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CONSUMPTION OF PROCESSED MEAT AS ONE OF THE DEVELOPMENT FACTORS OF STOMACH ADENOCARCINOMA

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Abstract: Stomach adenocarcinoma, responsible for 95% of malignant tumors, can occur in any part of the stomach extension, is characterized by abnormal cell growth causing inflammation in the inner lining of the stomach mucosa. Stomach adenocarcinoma in the Brazilian population is the third type of cancer that affects men between 60 and 70 years old and is the fifth most frequent type of cancer in women, in the north and northeast regions it is the second type of cancer that most affects men. Factors that influence the development of stomach adenocarcinoma are processed meats or sausages, excess salt, alcohol, smoking and the bacteria Helicobacter pylori. The objective of this work is to present the risk of the consumption of processed meats in the development of stomach adenocarcinoma (gastric cancer). Narrative research of articles was carried out on Google Scholar, Scielo and PubMed platforms between 2015 and 2021 in Portuguese, English and Spanish lines. Analyzing the researched articles, it was observed as one of the causal factors in the development of stomach adenocarcinoma in men and women the consumption of processed meats through the additives used in the conservation of these foods that turn into nitrosamines, which is carcinogenic. As one of the factors causing stomach adenocarcinoma is the consumption of processed meats, minimizing this type of food is crucial for the prevention of this neoplasm, as well as the practice of healthy habits such as good nutrition, prioritizing the consumption of fruits, vegetables, legumes and vegetables.

Keywords: Stomach adenocarcinoma; processed meats; Nutrition.

INTRODUCTION

Gastric cancer is one of the main health problems and the most frequent in the world population (PANDURO-CORREA, 2019; MACHLOWSKA, 2020), being one of the main diseases of the gastrointestinal system, thus causing morbidity and mortality in Brazil (INCA, 2018). The most common form affected is stomach adenocarcinoma, which is responsible for 95% of malignant tumors. According to the National Cancer Institute (INCA, 2019) for the years 2020 to 2022, approximately 21,230 cases of stomach cancer will be diagnosed in Brazil, 13,360 in men and 7,870 in women, with the highest incidence in people over 50 years old (GONÇALVES). et al. 2020).

Stomach adenocarcinoma is characterized as the disordered growth of cells causing inflammation in part of the inner lining of the stomach lining. This type of cancer comes from 95% of the gastric mucosa of the stomach (GERALDO, 2011; INCA, 2021). Stomach adenocarcinoma in the Brazilian population is the third type of neoplasm that affects men between 60 and 70 years of age and is the fifth most common type of cancer in women in the North and Northeast regions (INCA, 2021).

Early diagnosis is one of the most assertive ways to treat stomach adenocarcinoma, the resulting symptoms are usually nonspecific, however there is a prevalence of weight loss, nausea, abdominal pain, vomiting. One of the relevant factors to be considered is the complaint of pain resulting from food intake, information that will give the health professional permission for early diagnosis and follow-up to reference units (VALLE et al. 2017). Considering the suspicion of neoplasia, evaluation parameters, such as anamnesis and physical examination, combined with active listening to the patient, helped in the conduct for the early identification of gastric cancer. Complementary tests are essential, such as: analyze existence of *Helicobacter pylori*, with the intention of clarifying suspicion of gastric inflammation, and Upper Digestive Endoscopy (EDA) investigating existing lesions (TODESCATTO et al. 2017).

According to Simonetti (2018), through blood collection substances used as indicators of malignancy are identified, carcinoembryonic tumor markers (CEA) and CA 19.9 can identify protein released by cells in some types of cancer, for the establishment of a primary diagnosis of stomach adenocarcinoma. However, the assessment of CEA concentration is the one that has been most adopted, as it is an accessible method and easy clinical-laboratory interpretation, it is associated with other malignancies such as: those of the stomach, pancreas, gastrointestinal, breast, lung and ovary.

Concomitantly combined with the incidence of stomach adenocarcinoma, nutritional factors are closely related, being one of the main risk aspects for the development of this pathology, it is emphasized the frequent and high intake of foods that have processed formulation, rich in sodium, preserves and abundant in nitrous compounds (SAKAE et al. 2020). In this way, it is proven that a balanced diet is allied to the prevention and consequent reduction of the occurrence of the disease in question, as a diet low in vegetables is also a relevant risk factor (MATOS et al. 2016).

