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Patterns of Cancer in select Ethnic groups from Assam: A Retrospective study

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Abstract

There is a geographic variation in the occurrence of cancers in populations of this part of the world. This retrospective study is an attempt to see the patterns of cancers in major ethnic groups of Assam and to identify any variation of cancer patterns in these ethnic groups. The data on cancer of different ethnic groups were obtained from the Hospital Cancer Registry of a regional cancer center in Eastern India for the period of 2010 to 2012. Four major ethnic groups of mongoloids origin that were selected for the present analysis are Ahoms, Bodos, Rabhas, and Mishing. Although there was no significant variation in the pattern of occurrence of cancers in the different ethnic groups but, this study has highlighted that specific life style or food habits in ethnic group in areas with diverse ethnicity should be identified prior to planning a population based primary cancer control programme.

Keywords: Assam, cancer pattern, ethnic groups, risk factors.

Introduction

Ethnic group is a social group of people who identify with each other based on common ancestral, social, cultural, or national experience[1]. The overall age adjusted incidence rate (AAR) of cancers for male ranges from 129-185/100000 populations and 98-156/100000 population in females of Assam, India[2]. In Assam, the ethnicity is composed of Indo-Aryans and mongoloids. In India people belongs to one of four major ethno-racial groups with a significant overlapping because of racial admixture between populations. The races are Caucasoids, Australoids, Mongoloids and Negritos. The ethnicity of Indians has been broadly divided into ancestral north India (ANI) and ancestral south India and the mongoloids of Assam as distinct from East Asia[3]. Indo-Aryans of Assam belongs to ANI group with its origin from Central Asia, but the mongoloids of Assam have their origin from South East Asia and Indo-Tibetan region. Each ethnic group has their own traditional system of fooding, preparing, clothing, rituals, taboos, health care methods or techniques, etc. The members of an ethnic group feel themselves set apart from other groups by a sense of belonging together usually due to shared customs, beliefs, language or religion. They have a sense of "peoplehood" in a larger society and usually they have migrated to a new place or have been conquered by an invading population[4]. According to famous sociologists *Paul B. Horton* and *Chester L. Hunt* were of the view that the term ethnic group could be used as "any kind of group, racial or otherwise, which is socially identified as different and has developed its own sub culture". Because of this behavior amongst ethnic groups, there are certain food habits and culture which are peculiar to each of these ethnic mongoloid groups in Assam. In this retrospective study we have tried to see the patterns of cancers in major mongoloid ethnic groups of this region and to identify any specific patterns prevalent in these ethnic groups, so as highlight population specific intervention in these groups.

Methodology

The data on cancer of different ethnic groups were obtained from the Hospital Cancer Registry of a regional cancer center in Eastern India for the period of 2010 to 2012. Four major ethnic groups amongst mongoloid origin in Assam in eastern part of India were selected for the present retrospective analysis. The different ethnic groups are Tai Ahoms, Bodos, Rabhas, and Mishing. All the ethnic groups were analyzed for gender distribution, mean age of occurrence of cancers, and top five leading sites of cancers for males and females. The information on age, gender, sites and ethnic distribution was stored in standard core proforma in accordance with National Cancer Registry Programme (NCRP) of the Indian Council of Medical Research and subsequently entered on to cancer registry data management software (HBCRDM 1.0). The data was than exported from the HBCRDM 1.0 on to a excel spread sheet program. Different ethnic groups for this analysis were identified by codes that were assigned to the each of these ethnic groups. The information on various sites of cancer was identified by the international statistical classification, tenth revision (ICD-10) coding[5]. Statistical analysis used**:** Descriptive statistics was used and the results are presented as percentages. The average age was calculated as a mean with standard deviation (SD) in parenthesis using statistical package for social sciences (SPSS) version 19.0.

Results and Discussion

A total of 851 cases of males and females from the Bodo ethnic group, 644 cases of Tai Ahom ethnic group, 189 cases

from the Rabha ethnic group and 109 cases from Mishing ethnic group were identified.

Cancer characteristics of the Bodo ethnic group: Out of 851 cases from the Bodo community, 51% (440/851) were males and 49% (411/851) were females. The age of the patients ranged from 1-95 years. The mean age of male patients was 53.0 years (SD=15.4) and in females it was 47.0 years (SD=13.5). The leading sites in males were hypopharynx in 15.6% (69/440), esophagus in 15.6% (69/440), larynx in 7.2% (32/440), oral cavity in 6.8% (30/440), and tongue 6.3% (28/440). The leading sites in females were breast in 23.6% (97/411), uterine cervix in 9.7% (40/411), gall bladder in 8.2% (34/411), stomach in 5.8% (24/411) and ovary in 5.5% (23/411) patients.

