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Clinical Features and Outcomes of Patients with Hodgkin's Lymphoma: A Study from a Tertiary Cancer Centre

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Abstract: ***Background and Aim**: Hodgkin's lymphoma, a cancer of the lymphatic system, predominantly affects individuals aged 20–40 years. While curable, treatment responses remain unpredictable. This study aimed to analyze the clinical profile, prognostic factors, and treatment outcomes of Hodgkin's lymphoma patients in a tertiary care hospital. **Methods**: A retrospective review of hospital records (2017–2018) was conducted on 38 Hodgkin's lymphoma patients, examining demographics, clinical presentations, histological subtypes, staging, prognostic scores, PET CT imaging, treatment regimens, response rates, toxicity, and outcomes. **Results**: The cohort showed a male predominance, with a median age of 28 years. B symptoms were the most common presentation (28%), and lymphadenopathy was present in 42% of early - stage and 58% of advanced - stage patients. Extranodal disease occurred in 38%, marrow involvement in 5%, and bulky disease in 19%. Nodular sclerosis was the most common histological subtype. PET CT revealed a 65% complete response rate. Low - risk patients (IPS) comprised 85% of the cohort. The ABVD regimen was the most frequently used; 34% of patients received radiotherapy post - chemotherapy. Stage I/II patients achieved >80% remission, while remission dropped to 66% in stages III/IV. Myelosuppression and lung toxicity occurred in 15% and 10%, respectively, with one treatment - related mortality due to bleomycin lung toxicity. **Conclusion**: The study highlights male predominance and younger onset compared to Western populations. Complete remission was high in early - stage patients, declining in advanced stages, consistent with global data. Higher nodular sclerosis incidence and early - stage presentation contrasted with Indian data.*

Keywords: Hodgkin's lymphoma, clinical profile, treatment outcomes, prognostic factors, remission rates

1. Introduction

Hodgkin's lymphoma (HL) is a unique type of hematologic malignancy characterized by the presence of Reed - Sternberg cells, which are typically embedded within an inflammatory microenvironment (1) . This distinct cellular hallmark differentiates HL from other lymphomas and underscores its unique pathophysiology. Globally, HL constitutes a significant proportion of all lymphomas and exhibits unique clinical features and outcomes that distinguish it from non - Hodgkin lymphomas. Over the decades, advancements in medical science have led to the development of sophisticated diagnostic tools, improved staging systems, and highly effective treatment strategies (2) . These innovations have contributed to remarkable improvements in survival rates, particularly in high - income countries where resources for cancer care are more readily available. Despite these advancements, Hodgkin's lymphoma continues to pose challenges due to its heterogeneous nature, varying presentation and differential outcomes observed across populations and healthcare contexts. In the Indian context, Hodgkin's lymphoma remains a critical public health concern as its incidence, clinical presentation and outcomes vary widely across different regions. Factors such as socioeconomic disparities, healthcare accessibility and cultural attitudes toward seeking medical care significantly influence the disease burden. Many patients are diagnosed at an advanced stage due to delays in recognizing symptoms or limited availability of diagnostic facilities in rural and underserved areas. Furthermore, access to advanced therapies such as targeted agents or stem cell transplantation is often restricted due to financial and infrastructural limitations which can adversely affect patient outcomes (3) . Consequently, understanding the unique characteristics of HL in the Indian population is essential to address these gaps in care and improve overall survival rates. Tertiary cancer centers such as those in metropolitan cities like Chennai, play a pivotal role in addressing these challenges. These institutions are equipped with specialized resources and expertise to manage complex cancer cases. By evaluating the clinical features, treatment responses and long - term outcomes of Hodgkin's lymphoma patients, these centres provide valuable insights into the unique challenges faced in resource - constrained settings. Additionally, such studies can highlight the impact of socioeconomic factors, healthcare access and treatment availability on disease management and outcomes. The disease has a bimodal distribution with an increased incidence in young adults as well as in patients 55 years and older (4) . Over the last 4 decades, advances in radiation therapy and the addition of combination chemotherapy have significantly increased the cure rate of patients with HL. Currently, more than 80% of all newly diagnosed patients younger than 60 years are likely to be cured of their disease (5) . This study specifically aims to study the clinical profile, prognostication and assess treatment outcome in Hodgkin's lymphoma patients in a tertiary care hospital. By examining patterns in disease presentation and treatment efficacy the research seeks to identify trends and challenges that are unique to this population. These findings could serve as a foundation for designing targeted

interventions, improving healthcare delivery and shaping policies to address the needs of patients in similar resource - limited settings. Ultimately, the study aspires to bridge gaps in knowledge and care, contributing to better outcomes for Hodgkin's lymphoma patients in India and other developing regions (6) .