Food industrialization procedures include hydrogenation, molding, hydrolysis, extrusion, frying process prior to processing, and the inclusion of food additives such as dyes, emulsifiers, flavorings, emulsifiers, humectants, sodium nitrite and titanium dioxide (FIOLET et al, 2018). Sodium from the diet, in high amounts, offers insecurity and risks for the development of stomach adenocarcinoma, as it causes injuries to the

gastric mucosa, contributing to the appearance of pathologies and consequent inflammation (KIM et al. 2019).

More studies are needed on the association of processed meats and the development of stomach adenocarcinoma. In this sense, the objectives of this work are to understand the causes of stomach adenocarcinoma and list the main harms of processed food for humans.

METHODOLOGY

The work is a narrative review of the literature through scientific works that deal with the relationship between the consumption of processed meats and the development of stomach adenocarcinoma. The same was carried out using articles published and researched in the databases of: Google Scholar, Scientific Electronic Library Online (SciELO), Latin American Literature (LICAS) and the Virtual Health Library (BVS) and PubMed, between the years 2015 and 2021 in Portuguese, Spanish and English, using the following keywords: stomach adenocarcinoma, processed meats and nutrition and their respective translations.

The following inclusion criteria were used: articles that had their full version available, primary studies, monographs, dissertations, theses and articles or journals that used terminology that until the moment of this article has not changed and that are related to the consumption of processed meats and the development of stomach adenocarcinoma. And as exclusion criteria: articles that have been published more than six years ago, that were out of date, congress abstracts, event proceedings and that presented inconclusive data.

After carrying out the research and data collection that met the requirements for the development of this study, a careful reading of all selected materials was carried out in search of expanding knowledge and critical thinking on the subject in question, for a coherent and effective explanation. of the articles selected for the elaboration of this work.

DISCUSSION

Much is recognized about the role of inflammation as crucial in the pathogenesis of cancer (PIAZUELO et al. 2019), in addition to this factor are linked to others arising externally, including the intake of red and processed meats, obesity, smoking with the risk of cancer gastric. (WANG et al. 2017). The Working Group of the International Agency for Research on Cancer (IARC) states through epidemiological data that the consumption of processed meats is related to cancer (Bouvard et al, 2019).

For individuals who consume processed meat daily, or with a certain frequency during the week, about 50 grams of processed red meat consumed can increase the risk of developing cancer by 18% (PINHEIRO, 2020). It is noteworthy that the prominent amount of compounds such as sodium, saturated fats or additives (N-nitrosamines and tartrazine, as examples), implemented in processing, result in the development or even worsening of stomach adenocarcinoma (SGANZERLA et al. 2020).

There are studies that indicate that the inflammation resulting from the alteration in the gastric mucosa by the infection by *Helicobacter pylori* boost the development of cancer, associated with chronic inflammation. It was also observed that the socioeconomic status of the population can be a parameter to indicate the risk of H. pylori infection and gastric cancer, due to their housing, food, education and basic sanitation (Eichelberger et al, 2015). Furthermore, Kim et al. (2019) in their meta-analysis study, cited that the consumption of high salt in food, which is

also present in salted or cured meat, injures the gastric mucosa inducing inflammation and pathologies.

In the study by Kim et al. (2019) the relationship in the consumption of red and processed meats, containing a high risk of gastric cancer (41% and 57% respectively) and white meats with a reduced risk of gastric cancer (of 20%), since white meat contains less heme iron, abundance of polyunsaturated fatty acids, lower levels of cholesterol and saturated fat compared to red meat. Wang et al. (2016) and Somi, et al. (2015) show that greater consumption of fruits and vegetables has a beneficial effect on the protection of the gastric mucosa, in which there are antioxidant effects of the bioactive compounds present in these foods, which act in the protection of inflammatory responses.

CONCLUSIONS

It can be reiterated that in the long term the composition of foods such as processed meats bring several harmful impacts to the health of the population. The awareness of individuals about this issue becomes of paramount importance, as well as the implementation of health strategies and public policies so that there is a considerable decrease in the percentage of consumption of this type of food.

Such measures, once applied, become extremely significant in preventing or even reducing the incidence of associated diseases, such as stomach adenocarcinoma. On the other hand, the intake of white meat is positively associated with the low risk of stomach adenocarcinoma, and the use of red and processed meats is still responsible for the development of stomach adenocarcinoma.

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