Primary Bone Diffuse Large B-Cell Lymphoma (DLBCL) Is a Rare but Benign Entity in Comparison With Nodal DLBCL

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Introduction

- Primary bone lymphomas are rare - 1% of all lymphomas.
- Histological entity in most cases is DLBCL, T-cell variants are extremely rare.
- Any bone may be involved, long bones are most common.
- Typical symptoms: local swelling, intense pain.
- Standard treatment: 4–6 cycles R-CHOP ± radiotherapy (RT) (limited stage).
- The role of consolidative RT in the rituximab era is controversial.

Aims

- To evaluate the clinical characteristics and treatment outcomes of primary bone lymphoma (PBL)
- To assess the role and effectiveness of RT



Figure 1:involvement of the knee

Methods

- Retrospective search from approx. 4500 NHL cases treated between 2009–2024 at the National Institute of Oncology, Hungary.
- All received anthracycline-based chemoimmunotherapy (CIT), which in selected cases were followed by radiotherapy (RT).
- Response was determined by PET/CT scans.
- Patients not achieving complete remission (CR) after CIT received RT, followed by repeat PET/CT scan 8 weeks later.

Findings

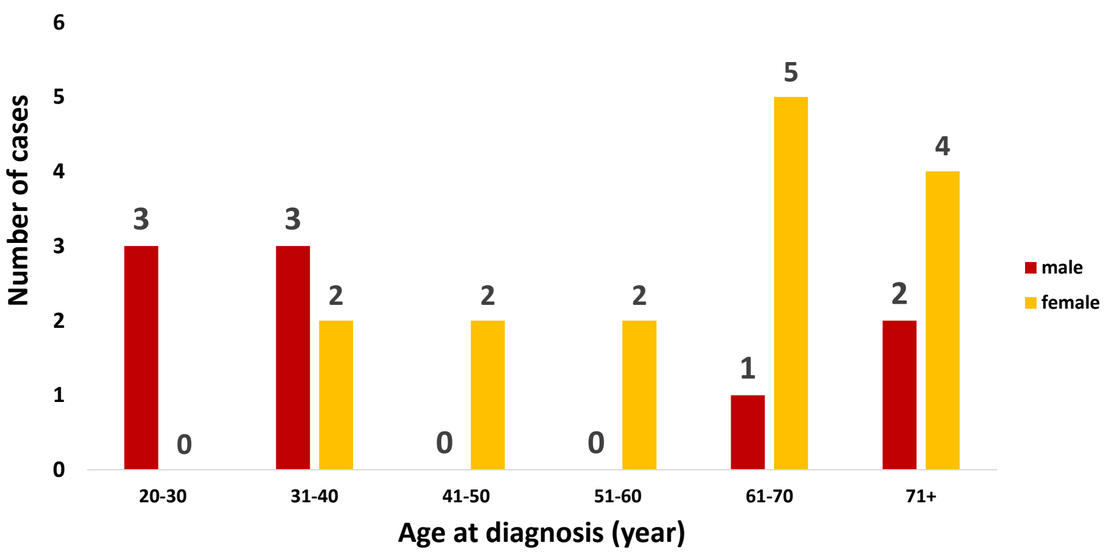


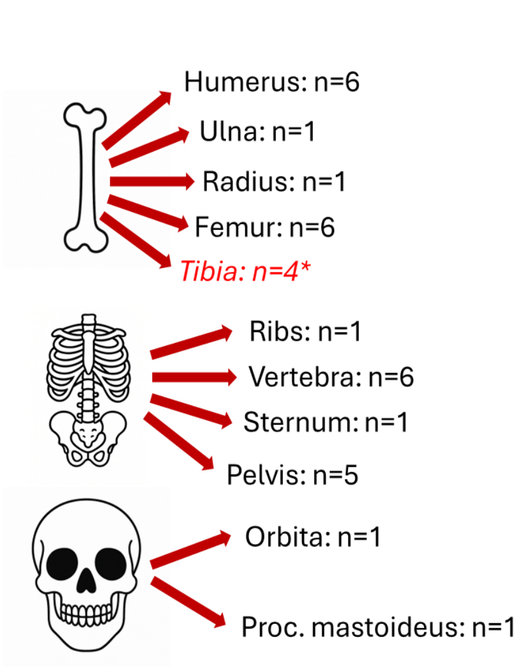
Figure 2: age distribution of the patients

Characteristics	All patients (N=24)
Age at diagnosis in years, median (range)	60 (25-88)
Sex N (%)	
Females	15 (62,5)
Males	9 (37,5)
DLBCL histology N (%)	24 (100)
Confirmed germinal center B-cell subtype	11 (45,8)
Confirmed activated B-cell subtype	1 (4,2)
NOS type	12 (50)
One bone involved N (%)	18 (75)
More than one bone involved N (%)	6 (25)
Fracture at diagnosis N (%)	5 (20,8)
B symptoms at diagnosis N (%)	5 (20,8)
Elevated LDH at diagnosis N (%)	11 (45,8)
Hypercalcaemia at diagnosis N (%)	3 (12,5)
Follow up in months, median (range)	54 (4-153)
Death N (%)	3 (12,5)
related to PBL	0 (0)
other cause	3 (12,5)

Figure 3: baseline patient characteristics

Treatment regimen	N	CR achieved after EOT PET/CT scan
3 cycles R-CHOP+hdMTX	1	1 (100%)
4 cycles R-CHOP	1	0 (0%)
4 cycles R-CHOP+RT	2	2 (100%)
4 cycles R-MBACOD	1	1 (100%)
5 cycles R-CHOP+RT	1	1 (100%)
6 cycles R-CHOP	10	5 (50%)
6 cycles R-CHOP+hdMTX	1	1 (100%)
6 cycles R-CHOP+RT	3	3 (100%)
8 cycles RCHOP	3	2 (67%)
8 cycles RCHOP+epcoritamab	1	0 (0%)

Figure 5: treatment regimens and response rates



* All patients with tibial involvement achieved only PR after first-line therapy.

Figure 4: distribution of bone involvements

- 24 cases were identified in the database, which refers to a similar incidence rate as it is reported in the literature.
- MTX-based treatment was applied in cases at risk for CNS involvement (2 cases of vertebral involvement, 1 case of orbital involvement), cerebrospinal fluid involvement was tested, however positive cases were not found.
- Seven patients who reached only partial remission (PR) after CIT were treated with RT, all of them converted to CR.
- Only one relapse (within half a year) occurred: the patient had humerus involvement, received 6 cycles of R-CHOP, histology confirmed GC subtype; after autologous stem-cell transplantation the patient remains in CR at 3 years.
- Consolidative RT after CIT (6 pts.) consistently achieved CR, even with <6 CIT cycles, no relapses were detected after that.

Conclusion

- PBL generally shows a surprisingly good long-term prognosis, especially with combined chemoradiotherapy.
- Our findings demonstrate that all those patients who received combined modality (CIT or CIT+IR) treatment achieved durable remission, even with <6 CIT cycles, while those who only received CIT first-line achieved only 50% CR.
- Although our case numbers are low and the role of RT remains debated, our experience suggests that the reduction of the systemic treatment is possible with the use of consolidation radiotherapy.

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