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Original Research Paper

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RISK OF CUTANEOUS MALIGNANCY IN PATIENT WITH PAST AND FAMILY HISTORY OF DISEASES - A TERTIARY HOSPITAL BASED STUDY

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ABSTRACT

Background: The incidence of skin cancer is in rise. It is now more important more than ever to define an accurate aetiology of skin cancer to pave the way for appropriate preventive measures to be taken. Various studies have shown significant and insignificant association of cutaneous malignancy with family and past history of other diseases. But to our knowledge no such studies has been carried out extensively in the North-Eastern region of India.

Methods: Across-sectional descriptive study was conducted at Gauwahati Medical College & Hospital, Guwahati, Assam to understand the association of past and family history of diseases. A total 150 numbers of newly diagnosed cases of cutaneous malignancy were selected from the outpatient department of Dermatology of the institute over a period of three years.

Results: (1) Associated diseases were of 87(58%) minor diseases, 39 (26%) pneumonia, 12(8%) eczema, 7(4.67%) pulmonary tuberculosis, 2(1.33%) hepatitis-C infection, 2 (1.33%) venereal diseases and 1(0.671%) shingles (herpes zoster). The effect of pneumonia, eczema, and hepatitis-C infection are highly significant (p=0.00028). (2) In the study, 4(2.67%) patients had family history of cutaneous malignancy**.** Statistically the effect of family history of cutaneous malignancy of the patients is not significant. (3) In the study 147 (97.99%) patients do not have family history of other major disease.

Conclusion: The effect of pneumonia, eczema, and hepatitis-C infection are highly significant in causation of cutaneous malignancy. The effect of family history of cutaneous malignancy of the patients is significant in selected type of cutaneous malignancy.

KEYWORDS : Cutaneous, Malignancy, Diseases

INTRODUCTION

Tumours of the skin are by far one of the most common of all tumours affecting humans in all age groups from neonate to elderly of both sexes.[1] Of the skin tumours, non melanoma skin cancers {principally, squamous cell carcinoma (SCC) and basal cell carcinoma (BCC)}, are the most common malignant neoplasms in the world.[2] Studies have shown that heredity plays a major role in melanoma. About one in every 10 patients diagnosed with cutaneous malignancy has a family member with a history of malignant melanoma (MM). Each person with a first-degree relative diagnosed with MM has a 50 percent greater chance of developing MM than people who do not have a family history of the disease. People who have had BCC or SCC are also at increased risk of developing MM. Some studies have shown association of cutaneous malignancy with rheumatoid arthritis, breast cancer and lung cancer. Association of cutaneous malignancy has also been observed with past history of Pneumonia, Eczema, Pulmonary tuberculosis, Hepatitis C infection, Venereal disease and Shingles (herpes zoster).[3] People with xeroderma pigmentosum have a high risk of developing MM and other skin cancers when they are young, especially on sun-exposed areas of their skin. Several studies have shown that inflammatory bowel disease (IBD) is associated with increased risk of development of cutaneous malignancy.

MATERIALS AND METHODS

The set of population was studied with a view to understand the association of past and family history of diseases. Being a descriptive study, the data were procured from the Out Patient Department of Dermatology.

Research design

To fulfil the objectives of the study, the hospital based cross-sectional descriptive study was used for collection and study of data.

Study setting

The present study has been undertaken in the Out Patient Department of Dermatology & STD, Gauhati Medical College & Hospital, and Guwahati, Assam.

Study period

The study period was three years commencing from November, 2010 to October, 2013.

Study population

The study population comprise of 150 numbers of newly diagnosed cases of cutaneous malignancy attending the Department of Dermatology. Before undergoing the study clearance from institutional ethical committee was obtained. Analysis of data was done in the year 2014-15

The sample

Sample size of 150 number of newly diagnosed cutaneous malignancy patients.

Selection of cases

The 150 cutaneous malignancy cases were selected into the study among the patients of all age groups attending the Department of Dermatology during the period of November, 2010 to October, 2013. Initially, patients were selected purely on clinical ground and then diagnosis was confirmed by biopsy.

Inclusion criteria

Newly diagnosed cases of cutaneous malignancy of all age group.

Exclusion criteria

Old diagnosed cases of cutaneous malignancy that are under treatment.

Methods

Details of the patient

Details of the patients were recorded in the manner in order of age,

sex, religion, caste, occupation, address, hospital number and registration number for identification and documentation. When patients were first examined a detailed history was taken and thorough clinical examination was done. Then they underwent a battery of investigations to confirm diagnosis. For socioeconomic status of the patients Kupuswamy modified criteria was used. All the patient's history, clinical examination, investigation findings, and diagnosis data were recorded in a pre-designed and pre-tested proforma. As immunohistochemistry facility was not available in the study centre diagnosis was made on the basis of histopathology only. Staging of the cutaneous malignancy was not done. Cancers of oral mucosa, lip, anal canal, conjunctiva and vulva are also included into the study. Cases belonging to cutaneous malignant melanoma are called melanomas skin cancers and others like squamous cell carcinoma (SCC) and basal cell carcinoma (BCC) are called non-melanoma skin cancers.

