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AGE, GENDER DISTRIBUTION, AND ANATOMICAL LOCATION OF SQUAMOUS CELL CARCINOMA PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

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Abstract

Background: Squamous cell carcinoma (SCC) is a common type of skin cancer that arises from the squamous cells, which are found in the outermost layer of the skin. The objective is to investigate the age, gender distribution, and anatomical location of squamous cell carcinoma (SCC) patients at a tertiary care teaching hospital. **Materials and Methods:** A retrospective analysis of medical records was conducted for 31 patients diagnosed with SCC at the tertiary care teaching hospital. Data on age, gender, anatomical location, and histopathological classification of SCC were collected and analyzed. Descriptive statistics were used to summarize the demographic and clinical characteristics of SCC patients. **Result:** Among the 31 SCC patients, the age distribution showed a peak occurrence in the 44-56 age group, with a mean age of 50.90 years. The majority of patients fell within the age range of 44-70 years. Gender distribution revealed a nearly equal proportion of male (51.6%) and female (48.4%) patients. Anatomical location analysis showed diverse sites of SCC development, including tongue, cervical, oral ulcer etc. The morphological distribution demonstrated that SCC was predominantly moderately differentiated (45.2%) and well-differentiated (35.5%), with a smaller proportion of poorly differentiated (16.1%) and moderately to poorly differentiated (3.2%) cases. **Conclusion:** The results indicate that SCC primarily affects individuals in their middle to older ages, with a slightly higher prevalence in males. The findings highlight the need for targeted prevention, early detection, and management strategies based on these demographic and clinical characteristics. Further research with larger cohorts is essential to validate these findings and facilitate the development of personalized approaches for SCC treatment and care.

INTRODUCTION

Squamous cell carcinoma (SCC) is a common type of skin cancer that arises from the squamous cells, which are found in the outermost layer of the skin. It is the second most prevalent form of skin cancer, accounting for approximately 20% of all diagnosed cases.[1,2] SCC can occur on various parts of the body, including the head and neck, extremities, trunk, and other sun-exposed areas. It is primarily associated with chronic exposure to ultraviolet (UV) radiation from the sun, as well as other risk factors such as fair skin, older age, immunosuppression, and certain genetic conditions.[3,4]

Demographic patterns of SCC can vary depending on geographic location, ethnic background, and environmental factors.[5] Understanding the age and gender distribution, as well as the anatomical site involvement, of SCC patients within a specific healthcare setting can provide valuable insights into the characteristics and trends of this malignancy.[6,7]

In the context of a tertiary care teaching hospital, comprehensive data on SCC patients can be collected, analyzed, and utilized to inform clinical decision-making and enhance patient care. Tertiary

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care hospitals are renowned for their specialized medical services, advanced technologies, and expertise in managing complex cases. Studying the age and gender distribution, along with the anatomical location of SCC within such a healthcare facility, can offer a unique perspective on the characteristics of SCC patients and contribute to the existing knowledge base.

The objective of this study was to investigate the age, gender distribution, and anatomical location of SCC patients at a tertiary care teaching hospital. By analyzing these factors, we aimed to provide insights into the demographics of SCC in this specific healthcare setting. The findings from this study can aid in developing targeted prevention strategies, facilitating early detection, and guiding treatment decisions for SCC patients.

To achieve our objective, a retrospective analysis of medical records was conducted for a cohort of SCC patients who received care at the tertiary care teaching hospital.

MATERIALS AND METHODS

Study Design
A retrospective analysis of medical records was conducted to investigate the age, gender distribution, and anatomical location of squamous cell carcinoma (SCC) patients at katuri medical college and hospital, a tertiary care teaching hospital in chinnakondrupadu, Guntur, Andhra Pradesh, India. The study design involved the collection and analysis of existing data from patient records, ensuring adherence to ethical guidelines and maintaining patient confidentiality.

Data Collection
Data on patient age, gender, anatomical location of SCC, and histopathological classification were extracted from the medical records of individuals diagnosed with SCC at the tertiary care teaching hospital. The inclusion criteria were patients with a confirmed diagnosis of SCC, and the sample size for this study consisted of 31 eligible patients. The data were collected from a defined timeframe, ensuring consistency and accuracy in the analysis.

Statistical Analysis
Descriptive statistics were utilized to summarize the demographic and clinical characteristics of SCC patients9. The collected data included age, gender, anatomical location, and morphological types of SCC. The age distribution was analyzed by grouping the patients into specific age ranges, and the number of patients within each group was calculated. Mean age and standard deviation were calculated to provide a central tendency and measure of dispersion for the age distribution.