Cancer characteristics of the Tai Ahom ethnic group: Out of total 644 cases from the Tai Ahom community, 63% (395/644) were males and 37% (249/644) were females. The age of the patients ranged from 0-90 years. The mean age of male patients was 57.36 years (SD= 13.9) and in females it was 48.50 years (SD= 13.6). The leading sites in males were esophagus in 17% (68/395), oral cavity in 10% (40/395), hypopharynx in 9.8% (39/395), tongue 7.8% (31/395), and the lungs in 7.3% (29/395) cases. The leading sites in females were breast in 20% (51/249), uterine cervix in 11.6% (29/249), esophagus in 10.8% (27/249), gall bladder in 7.2% (18/249) and oral cavity in 4.8% (12/249).

Cancer characteristics of the Rabha ethnic group: Out of 189 cases from the Rabha community, 57% (108/189) were males and 43% (81/189) were females. The age of the patients ranged from 6-85 years. The mean age of male patients was 52.7 years (SD=14.6) and in females it was 46.4 years (SD= 13.9). The leading sites in males were esophagus 15.7% (17/108), hypopharynx in 12% (13/108), larynx 9.2% (10/108), oral cavity 8.3% (9/108), and oropharynx in 5.5% (6/108) cases. The leading sites in females were breast in 22.2% (18/81), uterine cervix in 17.2% (14/81), esophagus 12.3% (10/81), gall bladder 8.6% (7/81), and tongue in 3.7% (3/81) cases.

Cancer characteristics of the Mishing ethnic group: Out of 109 cases from the Mishing community, 58.7% (64/109) were males and 41.3% (45/109) were females. The age of the patients ranged from 7-80 years. The mean age of male patients was 50.8 years (SD=15.7) and in females it was 44.7 years (SD= 12.7). The leading sites in males were stomach in 12.5% (8/64), esophagus in 10.9% (7/64), hypopharynx 6.2% (4/64), oral cavity 4.6% (3/64) and nasopharynx in 4.6% (3/64) patients. The leading sites in females were breast in 17.7% (8/45), uterine cervix in 17.7% (8/45), ovary 13.3% (6/45), esophagus 6.6% (3/45), and stomach in 6.6% (3/45) patients.

There is marked geographical variation in the occurrence of cancer in this region[6]. The incidence of cancer is also very high in this part of the country in comparison [1]. However, till date no study on pattern of cancers in ethnic groups of Assam was done prior to our study. All the information available was on the incidence of cancers in general amongst all ethnic populations of Assam. In the developing societies it is well established that there is a variation in the incidence and survival due to ethnic and racial variations[7] however in India we do not measure either the incidence or survival differences for different ethnic groups till now. Given the fact in Assam there is heterogeneity of ethnic population, our study has brought to light certain facts pertaining to the pattern of occurrence of cancers in the four major ethnic groups of Assam. The significant findings of the present study are;

In the Bodo community male to female ratio was 1.04. There is an equal predilection for both males and females to be affected by cancers in the Bodo community. This is in contrast to normal gender distribution of cancers where males are usually 1.43 times more affected than females[8]. The question is whether there are any peculiar life styles or habits in the female community of the Bodos which needs investigation.

Pattern of cancers is similar in the males and females of the entire ethnic groups in the present analysis. However, stomach cancer and nasopharyngeal cancers in males and ovarian cancers in females constitute major proportion of cancers in the Mishing ethnic group over and above other cancers similar to the entire ethnic group. This may be due to carcinogenic potential of smoked meat and fish,[9,10] consumption of which is a prevalent dietary habit in the Mishing community of the state. The peculiar habit of using smoked meats and fish along with consumption of rice beer with mixture of husk ashes locally termed as “sai mod” in the Mishing community may be responsible for the proportionate high number of cancers of the stomach and nasopharynx. The area of interest will be identifying the amount and frequency of consumption of this specific dietary item (sai mod) by the Mishing community and how much is the prevalence of this habit in patients suffering from cancers of stomach and nasopharynx from the Mishing community.

In females cancers of the breast, uterine cervix, esophagus and gall bladder were common to entire ethnic groups. However, the proportion of ovarian cancers was significantly high in the Mishing community in comparison. In the light of common racial characteristics and consequent similar genetic make-up of these ethnic groups under study, the proportionately high numbers of ovarian cancers in one particular ethnic group warrants investigation by epidemiological studies.

