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WHO IS AT RISK?

PREDICTING BLEOMYCIN-INDUCED PULMONARY TOXICITY IN HODGKIN LYMPHOMA TREATMENT

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OBJECTIVE

Despite the high curability of Hodgkin Lymphoma (HL), bleomycin-induced pulmonary toxicity (BIPT)remains a key therapeutic challenge. This study examines predictors of BIPT in HL patients from Pakistan and Afghanistan, highlighting a seldom-reported LMIC population.

METHODS

A 5-year retrospective cohort of HL patients who received bleomycin at SKMCH&RC between January 2019 and August 2024 was analyzed. Demographic, clinical, toxicity, and treatment data were retrieved from electronic records, and multivariate logistic regression identified pulmonary toxicity risk factors.

RESULTS

- Among the 949 HL patients, 87.1% had received bleomycin, and of those **10.4%** developed pulmonary toxicity.
- Gender, smoking, and **socioeconomic status** had shown no significant association (p>0.05).
- **Partially supported** patients had higher BIPT rates (15.5%) than fully funded (9.8%) or self-supported (8.4%).
- BIPT risk rose with **Ann Arbor stage** (I 3.6%–IV 14.1%), higher cumulative (p=0.003) and total number of bleomycin doses (p<0.001).
- **Impaired baseline PFTs** had strongly predicted toxicity (DLCO≤72%,FEV1≤69%,TLC≤76%) (p<0.001).
- **Minimum eGFR** was reportedly lower in BPT cases (<84.2mL/min/1.73m²) (p=0.003).
- Lower toxicity rate in patients with **B symptoms** had no significance (p=0.198).
- The **use of GCSF** during chemotherapy (p=0.920), low baseline platelets, albumin and BMI had shown no impact (p=0.031).

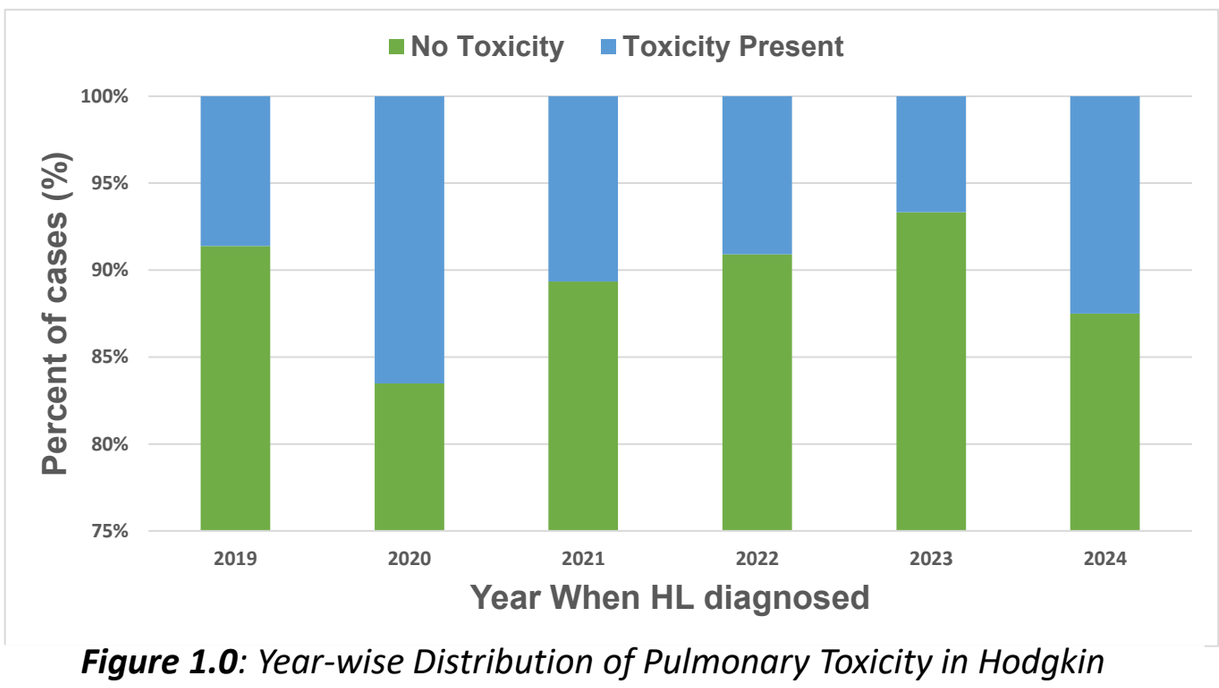

***Figure 1.0**: Year-wise Distribution of Pulmonary Toxicity in Hodgkin Lymphoma Patients Treated with Bleomycin*

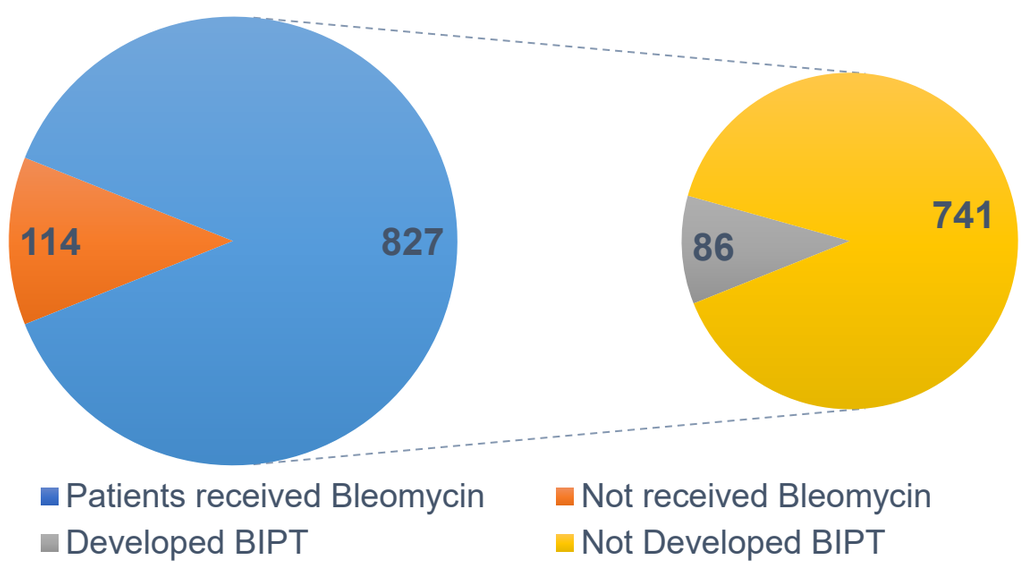

***Figure 1.1:** Prevalence of BIPT in Bleomycin-treated Hodgkin Lymphoma patients*

CONCLUSION

The risk of BIPT increases with advanced stage, higher cumulative and number of bleomycin doses, impaired baseline PFTs and renal function. However, demographics, B symptoms, low initial Platelets, Albumin and BMI were not predictive of BIPT incidence.