RESULTS AND OBSERVATIONS

1. Distribution of past medical history of patients N=150

Table-1: Distribution of past medical history of patients

Past medical history	Total	
	No.s	%
Pneumonia	39	26
Eczema	12	8
Pulmonary tuberculosis	7	4.67
Hepatitis C infection	2	1.33
Venereal disease	2	1.33
Shingles (herpes zoster)	1	0.671
Others (minor diseases)	87	58
Total	150	100

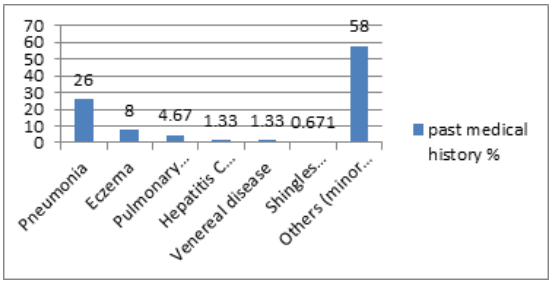

Figure -1: Bar diagram showing distribution of past medical history of patients

The table-1 shows that 87(58%) patients had minor diseases. A total of 39 (26%) patients had pneumonia, 12(8%) patients had eczema, 7(4.67%) patient had pulmonary tuberculosis, 2(1.33%) patients had hepatitis-C infection, 2(1.33%) patients had venereal disease and 1(0.671%) patient had history of shingles (herpes zoster). The statistical analysis suggests that there exists significant difference in the number of patients with reference to past history of certain diseases.

Statistical analysis reveals that, the effects of the component of past medical history are equally effective. In this regards, the effect of pneumonia, eczema, and hepatitis-C infection are highly significant (p=0.00028). Also a group with a significant number of patients is found to have minor diseases only in the past medical history.

2. Distribution of family history of cutaneous malignancy of the patients N=150

Table-2: Distribution of family history of cutaneous malignancy of the patients

Family history of cutaneous malignancy	Total	
	No.s	%
Yes	4	2.67
No	146	97.33
Total	150	100

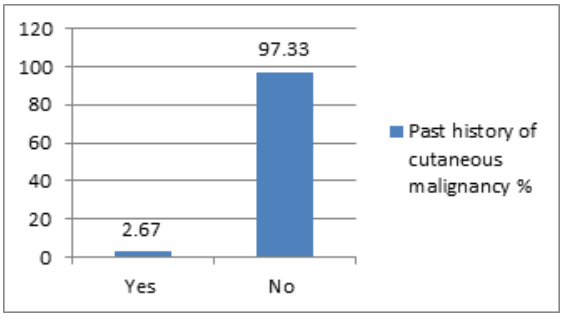

Figure-2: Bar diagram showing distribution of family history of cutaneous malignancy of patients

The table-2 showed that only 4(2.67%) patients had family history of cutaneous malignancy**.** Statistical analysis from the observed data, it is seen that the effect of family history of cutaneous malignancy of the patients is not significant.

3. Distribution of frequency of family history of other diseases of the patients N = 150

Table-3: Distribution of frequency of family history of other diseases of the patients

Frequency of family history of other diseases the patients	Total	
	No	%
Rheumatoid arthritis	1	0.67
Breast cancer	1	0.67
Lung cancer	1	0.67
No diseases	147	97.99
Total	150	100

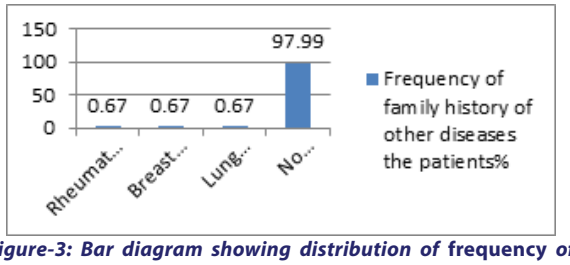

Figure-3: Bar diagram showing distribution of frequency of family history of other diseases of the patients

The table-3 shows that one (0.67%) patient each had family history of rheumatoid arthritis, breast cancer and lung cancer. However, 147 (97.99%) patients do not have family history of other major disease.

Statistical analysis shown in the table-3 reveals that though the patients have the above other diseases also, the number is very insignificant as compared to the patients with no such diseases. From this we can infer that the other disease under consideration do not have significant effect (*P*=0.00001) on the prevalence of cutaneous malignancy.

DISCUSSION

1. Distribution of past medical history of patients

The present studies show that 87(58%) patients had minor diseases in the past. A total of 39 (26%) patients had pneumonia, 12(8%) patients had eczema, 7(4.67%) patient had pulmonary tuberculosis, 2(1.33%) patients had hepatitis-C infection, 2(1.33%) patients had venereal disease and 1(0.671%) patient had history of shingles (herpes zoster).

Statistical analysis suggests that there exists significant difference in the number of patients with reference to past history of certain diseases. Moreover, the effects of the component of past medical history are equally effective. In this regards, the effect of pneumonia, eczema, and hepatitis-C infection are highly significant (p=0.00028).