2. Materials and Methods

This hospital - based retrospective study was conducted with a sample size of 38 patients. The hospital records of all consecutive Hodgkin's lymphoma patients diagnosed and treated between 2018 and 2023 in the Department of Medical Oncology, Stanley Medical College, were reviewed. Data were collected on various parameters, including the demographic profile, clinical presentation, histological subtype, staging, prognostic scoring, imaging (including PET CT scans), treatment regimens, clinical response rates, toxicity and overall outcomes. This comprehensive review aimed to evaluate the disease characteristics, management strategies, and treatment outcomes in this specific patient cohort.

3. Statistical Analysis and Results

1) Demographic Characteristics:

Gender Distribution: The median age of the population was found to be 26 years, with age ranging from 8 to 67 years.

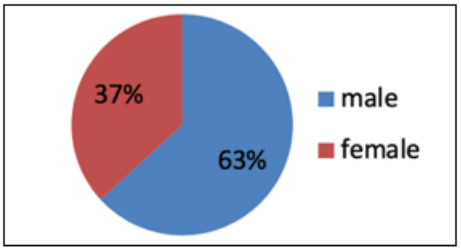

Figure 1: Pie chart showing distribution of respondents by sex.

2) Clinical Presentation

a) Symptoms and IPS scoring

B - symptoms was the most common presenting symptom. Of the total patients, 28.9 % showed Lymphadenopathy and IPS scoring showed 8% for high risk.

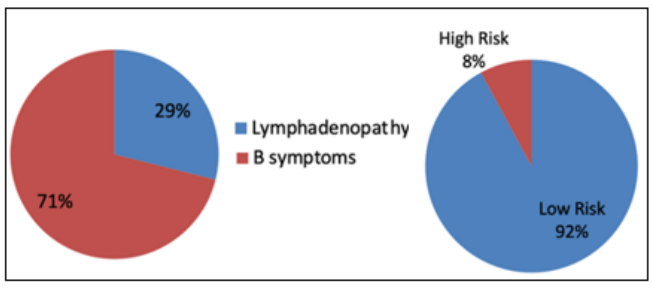

Figure 2: Distribution of respondents by presenting symptoms and risk categories according to IPS.

b) Stage at presentation and Extra nodal disease

A majority of patients presented at late stages (55.3%) rather than early stages (44.7%). Additionally, extra nodal illness manifestation was seen in 39.5% of the group.

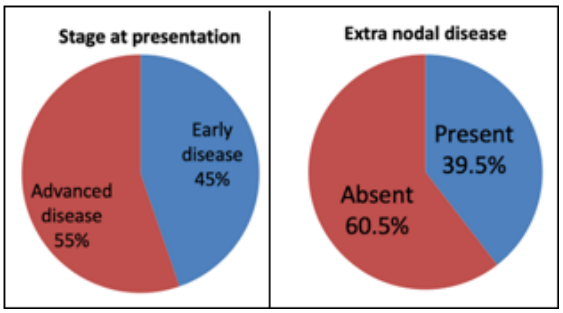

Figure 3: Distribution of respondents by stage at presentation and respondents with Extra nodal disease

c) IHC Subtypes

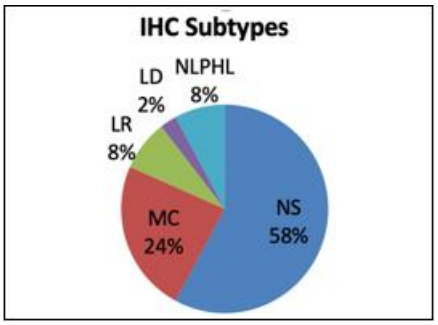

Figure 4: Distribution of IHC Subtypes.

d) Regimens used in treatment

ABVD was the commonly used regimen, few patient received Beacopp as an escalated strategy after interim PET scan results showed progression

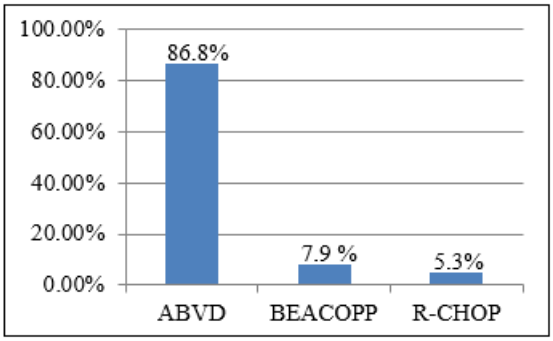

Figure 5: Distribution showing Regimens used in treatment.

