Esophageal and Gastric Cancers in Sub-Saharan Africa, Epidemiological and Clinical Review

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Abstract

The data on esophageal and gastric cancers in sub-Saharan Africa are fragmented and not numerous because of the rarity and of the inaccessibility of the diagnostic means. Esophageal cancer has very variable incidences according to the geographical zones there and nutritional and infectious factors are incriminated in its arisen. It reaches young subjects with a preferential siege the average esophagus with ascendency of squamous cell carcinomas. For gastric cancer, its incidence there is low despite the strong prevalence of Helicobacter pylori infection. As in Western countries, Helicobacter pylori's gene Cag A is correlated in its arisen the prevalence of strains with multiple EPIYA-C segments might contribute to its low incidence. It affects young subjects more often male with a big ascendency of adenocarcinoma. The improvement of the diagnostic conditions and the financing of researches are necessary for a better knowledge of the risk and the protective factors of esophageal and gastric cancers in sub-Saharan Africa.

Keywords: Esophageal cancer; Gastric cancer; Sub-Saharan Africa

Introduction

The cancers of the esophagus and those of the stomach in sub-Saharan Africa are little studied because of the rarity of the diagnostic resources and the absence of functional registers of cancers. We suggest through this short review to characterize them from fragmented data resulting from some countries.

Esophageal Cancer

Among the digestive cancers, that of the esophagus presents one of the most heterogeneous geographical distributions in touch with the uneven distribution of its risk factors [1]. Contrary to the western countries where prevail as risk factors alcoholism, smoking and Barret's esophagus with gastro-esophageal reflux disease and obesity, in sub-Saharan Africa nutritional and infectious factors are more incriminated [2]. The infectious factors could be the infection to the Human Papilloma Virus as already suggested in the certain Chinese regions [1]. The food factors are a high consumption of corn by means of its contamination by fumonisine which is a mycotoxin [3] but also the nutritional deficiencies which contribute to the installation of Plummer-Vinson's syndrome which constitutes a pre-neoplastic ground [4]. This Plummer-Vinson's syndrome which disappeared in the western countries is found in 1 % prevalence in our digestive endoscopic center in Dakar, Senegal [5,6]. In endoscopic middle, prevalence of esophageus cancer is low in West Africa (0.97 % in Senegal [7]) and very high in East and South Africa (27 % in Malawi [8]). The average age of the patients is young at about 50 years and more than 70% of them are of less than 60 years old [7]. The ascendency is male with approximately 2 men for a woman. The diagnosis is late at the stage of mechanical dysphagia with even an aphagia in 42 % of cases. The preferential siege is the middle third of the esophagus and squamous cell carcinoma prevail with more than 92 % of cases [7].

Gastric Cancer

It is one of the most frequent worldwide cancers with annual 755000 new cases, it's considered rare in Africa more particularly in its sub-Saharan party [9]. The average age of the patients is young between the fifth and the sixth decade of life [10]. The big youth of the general population could explain partially this report as in the majority of the countries of the South. Intervention of other factors in particular environmental and genetic could be also evoked. Indeed, Helicobacter pylori infection is found to almost all of the subjects living in these zones and it arises very prematurely [11-13] there while this bacterium is incriminated in an indisputable way in the arisen of the gastric distal adenocarcinoma [14]. The unknown data on the slightest virulence of the genes of Helicobacter pylori in Africa make speak until now about the African enigma [15]. We have found in Senegal that the Cag A-positive strains were significantly associated with gastric cancer as in western countries [14] but we think that the low prevalence of strains with multiple EPIYA-C segments might contribute to the low incidence of this cancer in our country and by extension in Africa [16], although further studies are needed to evaluate their prevalence in other African countries. The ascendency is male with a sex-ratio around 1.5 to 3 and it would be probably explained by the role of the other incriminated toxic factors (alcohol, tobacco, etc.) more found in men than in women [9,17]. The circumstances of discovery of the gastric cancer are represented by clinical signs evolved in type of pyloric stenosis, loss of weight, digestive bleeding or anemia and they translate the long delay of consultation [18]. Few patients are seen at an early stage or at a fall of the surveillance of pre-neoplastic pathologies as gastric ulcers or a Biermer's disease. The endoscopic features ensue from this long diagnostic delay with an ascendency of ulcerative and/or bourgeoning forms with often stenosis and bleeding [19]. The concentration of the means of exploration diagnostic as the digestive endoscopy in big cities and especially their difficult financial accessibility for the populations explain largely the delay of the diagnosis. As an example, the cost of a high digestive endoscopy with biopsies and histological reading in Senegal is at least equivalent to the monthly guaranteed minimum wage (50000 FCFA = 75 Euros). The highest frequencies are located in the antral and cardia regions which accounted for 79% of all the tumors [9,18]. The histological aspects are dominated as somewhere else by adenocarcinoma [18,20]. The MALT lymphoma is rarely reported to it.
[21], the gastric Kaposi in touch with the HIV occupies 0.3 to 4 % of all cases [22]; other histological types as GIST are found there in a trivial way and in contrast with the reported cases from western countries the African patients are younger, their tumors are larger and often present late with non-specific symptoms [23,24].

Conclusion

The cancers of the esophagus and the stomach in sub-Saharan Africa, the part their relative rarity and their arisen at a young age, constitute a riddle with the likely intervention of nutritional and infectious factors. A certain interest lies in the improvement of the diagnostic technical tray and the continuation of research for the exact determination of their risk factors and their possible protective factors.

References