Cerebrospinal Fluid Characteristics in Central Nervous System Infiltration by Hodgkin Lymphoma: A 20-Year Single-Center Experience

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Background

Central nervous system (CNS) infiltration in Hodgkin's Lymphoma (HL) is exceedingly rare (0.02-0.5%).

Literature on this entity is limited to case reports and small observational studies, with no established consensus on diagnosis or treatment.

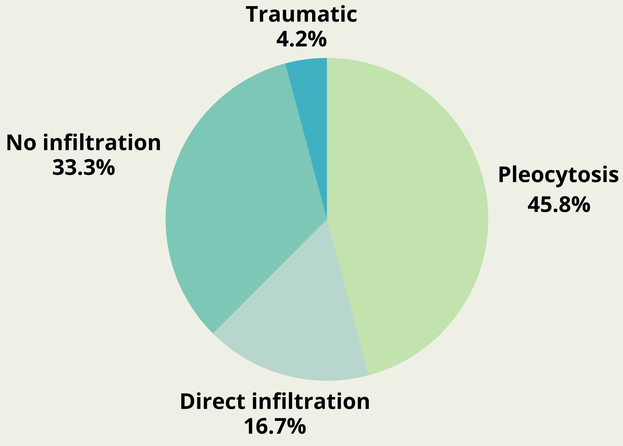
Methods

We conducted a retrospective single-center study at Mexico's National Cancer Institute (InCan) reviewing 1,024 electronic medical records from January 2004 to July 2024.

Among 927 patients with classical HL diagnosis, we identified 48 with confirmed CNS infiltration through imaging studies, cerebrospinal fluid analysis, or tumor biopsy.

CFS Analysis

Cerebrospinal fluid (CFS) analysis was performed in 24 patients (50%)



Logistic Regression Analysis

Predictive factors for CNS infiltration probablility:

Elevated CFS protein levels (>50 mg/mL)
OR 2.56 (p=0.551)

Abnormal glucose levels (<60 or >100 mg/mL)
OR 1.9 (P=0.666)

Note: Elevated leukocyte count, polymorphonuclear cells, mononuclear cells and LDH did not significantly increase infiltration risk

CFS Parameters

Parameter	Median	Range
Glucose	56 mg/mL	20-125
Proteins	50 mg/mL	20-786
Leukocytes	0X109/L	0-910
LDH	36.4 U/L	9.98-853.7

Conclusions

To our knowledge, this represents the largest cohort studying CSF parameters in HL with CNS involvement.

Our findings suggest that CSF protein levels and glucose abnormalities may be more sensitive indicators of CNS infiltration than cytological findings alone.

These results contribute to improving diagnostic approaches for this rare entity, particularly in cases where imaging findings are equivocal or biopsy is not feasible.

Future Directions

Further multicenter studies are needed to validate these findings and establish standardized diagnostic criteria for CNS involvement in HL.

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