

## FREQUENCY AND HISTOLOGICAL PATTERN OF MALIGNANT SKIN LESIONS IN PAKISTANI POPULATION

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### ABSTRACT

**Objective:** To see the frequency and histological pattern of malignant skin lesions on histopathological examination.

**Study Design:** Prospective descriptive study.

**Place and Duration of Study:** Histopathology Department, Army Medical College Rawalpindi, from 1<sup>st</sup> Nov 2016 to 31<sup>st</sup> Oct 2018.

**Material and Methods:** Malignant skin lesions diagnosed on the skin biopsies received in histopathology department of Army Medical College, were analyzed to see the frequency and histological pattern of malignant skin lesions. All malignant skin lesions diagnosed on histopathological examination of skin biopsies received were included in the study. Skin biopsies having inadequate material, benign skin lesions or showing equivocal diagnosis of malignancy were excluded from the study. Data was entered and analyzed by using SPSS version 17.

**Results:** A total of 15500 biopsies were dealt with during the study period. Out of these 15500 biopsies, 1450 were malignant lesions. Out of 1450 malignant lesions, 100 were malignant skin lesions accounting 6.89% of all skin malignancies. On histological analysis, out of 100 malignant skin lesions, 45 (45%) were basal cell carcinoma, 25 (20%) were squamous cell carcinoma, 05 were malignant melanoma and 03 were Bowen's disease. Other malignant epithelial lesions included 03 malignant adnexal tumours. Among the non epithelial malignant lesions, 10 were cutaneous lymphomas, 03 were Kaposi sarcoma, 03 were angiosarcomas, 03 metastatic malignancies.

**Conclusion:** The frequency of skin malignancies is relatively less in our population as compared to the western world. In our population, most of the skin malignancies are non melanoma skin cancers, basal cell carcinoma being the leading skin malignancy, followed by squamous cell carcinoma. The knowledge of skin malignancies in our population can be of some help in planning the effective management for the disease and to predict the prognostic outlook of the patients.

**Keywords:** Basal cell carcinoma, Histopathological pattern, Malignant skin lesions, Squamous cell carcinoma.

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### INTRODUCTION

Skin is the largest organ of human body. Skin malignancies are predominantly an ultra-violet (UV) light induced skin cancers, more commonly occurring in light skinned Caucasians than in individuals with darker skin<sup>1</sup>. Skin malignancies are estimated to represent about 20-30% of all the body malignancies in Caucasians, 2-4% in Orientals and 1-2% in Africans and Asians<sup>2</sup>. In Caucasians, according to few studies, it is recognized as the most common

malignancy<sup>3</sup>. Broadly, the skin cancers are grouped into melanoma and non melanoma skin cancers. Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most common skin cancers and are lumped into Non Melanoma Skin Cancers (NMSC)<sup>4</sup>. NMSC is the most common skin malignancy in white population<sup>5</sup>. The possible factors include exposure to UV light and sustained depletion of stratospheric ozone layer, as this layer prevents transmission of type B and type C UV light<sup>6</sup>. The incidence of NMSC has increased for the last few decades<sup>7</sup>. Malignant melanoma is most rapidly increasing skin malignancy in Caucasian throughout the world. The increased incidence is related to

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increased sun exposure due to clothing habits and life style<sup>8</sup>. The increasing incidence of malignant melanoma is an increasingly health problem in industrialized nations and white population<sup>9</sup>. There is a considerable geographic and racial variation in skin malignancies. Incidence of NMSC is highest in Australia and USA<sup>10</sup>, while in Finland, BCC is the most common skin malignancy<sup>11</sup>. NMSC are not very life threatening, however, causing significant morbidity. In USA, more than 1000 deaths are reported due to skin malignancies<sup>12</sup>. In the western world, despite the educational programs to prevent cutaneous melanoma, the incidence and mortality due to melanoma have increased steadily. More than half of the cases of cutaneous malignancies are attributed to the sun exposure<sup>13</sup>. In Asian population, the incidence of skin malignancies is quite low as compared to the Western world. Skin malignancies generally and malignant melanoma specifically, which are the common malignancies in white races, are quite less common in Asian population including the Pakistani population. However, the incidence of NMSC in Asian population is gradually increasing<sup>14</sup>. There is a worldwide concern about the increase in incidence of melanoma and non melanoma skin cancers<sup>15</sup>. This study was carried out to see the pattern of skin malignancies in Pakistani population.

## **MATERIAL AND METHODS**

This prospective descriptive study was carried out at Histopathology department of Army Medical College, Rawalpindi. The study extended over a period of 02 years with effect from 1<sup>st</sup> November 2016 to 31<sup>st</sup> October 2018. Malignant skin lesions diagnosed on the skin biopsies received in histopathology department of Army Medical College, were analyzed to see the frequency and histological pattern of malignant skin lesions. All the histological features in these malignant skin lesions were noted in detail to make histological diagnosis. All malignant skin lesions diagnosed on histopathological examination of skin biopsies received were included in the study.

Skin biopsies having inadequate material, benign lesions or showing equivocal diagnosis of malignancy were excluded from the study.

The specimens were labeled and fixed in 10% formalin. Paraffin blocks were made and sectioned at 3-5 micrometer thickness were prepared. The sections were stained with Haematoxylin and Eosin (H&E). The slides were examined by consultant histopathologist and presence or absence of malignancy was noted. Any other significant histological findings were also noted. Data was entered and analyzed by using SPSS version 17.

