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EXCESS SALT INTAKE AS A LIFE STYLE DISORDER

Physiology

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ABSTRACT

Introduction: Increasing incidence of lifestyle diseases like hypertension, cardiovascular diseases, stroke and early ageing can be studied under the lights of increased dietary intake of salt and their etio-pathological relationship can be reviewed. Hence, this study was designed to educate people about the hazardous & morbid effect of excessive salt consumption. Materials and methods: This observational survey study was primarily based on 100 participants in Mumbai suburbs, in view of their excessive salt intake. The consumption of salt was estimated grossly by the salt being bought by the family with respect to the number of persons in the family. Empiric evaluation of nutritional status of 100 participants assessed by dietary salt pro-forma and by physical examination. Result: Salt consumption of 36% of participants found to be more than 10gms/day while 15% of participants are risking their health at the level of 15gms/day & above. The salt consumption of 49% of individuals found to be 5-10gms/day. Conclusion: It is apparent that salt intake in humans is generally not a true reflection of salt requirement. A reduction of salt intake can be used as a non-pharmacological tool in therapeutics for prevention of various lifestyle diseases.

KEYWORDS

lifestyle diseases, ageing, salt intake.

INTRODUCTION:

Is human life without salt imaginable? Probably not! Salt as we readily use is present in all edible substances, used in its natural form. Sodium is essential for cellular homeostasis and physiological function. Walter Cannon more explicitly defined homeostasis when he referred to the "fluid matrix" of the body and emphasized the role of sodium[1]. In the present era of globalization, not only fast foods, but also other eatables such as Chinese, Italian are getting accepted. Excessive consumption of these increased salt rich foods such as butter, cheese, biscuits, sauce, soups, pickles, papad etc. paves our way towards early health problems. The incidence of lifestyle diseases like hypertension, diabetes mellitus, dyslipidemia, and overweight/obesity associated with cardiovascular diseases is high on the rise. Cardio vascular disorders continue to be the major cause of mortality representing about 30% of all deaths worldwide. With rapid economic development and increasing westernization of lifestyle in the past few decades, prevalence of these diseases has reached alarming proportions among Indians in the recent years[2]. Evidence relating salt intake and cardiovascular health and disease come from numerous animal experiments, epidemiological studies, dietary trials, and clinical observations[3].Most hypertension control programs have been targeted at those with greater risk, such as older people and those with multiple risk factors. The rationale has been that the benefit of intervention is greatest in those with the largest absolute risk. Although the major acquired cardiovascular diseases first appear in adults, their origins occur in childhood. Accordingly, the greatest long-term potential to reduce the conditions that lead to rising arterial blood pressure with increasing age is to initiate prevention activities in earlier. Public health approaches to disease control are aimed at reducing the public's exposure or vulnerability to a vector or causative agent. These approaches can provide what seems to be a small effect in individuals but a significant reduction in population risk[4].Many lines of investigation have led to overwhelming evidence for a causal relationship between dietary salt intake and blood pressure levels in adults. Importantly, these include numerous randomized clinical trials of salt reduction that have been the subject of several meta-analyses[5]. He and Macgregor have demonstrated that “modest reduction in salt intake causes immediate falls in blood pressure.” and conclude that such effects “if continued, may well lessen the subsequent rise in blood pressure with age.”[6]. There is evidence that in the absence of increased BP, elevated dietary sodium can adversely affect multiple target organs and tissues, including the vasculature, heart, kidneys, and areas of the brain that control autonomic outflow[7].So to educate people about the hazardous & morbid effect of excessive salt consumption is the need of hour. Measuring the 24-hour urinary sodium excretion is the reference method to quantify sodium intake, but has been used up to now almost exclusively as a research tool. Why not apply this method to clinical needs? The main reason not to have probably been the perceived complexity of collecting urine in the course of one day. Other drawbacks are the need to assure that all 24-hour urine has been adequately and completely collected. So one of the tools which could help to succeed in reducing salt intake by individuals is to measure directly how much salt (sodium) they eat, and to use this information to reinforce the necessity of reducing it. Self-reported food consumption in questionnaires or surveys is usually the method followed.