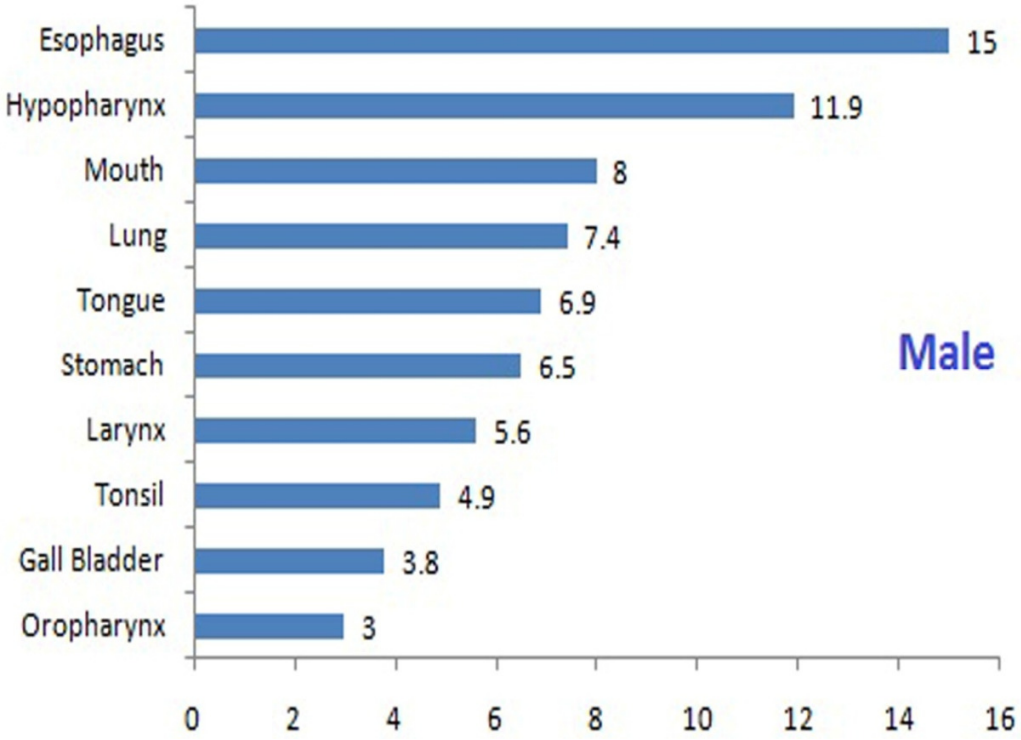

Figure-1
It shows the relative proportion (%) of cancers in males at Hospital Cancer Registry

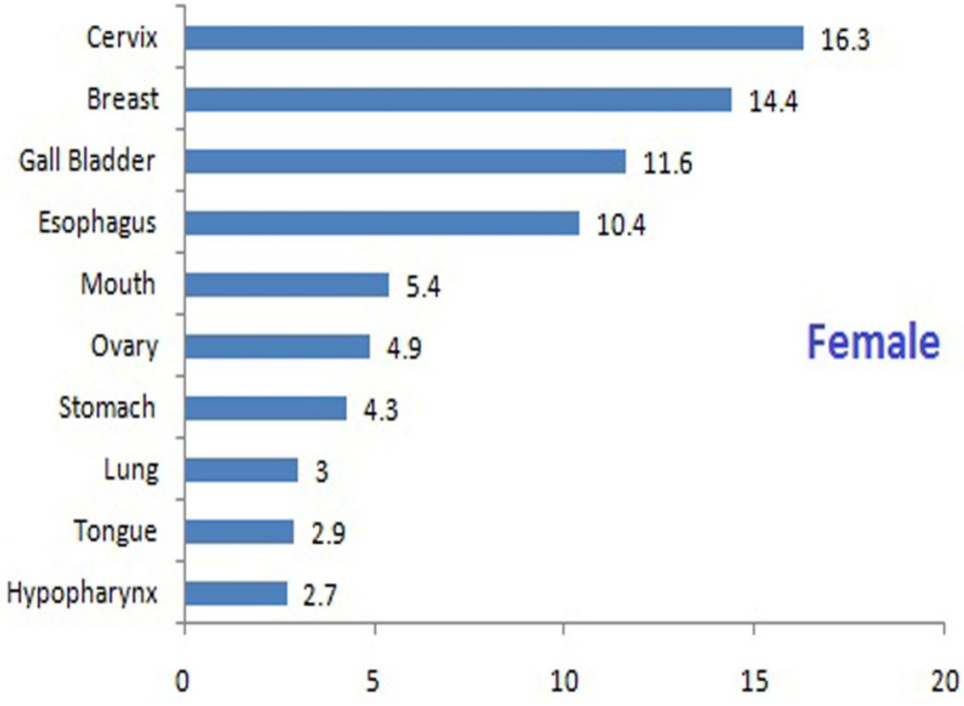

Figure-2
It shows the relative proportion (%) of cancers in females at Hospital Cancer Registry

Conclusion

In the present analysis no significant variation in the pattern of occurrence of cancers in the four ethnic mongoloid groups of Assam was seen. This could be due to the common racial type of these ethnic groups, but this study has brought to the picture for the first time the high proportion of female cancers in the Bodo ethnic group and high proportion of cancers related to specific food habits in the Mishing ethnic group, which warrants further study by professionals in the field of social sciences. Moreover, similar studies with pooled data from multiple centers within the state can bring to light the actual pattern of cancers in these ethnic groups. This study has also highlighted that specific life style or food habits in ethnic group in areas with diverse ethnicity should be identified prior to planning a population based primary cancer control programme.

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