

Knowledge about epidemiology and risk factors of gastric cancer.

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Introduction

The epidemiology of gastric cancer has altered over the past few decades and it is currently the second most common cause of cancer related deaths worldwide. The fundamental prevention measures of improved cleanliness standards, mindful nutrition and helicobacter pylori eradication, taken collectively, have led to a steady drop in the incidence rates of stomach cancer. Gastric cancer prevention continues to be a top concern. However, screenings for early detection and chemoprevention should be conducted on people at higher risk. The most effective treatment for stomach cancer is still surgical resection combined with standardised lymphadenectomy [1]

Description

Gastric Carcinoma (GC) is the second leading cause of mortality worldwide (738,000 fatalities yearly) and the fourth most prevalent malignancy overall (989,600 new cases annually in 2008). Once the condition has advanced, symptoms start to appear. Only in Japan, where it tops 90%, is the five year survival rate considered to be relatively good. The range of European countries' survival rates is 10% to 30%. In Japan, a high survival rate is most likely attained through early diagnosis from endoscopic examinations and subsequent early tumour removal [2].

The incidence reveals significant regional heterogeneity. More than half of all new cases are found in underdeveloped nations. The risk varies between the populations with the highest and lowest risks by 15 to 20 times. East Asia (China and Japan), Eastern Europe, central Asia and South.

The accumulation of particular genetic abnormalities and a mix of environmental variables lead to gastric cancer. Despite global declines, GC prevention should continue to be a top goal. Healthy eating, anti-H pylori treatments, chemoprevention and early detection screening are all part of the primary prevention. Dietary factors play a significant role in the development of stomach cancer, particularly when it comes to intestinal adenocarcinoma. A lower risk of GC may be linked to healthy dietary practises, such as a high intake of fresh fruits and vegetables, the Mediterranean diet, a low sodium diet, salt preserved food, red and high cured meat, moderation in alcohol consumption and maintaining a healthy weight [3].

Fresh fruits and vegetables with high levels of foliate, B carotene, vitamin C and other antioxidants are strongly recommended for their preventive properties. The most

effective risk reducer appears to be β -carotene. An early foliate and selenium shortage seems to make the positive effects of a vitamin rich diet especially apparent. The results of several investigations on the anticancer activities of carotenoids, tocopherols and retinoids, however, are not consistently consistent. Therefore, additional research is needed to resolve the problem.

Numerous studies have shown that smoking increases the likelihood of developing GC, including both cardia and noncardia subtypes. According to research, smoking increases the risk of GC in men by 60% and in women by 20% when compared to nonsmokers.

Due to the negative relationship between GC and socioeconomic position, GC, particularly the cardia and intestinal subtypes, is associated with a lower risk of socioeconomic position. Minors, fisherman, machine workers, nurses, cooks, launderers and dry cleaners are among the occupations with a higher risk of GC due to the main occupational exposures of dust, nitrogen oxides, N-nitroso compounds and radiation [4].

Undoubtedly, GC is a potential target of management due to the substantial association between H. pylori infection and GC. According to the Maastricht III guidelines, treating the infection is advised for those who have peptic ulcer disease, mucosa associated lymphoid tissue lymphomas, atrophic gastritis, were recently treated for gastric cancer, are first degree relatives of GC patients, have unexplained iron deficiency anaemia, have idiopathic thrombocytopenia purpura, need long term Nonsteroidal Anti-Inflammatory Drugs (NSAIDs), proton pump inhibitors and a combination of two antibiotics, such as amoxicillin, clarithromycin or metronidazole, are the first line treatments for H. pylori eradication. Proposed second line therapies include bismuth salts, proton pump inhibitor, tetracycline and metronidazole if the first medication is unsuccessful [5].

Users of NSAIDs and aspirin have been proven to have a lower risk of GC.40 for patients with a history of digestive issues; however, these medications are not advised due to the risk of bleeding, perforation or obstruction of the gastric outlet. The COX-2 selective NSAIDs briefly gained popularity in the late 1990's, but soon after, they were criticised for allegedly raising myocardial infarction risk [6].

The world famous example of GC familial clustering is the Bonaparte family, which has been documented for generations. Three New Zealand Maori families prone to diffuse GC had

germ line CDH1 truncating mutations published in 1998. 45 in general, it is estimated that people with a family history of GC have a 1.5-3 fold greater risk of having the disease.

Gastric cardia carcinomas are at increased risk due to obesity. Blood type A and pernicious anaemia are less common risk factors. Long after partial gastrectomy, gastroplasty poses a risk for stomach cancer.

Conclusion

The most accurate and precise diagnostic screening technique is endoscopy. However, because mass screening for early GC detection is expensive, it is only advised in areas with high incidence, like East Asia and useless in areas with low incidence, like North America.

- Primary prevention requires early identification of all GC risk factors, both modifiable and immutable.
- The following are modifiable risk factors linked to an increased risk of stomach cancer:
 - a) Dependent on the patient, maintain a healthy weight, refrain from smoking, consume alcohol in moderation and maintain a balanced diet.
 - b) H. pylori elimination, taking into consideration NSAIDs, doctor dependant.
- Occupational exposures, familial history of GC, comorbidities and history of partial gastrectomy are GC risk factors that cannot be changed.

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