The gender distribution was determined by counting the number of male and female patients, and the proportions were calculated accordingly. Anatomical locations of SCC were recorded and categorized based on the affected regions of the body, such as the head and neck, extremities, trunk, or other specified areas. The frequencies of SCC occurrence in each anatomical location were determined.

Furthermore, the morphological types of SCC were identified based on histopathological classification. These morphological types included well-differentiated, moderately differentiated, moderately to poorly differentiated, and poorly differentiated SCC. The number of patients with each morphological type was recorded, and their respective proportions were calculated.

Ethical Considerations
The study was approved by the Institutional Ethics Committee of katuri medical college and hospital, Chinnakondrupadu, Guntur ensuring patient confidentiality and compliance with ethical guidelines.

RESULTS

The age, gender distribution and anatomical location of squamous cell carcinoma (SCC) patients at a tertiary care teaching hospital were examined. The results revealed interesting patterns in terms of age groups, gender distribution, and morphological types of SCC.

[Table 1] displays the age distribution of SCC patients, categorized into four age groups: 28-43, 44-56, 57-70, and 71-86. Among the included patients, the majority fell within the age range of 44-56, with 12 patients (approximately 38.7% of the total) in this group. The mean age for this group was 50.90 years, with a relatively low standard deviation of 4.78, indicating a relatively narrow age range. The next largest age group was 57-70, comprising 10 patients (approximately 32.3% of the total). The mean age for this group was 65.40 years, with a standard deviation of 4.50. The age groups 28-43 and 71-86 consisted of 3 patients (9.7%) and 6 patients (19.4%) respectively, with mean ages of 34.66 and 76.85 years. These findings suggest that SCC commonly affects individuals in their middle to older ages, with a peak occurrence in the age range of 44-56.

[Table 2] provides the gender distribution of SCC patients. Among the 31 patients, 16 (51.6%) were male and 15 (48.4%) were female. The gender distribution was almost balanced, with a slightly higher prevalence of SCC in males. This finding aligns with previous research indicating that SCC tends to affect males more frequently than females.
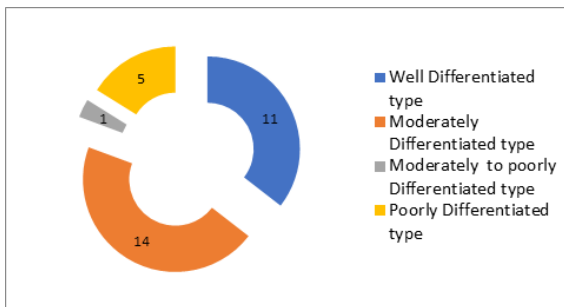
[Table 3] presents the anatomical location of the SCC cases. Anatomical location analysis showed diverse sites of SCC development, including tongue, cervical, oral ulcer etc
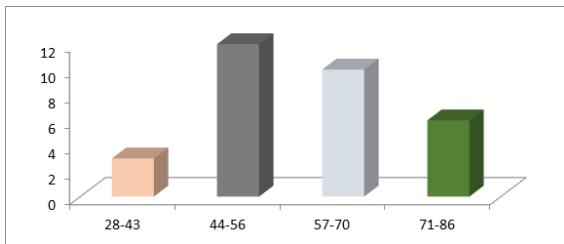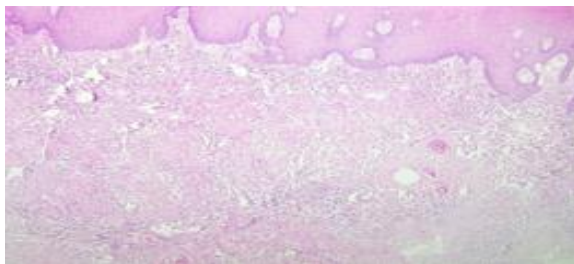
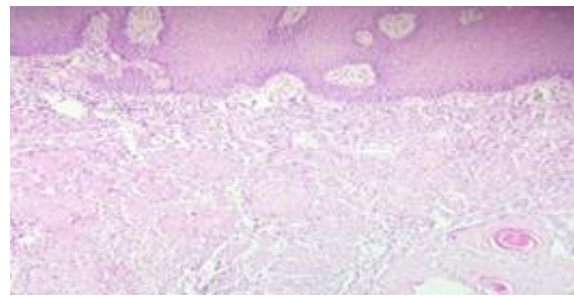**Figure 1: Age Distribution of Squamous Cell Carcinoma Patients**
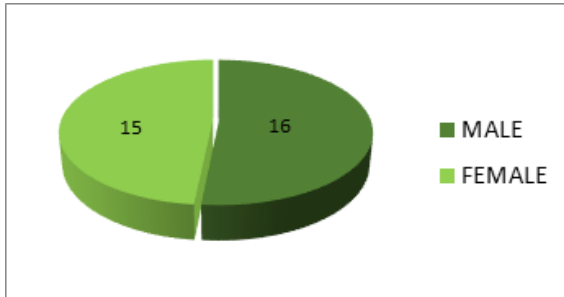
Figure 2: Gender Distribution of Squamous Cell Carcinoma Patients
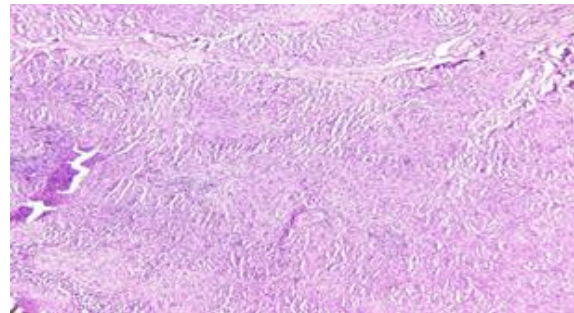

