SHORT ARTICLE

Hospital-based study on the prevalence of cancers in Garo Hills, Meghalaya, India

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Abstract

Background: Garo Hills region of the State of Meghalaya is inhabited by mainly Garos. The details on the occurrence of different cancers from this region has not been reported. **Aims & Objectives** The study was undertaken to provide a general scenario on the prevalence and epidemiology of cancers in Garo Hills. **Material & Methods**: Total 1610 registered cases in the selected hospitals were studied. Detail information such as the age, sex, occupation, lifestyle and the type of cancer of the patients were collected from the hospital records. **Results**: The findings reveal that the age group between 41-50 years mostly developed different cancers. The highest incidence of cancer in the people was throat cancer followed by oesophageal cancer. Among females, breast is the leading site of cancer whereas in the males the leading site was found to be the throat. **Conclusion**: The prevalence of throat and oesophageal cancers in the people of Garo hills could be correlated with the common consumption of tobacco and raw betel quid (locally called gue) by young to adult and it is socially acceptable. It is suggested that effective measures should be taken to increase the awareness and cancer registry should be initiated in the region.

Keywords

Cancer; Hospital Records; Lifestyle; Awareness

Introduction

Cancer and its treatment are one of the major global health-care issues for human. As per the facts and figures of American Cancer Society (2018), the global cancer burden indicates that cancer accounts for about 1 in every 7 deaths worldwide and by 2030, the global burden is expected to reach 21.6 million new cancer cases.(1) Cancer is the second most disease in India responsible for maximum mortality of about 0.3 million deaths per year.(2) Meghalaya is one of the eight States of northeast India. The indigenous people of Meghalaya include Khasis, Garos and Jaintias. Importantly, Meghalaya has the highest reported cases of oesophageal cancer in India.(3) Meghalaya as part of the National Cancer Registry programme started the population-based cancer registry (PBCR) programme from 2009

covering four districts of the State namely, East Khasi Hills, West Khasi Hills, Jaintia Hills and Ri-Bhoi district. Based on this study, East Khasi Hills district has been found to have the highest reported cases of tobacco-related cancers. (3)

Garo Hills region comprising five districts, are inhabited mainly by Garo people. However, with no PBCR set up in Garo Hills and limited research, no documentation of cancer-related cases have been produced so far.

Aims & Objectives

1. To access the prevalence of different types of cancers in the Garo Hills region.
2. To correlate different types of cancers in the Garo Hills region with the lifestyle.

Material & Methods

Hospitals: Tura Civil hospital and Shillong Civil hospital are the main hospitals of Meghalaya catering to the health care needs of the people. They are well equipped with various departments such as surgery, oncology, cardiology, ophthalmology, orthopaedics, gynaecology, dentistry etc. Tura Civil Hospital located at Tura, the head-quarter of the West Garo Hills district, receives patients from all over Garo Hills. Likewise, Shillong Civil Hospital, located at Shillong, the capital of Meghalaya receives patients not only from all over the State but also from the neighbouring States. Thus, the Oncology departments of these two hospitals receive the maximum number of cancer patients. However, for our study, only information on the patients coming from Garo Hills was selected.

Data collection: For the study, patients registered in the hospitals from the year 2005 till 2016 was taken into account. A total of 1610 registered cases were studied during the period. Detail information such as the age, sex, occupation, risk factors and the type of cancer of the patients admitted were collected from the hospital records. Personal interviews of the patients regarding the lifestyle and economic background were also conducted. Based on the information collected, the prevalence of cancers in relation to different age groups was also determined.

Results

Among 1610 registered cases from the region, 691 (43%) were males and 919 (57%) were females which indicates higher incidence of cancer in females than males in Garo hills. The occurrence of cancer was seen in almost all the organs of the body, with the highest being in the throat (22.79%) [Figure1].The second most common cancer was oesophageal (14.16%) followed by breast (13.35%). Cervical and lung cancers each accounted for 4.9%. Ovarian, stomach, blood, oral, liver, rectum, colon, pancreas, caecum and prostate cancers constituted 4.84%, 4.22%, 3.47%, 3.41%, 3.22%, 2.86%, 2.67%, 0.93%, 0.43% and 0.37% respectively. Other types of cancers such as cholangiocarcinoma, renal carcinoma, vulva carcinoma, bone cancer, anal canal cancer, uterine cancer, thyroid cancer, penile cancer, urethral cancer, skin cancer and bladder cancer all together make up 13.48%. The most common type of cancer noticed in males was throat (40.52%) whereas that in females it was breast (23.39%).The most common age group for the occurrence of cancer was between 41-50 years, followed by 51-60 years [Table 1].