## **RESULTS**

A total of 15500 biopsies were dealt at Histopathology Department of Army Medical College, Rawalpindi (Pakistan) during 02 years of study period (from 1<sup>st</sup> Nov 2016 to 31<sup>st</sup> Oct 2018). Out of these 15500 biopsies, 1450 cases turned out to be malignant lesions. Out of 1450 malignant lesions, 100 were malignant skin lesions, which accounts 6.89% of all malignancies. Out of 100 cases, 70 (70%) were males and 30 (30%) were females. The age ranged from 25 to 85 years, with a mean age of 57.50. The most common age group was 6th to 7th decade of life, which comprised 60 cases (60%), followed by 5th decade comprising 25 (25%) cases. These 100 malignant skin lesions were analyzed histologically to see the histological pattern of cutaneous malignancies. On histological analysis, the most common skin malignancy noted was basal cell carcinoma comprising 45 cases (45%), followed by squamous cell carcinoma comprising 25 cases (25%). Malignant melanoma cases were 5 (5%) and Bowen's disease was seen in 3 cases (3%). Other malignant epithelial lesions included 03 malignant adnexal tumours (2 sebaceous carcinomas and 01 malignant Hidradenoma). Among the non epithelial malignant lesions of skin, 10 cases were of cutaneous lymphomas (7 Mycosis Fungoides, 2 Primary cutaneous Anaplastic Large Cell Lymphomas and 01 primary cutaneous B cell lymphomas), 03 were Kaposi sarcoma, 03 angiosarcomas and 03

metastatic malignancies (02 were metastatic carcinomas from breast and 1 signet ring carcinoma of gastric origin). A summary of histological pattern of skin malignancies is given in table.

## DISCUSSION

Malignant skin lesions are relatively less common in coloured skin people as compared to white skin population. Skin cancers are a cause of greater morbidity and mortality, so their early diagnosis is very important for effective management<sup>16</sup>. Though skin is very easily accessible organ for physical examination and biopsy procedures for early diagnosis of skin lesions, however, the diagnosis of skin malignancy is still delayed. This histological

melanoma, which was the 3rd most common malignant skin lesion after NMSC, while in our study, the 3rd most common malignant skin lesion was cutaneous lymphoma. The reason may be that in Singapore, there is a larger population of immigrant white race people, who are more prone to the malignant skin lesion including malignant melanoma. Frequency of cutaneous lymphoma was higher (10%) than the melanoma (5%) and was almost equal to the frequency of cutaneous lymphomas seen in a study done by Yap and Pubalan, showing a frequency 9.3%<sup>20</sup>. In a study carried out in India to see the pattern of cutaneous malignancies, squamous cell carcinoma was the most common skin malignancy, followed by basal cell carcinoma<sup>21</sup>.

**Table: Histological pattern of malignant skin lesions in pakistani population.**

S. No.	Histological Tumour Type	Number of Cases (n)	Percentage (%)
1.	Basal Cell Carcinoma	45	45
2.	Squamous Cell Carcinoma	25	25
3.	Cutaneous Lymphomas	10	10
4.	Malignant Melanoma	05	5
5.	Bowen's Disease	03	3
6.	Malignant Adnexal Tumours	03	3
7.	Kaposi Sarcoma	03	3
8.	Angiosarcoma	03	3
9.	Metastatic Carcinoma	03	3
10.	Total	100	100

analysis was done to see the pattern of malignant skin lesion in our population, for which there are very few reliable statistics. In this study, the frequency of skin malignancies was 6.89% of all body malignancies. This frequency is slightly less than the frequency of skin malignancies (8.6) noted in a 10 years study of malignant tumours carried out at Armed Forces Institute of Pathology (AFIP), Rawalpindi (Pakistan)<sup>17</sup>. However, low as compared to skin malignancies in western world<sup>18</sup>. In our study, basal cell carcinoma was the most frequent lesion, followed by squamous cell carcinoma. This finding is in comparison with the findings noted in a study carried out by Koh *et al* in Singapore<sup>19</sup>. However, one finding in this study, which was not similar to our study was the frequency of malignant

In another study carried out in Pakistan, squamous cell carcinoma was the most common malignancy followed by basal cell carcinoma<sup>22</sup>, which was contrary to our findings, as in our study, basal cell carcinoma was the most common malignant skin lesion, followed by squamous cell carcinoma. However, in another one year study carried out at Jinnah Postgraduate Medical Centre (JPMC), Karachi, the findings were corresponding to our study, where basal cell carcinoma was at the top of the list of skin malignancies (48%), followed by squamous cell carcinoma (40%)<sup>23</sup>. Another study from 24 centers in Japan<sup>24</sup>, it was reported that basal cell carcinoma has the highest incidence and accounts for almost 50% of the skin malignancies, followed by squamous cell carcinoma (31%), however, had

a significantly raised frequency of malignant melanoma (21%), which was quite higher as compared to our study. In another study carried out at Hayatabad Medical Complex, Peshawar (Pakistan)<sup>25</sup>, squamous cell carcinoma was the most common skin malignancy (40%), followed by basal cell carcinoma (30%) and then melanoma (13%). To summarize, it was noted that NMSC were the main burden of skin malignancies in our population as compared to malignant melanoma.

## CONCLUSION

The frequency of skin malignancies is relatively less in our population as compared to the western world. In our population, most of the skin malignancies are non melanoma skin cancers (NMSC), basal cell carcinoma being the leading skin malignancy, followed by squamous cell carcinoma. The incidence and frequency of malignant melanoma is significantly low among the skin malignancies in Pakistani population. The knowledge of frequency and histological pattern of skin malignancies in our population can be of some help in planning the effective management of the disease and to predict the prognostic outlook for the patients.

## CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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