Also a group with a significant number of patients is found to have minor diseases only in the past medical history. In a Danish hospital-based cohort study, patients with a diagnosis of eczema and asthma had a 41% higher risk of BCC (standardized incidence ratio (SIR) 1.41; 95% CI 1.07–1.83), but diagnosis of eczema alone was not associated significantly with BCC (SIR 1.29; 95% CI 0.92–1.77).[1]

In 2012, Dyer RK, Weinstock MA, Cohen TSD et al. reported that a history of eczema had a 54% higher risk of developing new BCC on the face and ears (multivariate HRR 1.54; 95% CI 1.03–2.32).[2] Thus in terms of past history of eczema our study findings are consistent with these two international studies.

2. Distribution of family history of cutaneous malignancy of the patients

The present study shows that only 4(2.67%) patients had family history of cutaneous malignancy**.** Statistical analysis from the observed data, it is seen that the effect of family history of cutaneous malignancy of the patients is not significant. In 1996, Gailani MR, Leffell DJ, et al. reported that to develop cutaneous malignancy the most significant aetiological factors appear to be exposure to ultraviolet radiation and genetic predisposition. [3] In 1999, Schneider K GJ. reported that malignant melanoma and NMSC risk may be increased in Li Fraumeni syndrome.[4] In 2011, it was reported that malignant melanoma risk is higher in Europeans with CDKN2A mutation, characteristic of familial atypical multiple mole melanoma (FAMMM); around 6 in 10 develop malignant melanoma by age 80.[5] In 2012, it was reported that inherited risk accounts for around 10% of malignant melanoma cases. Risk is highest if the affected relative is aged under 30, or more than one first-degree relative is affected, a cohort study showed.[6] In 2014, Fallah M, Pukkala E, et al. reported that malignant melanoma risk is around doubled in people with a family history of cutaneous MM, versus people without such a family history, meta-analyses and a cohort study have shown.[7] Thus although findings of our study is insignificant in relation to family history of CM, yet can be comparable with these international studies.

3. Distribution of frequency of family history of other diseases of the patients

In our study one (0.67%) patient each had family history of rheumatoid arthritis, breast cancer and lung cancer. However, 147 (97.99%) patients do not have family history of other major disease. Statistical analysis reveals that though the patients have the above diseases also, the number is very insignificant as compared to the patients with no such diseases. From this we can infer that those other disease under consideration do not have significant effect (*P*=0.00001) on the prevalence of cutaneous malignancy. Malignant melanoma risk is up to doubled among people with a previous diagnosis of various other cancers, including female breast cancer, non-Hodgkin lymphoma, renal cell carcinoma, certain childhood cancers, prostate cancer, thyroid cancer and leukaemia[8, 9, 10, 11]. Often these associations are bi-directional, supporting shared genetic or environmental factors. Thus in terms of breast cancer our study findings are consistent with Yang GB, Barnholtz-Sloan JS, Chen Y, et al, 2011,*s* study.[8]

Conclusion

A. Factors with significant risk for development of cutaneous malignancy are -

1) The effect of pneumonia, eczema, and hepatitis-C infection are highly significant in causation of cutaneous malignancy.
2) The effect of family history of cutaneous malignancy of the patients is significant in selective number of cutaneous malignancy only.
3) Rheumatoid arthritis, breast cancer and lung cancer do not have significant effect on the prevalence of cutaneous malignancy

Recommendations

1) The clinical manifestations of cutaneous malignancy range from total absence of any symptoms in subjects with premalignant conditions to formation of swelling, ulcer, bleeding, pigmentation, certain skin changes, pain and itching etc. Differentiating cutaneous malignancy from other causes with similar features and from other cutaneous conditions is important for prognosis and treatment. Evaluation of patients suspected of cutaneous malignancy in a timely fashion is also critical, as a delay in diagnosis can have a negative impact on the disease course.
   Health education of the society should form an important aspect of the health care so that they could learn certain do's and don'ts related to different diseases like cutaneous malignancy specially in persons having past and family history of cutaneous malignancy and other diseases and inculcate these in their behavioral patterns through constant practice so as to prevent the occurrence of diseases or reduce the effects of illness. The common symptoms of cutaneous malignancy which are similar to common diseases should be included in the health education programme so that it can be detected early in those high risk patients especially in those with past and family history of cutaneous malignancy and other cancers. Environmental, occupational and life style factors which are risk for development of cutaneous malignancy should be included into the health education programmes so that the disease can be prevented.
2) Moreover, some screening tests should be held periodically by the health agencies to detect the disease early, especially in persons taking intoxicants for long duration who are high risk for development of cutaneous malignancy. Health agencies should be encouraged to organize periodic camps, health mela for screening of the disease.
3) Preventive maintenance is wiser and less expensive than crisis management. So, promoting awareness about the concept of environmental, occupational and life style risk factors for development of cutaneous malignancy and its common symptoms and to involve community in the process of their mitigation, there is need to conduct awareness campaign programmes in the community level.
4) The study was a descriptive study. So, any conclusions drawn will have to be guarded and will have to confirm with further trials in India.

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