MATERIALS AND METHODS:

This is an observational survey study primarily based on 100 selected individuals in Mumbai suburbs, in view of their excessive salt intake. We taken the age limit of 19- 40 years and weight between 40-70 kg as our sampling unit. Approval for the study was taken from institution ethics committee and informed, written consent from all the participants. Individuals undergoing any sort of medical treatment were excluded. Pregnant or lactating women were excluded. Base line characteristics like age, weight, height, body mass index, habits were collected. The itemized rating scale presents a series of salty food items against frequency from which a respondent selected one as best reflecting his evaluation is adopted. The consumption of salt estimated grossly by the salt being bought by the family with respect to the number of persons in the family. Empiric evaluation of nutritional status of 100 participants assessed by dietary salt pro-forma and physical examination.

RESULTS:

Our study consists of 100 participants including 51 females & 49 males; sex wise no significant difference appeared in their dietary salt consumption. Salt consumption of 36% of individuals found to be more than 10gms/day while 15% of participants are risking their health at the level of 15gms/day & above. The salt consumption of 49% of participants found to be 5-10gms/day (Fig.1). In the present survey participants comprised of 52 non-vegetarians & 48 vegetarians, both of them are playing at the same risk level as per the sodium consumption is concerned.

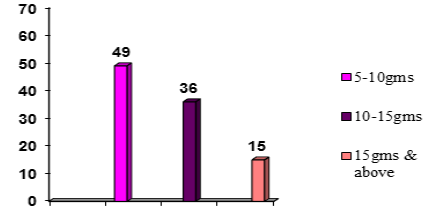

Figure-1: Percentage distribution of dietary salt intake

DISCUSSION AND CONCLUSION:

In industrialized nations and in many emerging economies, heart disease and stroke are the primary cause of death and disability. Moreover, heart disease and stroke needlessly cost society billions of dollars in medical care expenses, as well as lost productivity, and produce decrements in quality of life. One of the primary driving forces for the global cardiovascular disease epidemic is raised arterial blood pressure[8].As we all know the most common effect of ageing is when the skin becomes wrinkled, grey hair and baldness. Several lines of evidence suggest that there is a direct relationship between the amount of salt consumed in the diet and prevalence of early ageing. Current US dietary guidelines already recommend that persons consume less than 2300 mg of sodium (equivalent to 5.8 gm of salt)[9]. International guidelines on nutrition unanimously recommend sodium restriction, ideally to less than 5 gms/day[10]. It is estimated that decreasing dietary intake from 10 grams to 5 grams per day would reduce the overall stroke rate by 23% and cardiovascular disease rates by 17%[11]. Coordination between food processors, restaurants, and advocacy groups is crucial and currently lacking[12].The important public health strategy, needed is to modestly and persistently reduce salt in the food supply, particularly snack foods and fast foods, as well as many canned and processed foods[13]. This will slow or prevent the rising arterial blood pressure that accompanies ageing. When detection and treatment of hypertension is combined with other modifiable risk factors, it provides a widely accepted method of predicting risk and preventing cardiovascular complications. BP correlates with sodium intake, with multiple mechanisms underlying this relation. Preclinical and clinical studies demonstrate that sodium adversely affects multiple target organs independent of BP. It is apparent that salt intake in humans is generally not a true reflection of salt requirement. A number of strategies can decrease the dietary sodium such as decrease the sodium content of foods, a switch from high-sodium to low-sodium foods by avoiding processed foods and reading labels, switch to substitute salts[14,15,16]. Importantly,flavor must be maintained because taste is the driving force behind salty foods17. A reduction of salt intake can be used as a non-pharmacological tool in therapeutics to decrease incidences of cardiovascular disorders, so salt restriction strategy needs a greater effort and a continuing support in order to achieve it[18].

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