Figure 3: Morphological Distribution of Squamous Cell Carcinomas

Image 1: Infiltrated well differentiated SCC

Image 2: Well differentiated SCC with keratin pearls high magnification (400x).

Image 3: Moderately differentiated SCC showing solid sheet arrangement of tumor cells
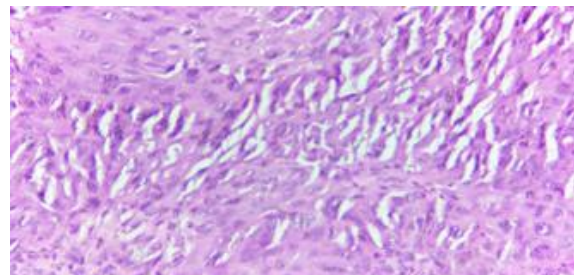
Image 4: High magnification (400x) of moderately differentiated squamous cell carcinoma showing individual keratinization of tumor cells
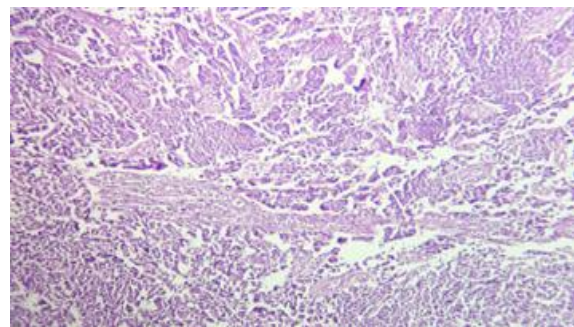
Image 5: Low magnification (100x) of Poorly differentiated squamous cell carcinoma

Table 1: Age Distribution of Squamous Cell Carcinoma Patients

Age group	Number patients	Mean ±STD
28-43	03	34.66 ± 7.63
44-56	12	50.90 ±4.78
57-70	10	65.40 ± 4.50
71-86	06	76.85 ± 4.94

Table 2: Gender Distribution of Squamous Cell Carcinoma Patients

Gender	Number of patients
Male	16
Female	15

Table 3: Anatomical location of Squamous Cell Carcinoma Patients

Sno	Age	Sex	Anatomical location
1	28	Female	Cervix
2	33	Male	Growth of tongue
3	43	Male	Swelling left cheek
4	45	Female	Vagina
5	45	Male	Uleno proterative lesion from left foot
6	45	Female	Cervix
7	48	Female	Cervix
8	49	Female	Cervicx
9	50	Female	Cervicx & Endometrium
10	55	Male	EAC
11	55	Female	Growth of Hypopharynx
12	56	Female	Cervix
13	56	Female	Cervix
14	56	Male	Submental and upper jugular lymphonodes
15	60	Male	Oral ulcer
16	60	Female	Cervix
17	61	Female	Cervix
18	61	Female	Right pyriform fossa
19	66	Male	Tongue
20	66	Female	Cervix
21	70	Male	Skin Wedge biopsy
22	70	Female	Tumor malignant melanoma
23	70	Male	CT Guided cell block
24	70	Male	Post cricoids region
25	71	Male	Skin edge biopsy
26	73	Male	Growth at the base of the tongue
27	75	Male	Right false vocal card
28	76	Female	Soft palate and right tonsillar region
29	77	Male	Ulcer site skin
30	80	Male	Soft palate arch
31	86	Male	Wedge biopsy of skin