Discussion

The study shows an overall scenario of cancer cases in Garo Hills over a period of a decade. The highest number of patients with different types of cancers was recorded in the year 2014 [Figure 2]. The increase in epidemiology can be attributed to the adoption of lifestyle factors such as cigarette smoking, consumption of diet such as fried food, red meat, sun exposure, obesity, physical inactivity etc.(4)

The analysis of information revealed the highest incidence of throat cancer in the region with oesophageal and breast cancers following close behind [Figure 1]. Most throat cancers which include cancers of the pharynx, larynx, tonsils and epiglottis are due to changes in the genetic characteristics of an individual and also exposure to carcinogens due to lifestyle factors.(5) It was noted that people in Garo hills region habitually use tobaccos in the form of cigarettes, bidis. The use of smokeless tobaccos in the form of gutkha, zarda, khaini is also very prevalent, especially in the younger generation. Smokeless tobaccos have been associated with cancers of oesophagus, stomach, lungs, kidney, bladder, pharynx and pancreas.(6) People living in rural areas also smoke sada (shredded tobacco leaves in dried maize cover or paper). One of the most important risk factors should be the exceeding consumption of betel quid (locally called gue) by young to adult, as it is socially acceptable. Another risk factor for throat cancer could be the infection with human papillomavirus (HPV). (7) Other tobacco-

related cancers particularly oral, oesophageal, lung and stomach are also substantially high in the region [Figure 1].Thus, lifestyle factors such as consumption of betel quid, smokeless tobaccos or smoking should be considered as one of the main factors related to a rise of tobacco-related cancers in the region.

Breast cancer is the most common type of cancer in females in India.(8) Our findings also reveal that the most common type of cancer in females in Garo Hills is breast cancer. Numerous risk factors could be associated with breast cancer such as ageing, estrogen, family history, gene mutations and an unhealthy lifestyle. (9). Although the age groups may vary for the onset of different types of cancer, overall, the most common age group with the highest number of cancer cases in our study was found to be between 41-50 years of age. However, 83% of known cancer cases around the world occur in those aged over 50, with 46% aged between 50 and 69 and 37% aged over 70 years old. (10) The early onset may be due to the adoption of lifestyle factors exposing the individuals to various carcinogens as mentioned earlier and is a matter of concern to the society as a whole.

Conclusion

The incidence of throat cancer is prevalent in the Garo Hills with oesophageal and breast cancers following close behind. Breast cancer is the most common type of cancer in females whereas throat cancer is the most common type of cancer in males in Garo Hills. Cancer registry should be initiated in Garo Hills for yearly monitoring so as to commence with the appropriate control measures. Further, it is suggested that the effective measures should be taken by the policy makers to make aware of the prevailing scenario especially regarding the contribution of lifestyle factors in the development of cancer in Garo hills.

Recommendation

Cancer registry should be initiated in Garo Hills for yearly monitoring so as to commence with the appropriate control measures. Further, it is suggested that the effective measures should be taken by the policy makers to make aware of the prevailing scenario especially regarding the contribution of lifestyle factors in the development of cancers in Garo hills.

Limitation of the study

The study was based on the cancer patients admitted in the Govt. hospitals. The cancer related information from the people from private hospitals and outside the hospitals has not been covered.

Relevance of the study

Present study revealed the scenario of different cancers in Garo Hills region with the highest incidence of throat cancer. This may be correlated with lifestyle of the people so that the awareness and preventive measures may be initiated in this region.

Authors Contribution

GTS: Collected the background research literature, acquired the data and prepared the draft manuscript, table and graphs. JS: Helped in drafting the article, acquisition and interpretation of data. SBP: Developed the research design, helped in correction and revision of the manuscript, analysis and interpretation of data jointly with other authors.

