



Redefining Risk Assessment: Hasenclever Prognostic Variables As Predictors Of Central Nervous System Infiltration In Hodgkin Lymphoma Patients

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Background and Methods

Hasenclever International Prognostic Score (IPS) effectively stratifies overall HL prognosis, but its utility in predicting CNS involvement remains unexplored.

Given the devastating impact of CNS disease, identifying high-risk patients is crucial.

We analyzed 48 CNS-positive HL patients from 927 consecutive cases using Cox regression to evaluate IPS variables as CNS risk predictors.

Variables included age >45 years, male sex, stage IV disease, hemoglobin <10.5 g/dL, leukocytes >15×10⁹/L, lymphocytes <0.6×10⁹/L, and albumin <4 g/dL.

Results

Revolutionary risk associations emerged:

Variable	CNS risk increased	HR
Male sex	18%	1.18
Age >45	53%	1.53
Stage IV disease	53%	1.53
Hemoglobin <10.5	16%	1.16
Leukocytosis >15×10⁹/L	37%	1.37
Albumin <4 g/dL	3%	1.03

Surprisingly, lymphopenia <0.6×10⁹/L showed protective effects, reducing CNS risk by 10% (HR 0.9).

Mixed cellularity subtype predominated (45.8%) versus typical nodular sclerosis, suggesting histological risk stratification.

HIV coinfection was present in 12.5%, a 25-fold higher prevalence than in the general population.

EBV positivity (EBER 27%, LMP-1 25%) suggested viral-mediated CNS tropism.

High-risk IPS scores (≥4 points) were present in 47.9% of patients, compared to 8.3% with low-risk scores.

Median time to CNS involvement was 7 months (range 0–10.3 years), with 68.8% occurring during relapse/refractory phases.

Conclusion

Hasenclever IPS variables show novel utility in CNS risk stratification, identifying male sex, advanced age, and stage IV disease as major predictors.

The protective role of lymphopenia challenges traditional views and warrants further study.

These findings support CNS screening protocols in high-risk HL patients to enable earlier detection and intervention.

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