, y otros, 2004). Applied in the health center located in the ejido Santa Lucia, Cunduacán, Tabasco

Statistical analysis plan

Data were processed and analyzed using statistical packages such as Microsoft Excel®, SPSS® v23. The Pearson chi square test and the Fisher exact test were used, accepting a p≤0.05.

### Ethical Considerations

The present study consisted of determining the relationship of salt intake and arterial hypertension, according to the General Health Law Title Fifth article 99. (Secretaria , 2016) The project was approved by the ethics and research committee of the Universidad del Valle de México Campus Villahermosa.

Results

Regarding the gender surveyed, 57.5% were female and 42.5% were male. Figure 1.

Figura 1. Generation of hypertensive patients

Género de los pacientes

43% Male
58% Female
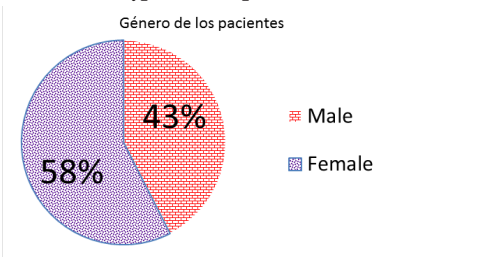
Source: Overweight and salt intake associated with uncontrolled hypertension arterial

In relation to the patients with reference to salt intake ≥5.1 grams we found 19 cases with blood pressure ≥140 / 90 mm hg, with statistically significant relation (p = 0.008) (OR = 12.6, 95% CI = (1.42-114.42) In agreement with Fisher's exact test, 15 cases were found to be overweight and arterial hypertension without significant association.

	Blood pressure (mm hg)				
	140/90 – 159/99	<120/80	p	OR	95% CI
Salt (grams) ≥5.1	19	12	0.008*	12.6	(1.42-114.42)
≤5	1	8			
BMI Overweight	15	10	0.095&	3	(0.7864-11.44)
Normopeso	5	10			

* Pearson square chi test
& Fisher exact test
Source: Overweight and salt intake associated with uncontrolled hypertension arterial

Discussion

The prevalence rate in question of arterial hypertension has been found in 31.5% in adults in Mexico City, which is why it is very important to carefully observe each patient so that they do not trigger cardiovascular pathologies secondary to this. (Campos Nonato, y otros, 2013)

In people with hypertension, smoking (43.24%), obesity (31.65%) and heart disease (12.28%) are the most frequent associated risk factors. (Sia Perin, Estevam Cornélio, Matheus Rodrigues, & Jayme Gallani, 2013)

Salt intake of 2.3 grams of sodium in populations 40 to 59 years of age tends to increase to 7.8 for systolic and 3.5 mm Hg for diastolic; There are foods where it is present, such as "fast" food where a double cheeseburger which consists of 1,120 mg of sodium, a medium portion of French fries with 340 mg, and cola with 114 mg. By inducing an excessive increase of sodium inside the organism this reflects symptoms such as thirst and water increase, causing increase of the intravascular volume subsequent to an elevation of the arterial pressure, detonating structural and / or renal damage. (Zehnder, 2010); Being substantial the intervention of nutrition in patients with the pathology; Decreasing sodium intake from 140 to 60 mmol / day, causing a decline in systolic blood pressure, or less than 4.5 grams in 24 hours (Esquivel Solís & Jiménez Fernández, 2010), (Romero, Disminución del consumo de sal en la población: ¿recomendar o no recomendar?, 2013), (Romero, 2014) In addition, cerebrovascular accident (p = 0.007) and cardiovascular disease (p = 0.02) were observed in subjects with an increase in salt intake of 5 g / day. However, when encouraging strategies that encourage the control of triggers involves including the cost and effectiveness that it had, a pilot study was applied dietary strategies in order to reduce the rates of arterial hypertension secondary to inadequate food at a cost $ 0.09 per person; For tobacco and other control measures this was $ 0.026 per day per year. (He , Campbel, & MacGregor, 2012). Compared with our results, we found an association in the uncontrolled blood pressure being greater or equal to 140 mm hg in the systolic and 90 in the diastolic (p <0.05), with a 12-fold increased risk of metabolic uncontrol in the disease (95% CI = 1.42-114.42), the increase in blood pressure values was more frequent in overweight, but no statistically significant association was found (p> 0.05).

Conclusión

High salt intake is a factor that predisposes to hypertension in adults in the community of Santa Lucia, Cunduacán, Tabasco Mexico, it is evident that the inadequate diet is predisposing to metabolic alterations, so implementing strategies for improvement is one of the fundamental tasks of public health.

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