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Tables

TABLE 1 PREVALENCE OF CANCERS IN DIFFERENT AGE GROUPS OF PERSONS.

Year	Age group (Years)									
	0-10	11-20	21-30	31-40	41-50*	51-60	61-70	71-80	81-90	91-100
2005	0	4	1	5	7	3	2	0	0	0
2006	0	3	5	9	13	10	6	1	2	0
2007	4	7	6	11	15	15	7	0	0	0
2008	0	3	13	15	20	20	11	3	2	0
2009	1	7	15	22	27	29	20	1	0	1
2010	1	11	7	32	47	48	16	2	1	0
2011	4	9	21	19	57	32	20	3	0	0
2012	0	15	11	31	52	42	13	5	1	0
2013	3	12	8	13	21	21	9	4	0	0
2014	1	12	28	30	85	59	23	7	1	0
2015	2	17	19	17	49	53	44	2	0	1
2016	0	6	12	27	66	63	38	9	2	0
Total	16	106	146	231	459	395	209	37	9	2

** The most common age group for the occurrence of cancer.*

Figures

FIGURE 1 PERCENT DISTRIBUTION OF CANCERS IN GARO HILLS

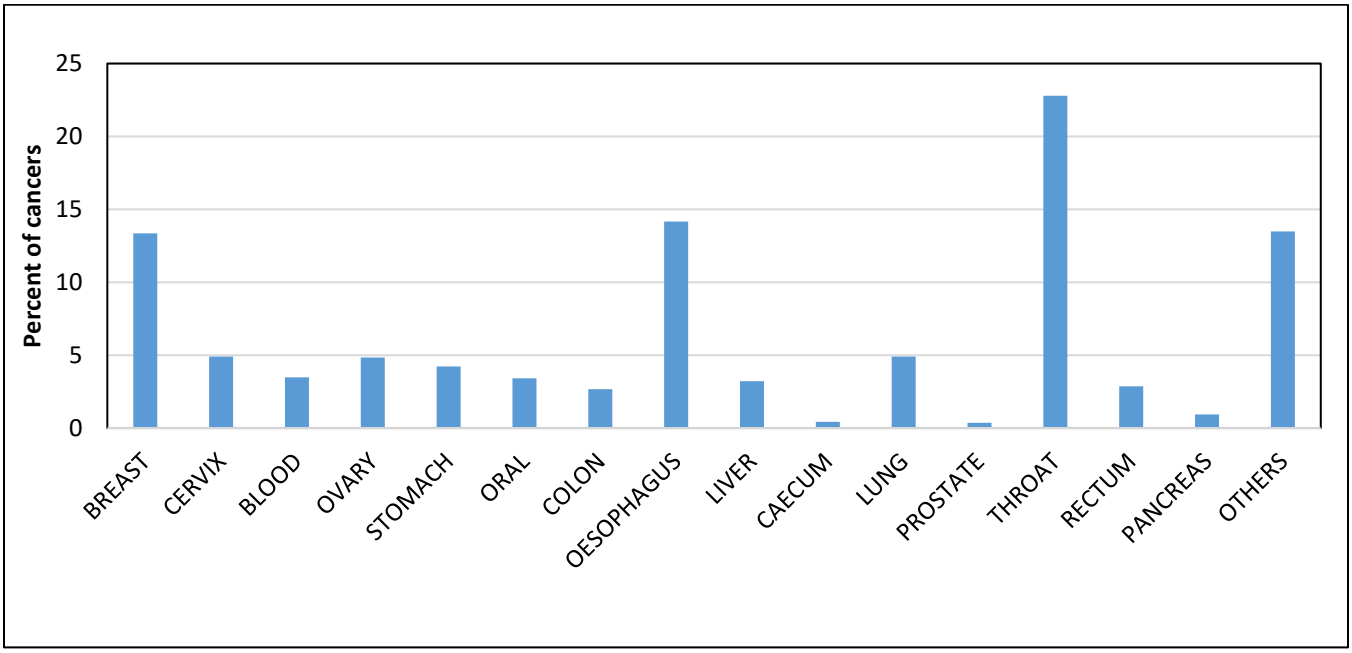

FIGURE 2 PREVALENCE OF DIFFERENT TYPES OF CANCERS IN GARO HILLS