e) Toxicity

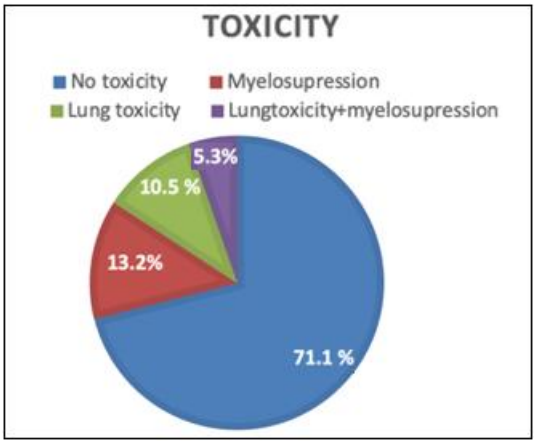

Figure 6: Distribution of regimen related toxicity

f) In- terim PET and Response and Early disease - Response rates

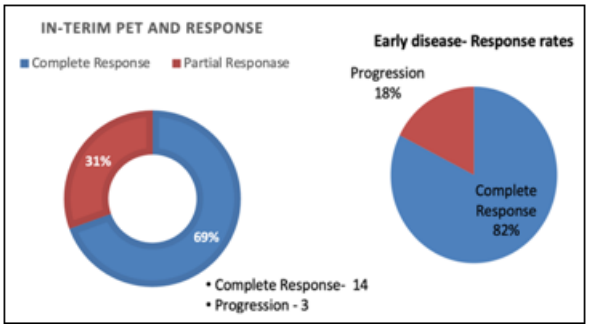

Figure 7: Distribution of response in Interim PET - CT and rates among respondents with Early disease

g) Treatment outcome

Of 38 patients, 29 patients went into complete remission (76.3%), 8 patients (18.4%) progressed even with treatment and 2 patients (5.3%) died during treatment.

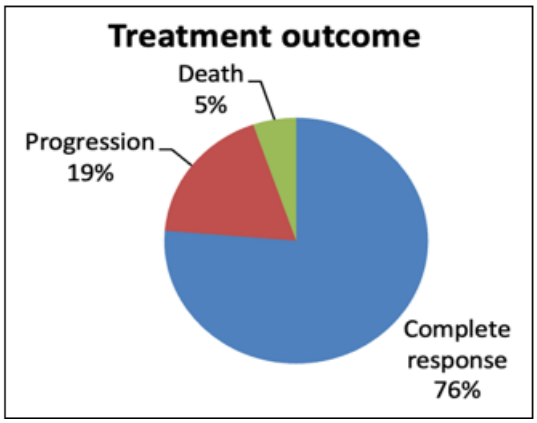

Figure 8: Distribution of treatment outcome.

4. Discussion

This study revealed male predominance with median age of onset of 26 years. B - symptoms was the most common presenting symptom. Of total patients, 28.9 % showed Lymphadenopathy. Most patients presented at advanced stages (55.3%) compared to early stages (44.7%). Further, extra nodal disease presentation was seen in 39.5 % of the population. Marrow involvement was seen in few patients (13.2%). Nodular sclerosis happened to be most common histological subtype. Interim evaluation with PET CT revealed complete response in 69.4 % of patients receiving protocol treatment.92 % of patients were found to be low risk according to IPS scoring and 8 % patients were found to be high risk. ABVD was the commonly used regimen, few patient received Beacopp as an escalated strategy after interim PET scan results showed progression. In 34% of our patient, Involved field radiotherapy (IFRT) was given as consolidation post chemotherapy. Bulky disease was seen in 19 % of patients (7 Patients) of which 4 received IFRT and showed complete remission. Complete remission achieved with treatment in stage l and ll disease was 82.4% and steep decline in complete remission with treatment was noted in stage lll and lV around - 71%. Of 38 patients, 29 patients went into complete remission (76.3%), 8 patients (18.4%) progressed even with treatment and 2 patients (5.3%) died during treatment.

5. Conclusion

Our study revealed a younger median age of presentation at 26 years compared to findings in other studies. Nodular sclerosis emerged as the most common histological subtype among the patients. In terms of treatment outcomes, early - stage disease demonstrated an 82% complete remission rate, while advanced - stage disease achieved a 71% complete remission rate, highlighting the effectiveness of the treatment regimens employed.

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