Table 4: Morphological Distribution of Squamous Cell Carcinomas

Differentiated type	Number of patients
Well Differentiated type	11
Moderately Differentiated type	14
Moderately to poorly Differentiated type	01
Poorly Differentiated type	05

[Table 4] presents the morphological distribution of SCC cases. The different morphological types of SCC were classified as well-differentiated, moderately differentiated, moderately to poorly differentiated, and poorly differentiated. The largest proportion of SCC cases exhibited moderate differentiation, with 14 patients (approximately 45.2% of the total). Well-differentiated SCC was the second most common type, observed in 11 patients (approximately 35.5%). Poorly differentiated SCC accounted for 5 patients (approximately 16.1%), and only 1 patient (approximately 3.2%) had a moderately to poorly differentiated type. These findings provide insights into the histopathological variations of SCC cases at the examined tertiary care teaching hospital.

In summary, the results reveal that SCC predominantly affects individuals in their middle to older ages, with a higher prevalence in males. The majority of SCC cases demonstrate moderate differentiation, followed by well-differentiated SCC. These findings contribute to our understanding of the age, gender, and anatomical location distribution of SCC patients at the studied tertiary care teaching hospital. The findings underscore the importance of targeted prevention, early detection, and management strategies for SCC based on these demographic and morphological characteristics. Further studies with larger sample sizes are warranted to validate these results and provide more comprehensive insights into SCC demographics.

DISCUSSION

The findings of this study align with previous research on the demographics of squamous cell carcinoma (SCC) and provide valuable insights into the age, gender distribution, anatomical location, and morphological types of SCC patients at a tertiary care teaching hospital.

Regarding age distribution, our study revealed that SCC predominantly affects individuals in their middle to older ages. This is consistent with previous studies that have reported an increased incidence of SCC with advancing age.[10,11] The cumulative effects of chronic sun exposure, genetic predisposition, and other environmental factors over time may contribute to the higher occurrence of SCC in older individuals. It is important to note that SCC can still occur in younger age groups, especially in individuals with significant sun exposure or other risk factors.

In terms of gender distribution, our study observed a slightly higher prevalence of SCC in males compared to females. This finding is in line with the existing literature, which consistently reports a male predominance in SCC.[12,13] The exact reasons for this gender disparity are not fully understood but could be attributed to differences in sun exposure behaviors, hormonal factors, genetic susceptibility, or occupational factors. However, further studies are warranted to explore the underlying mechanisms contributing to this gender disparity.

The anatomical location of SCC plays a significant role in its diagnosis, treatment, and prognosis. Our study identified diverse anatomical locations for SCC, Anatomical location including tongue, cervical, oral ulcer etc. This distribution aligns with previous studies that have reported the head and neck region as the most commonly affected site for SCC.[14,15] The variations in anatomical locations underscore the importance of comprehensive skin examinations and targeted screenings to detect SCC in its early stages and ensure timely intervention.

The morphological types of SCC provide insights into the differentiation status of the tumor, which can have implications for prognosis and treatment response. Our study revealed that moderately differentiated SCC was the most common morphological type, followed by well-differentiated SCC. This is consistent with previous research indicating that moderately differentiated SCC represents the majority of cases.[16] The higher prevalence of moderately differentiated SCC suggests a potential correlation with more favorable prognosis and treatment outcomes compared to poorly differentiated SCC. However, additional studies are needed to explore the clinical significance and impact of morphological differentiation on SCC management.

Comparing our findings with previous studies strengthens the generalizability and validity of our results. The consistency in age and gender distribution patterns across different studies supports the notion that SCC demographics exhibit certain universal trends. However, it is important to consider that demographic characteristics may vary in different populations due to geographical, ethnic, and environmental factors.

Limitations

While this study provides valuable insights into the demographics and characteristics of SCC patients in a tertiary care teaching hospital, it is not without limitations. The retrospective design of the study and the relatively small sample size may restrict the generalizability of the findings. Additionally, the study was conducted in a specific healthcare setting, which may introduce selection bias. Future studies with larger cohorts and multi-center collaborations are necessary to validate our findings and provide a more comprehensive understanding of SCC demographics.

CONCLUSION

This study contributes to our knowledge of the age, gender distribution, anatomical location, and morphological types of SCC patients at a tertiary care teaching hospital. The findings align with previous research and highlight the importance of comprehensive examinations and targeted screenings for early detection and management of SCC. The findings from this study can serve as a foundation for further research, aid in the development of personalized strategies, and contribute to advancements in the management of SCC. Further investigations are needed to explore the underlying factors influencing SCC demographics and their implications for personalized treatment strategies.

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