

1 INTRODUCTION

Canine B-cell lymphoma (BCL) is a common hematopoietic malignant neoplasm in dogs, similar to human non-Hodgkin lymphoma.

- 15-75 cases of BCL per 100,000 dogs

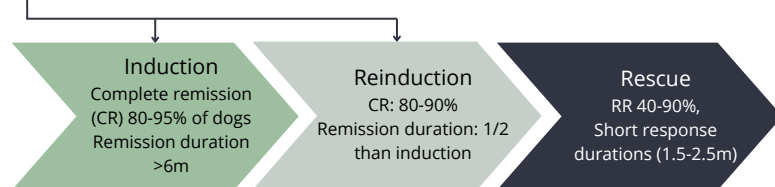
Objectives:

- Provide a comprehensive and up-to-date view of canine lymphoma (cL), specifying in BCL.
- Describe the classification and subtypes of BCL
- Review and compare available treatment options.
- Evaluate prognostic factors and survival data.

3 TREATMENT

CHOP chemotherapy (Cyclophosphamide, Doxorubicin, Vincristine, Prednisolone)

- More effective than single agent therapy
- Maintenance phase, pretreatment with glucocorticoids, add L-asparaginase, and increase intensity of treatment it's not beneficial.



Special treatment considerations:

- High-Grade Lymphomas: aggressive treatment required.
- Indolent lymphoma: wait and see +/- less aggressive therapy (chlorambucil/prednisone or cyclophosphamide/prednisone like)
 - sMZL: splenectomy +/- chemotherapy

Figure 5: Rescue protocols with better overall response (OR) and longer average duration of CR reported:

Rescue protocol	Overall response (%)	CR (%)	Median Response Duration	Median Duration of CR
Rabacfosaine	74	45	108	203
Lomustine, L-asparaginase, prednisone	82	59	67	101

2 BCL SUBTYPES ACCORDING TO OMS CLASSIFICATION SYSTEM

Figure 1: Characteristics of the most common canine B lymphomas.

Subtype	Localization	Cellular features	Survival (days)
Diffuse large B-cell lymphoma (DLBCL) 50-60% of cL	Multicentric lymphadenopathy	Large cells; round nuclei and >2 times erythrocyte diameter; one or multiple central nucleoli; high mitotic rate. Variants: <ul style="list-style-type: none"> • Centroblastic (DLBCL-CB): most common, multiple peripheral nucleoli. • Immunoblastic (DLBCL-IB): single prominent central nucleolus. 	300-365 (10-12 m)
Marginal zone lymphoma (MZL) 4-15% of cL	Nodal (nMZL) or splenic (sMZL) or extranodal mucosa	Intermediate size cells; abundant pale cytoplasm; irregular nuclei with peripheral chromatin and a single central nucleolus; uncommon mitotic figures (except nMZL)	nMZL: 255 (8,5 m) sMZL: 300-571 d (10-19m)
Mantle cell lymphoma (MCL) 0,7-1,8% of cL	Splenic white pulp	Small to medium-sized cells; scanty cytoplasm; discrete round nuclei with dense chromatin; mitotic rate varied.	502 (≈17 m)
Follicular lymphoma (FL) <1% of cL	Solitary or multiple lymphadenopathy	Mixed cells, mostly small; pale chromatin and discrete nucleoli (centrocytes) with fewer large cells with dark blue cytoplasm, vesicular nuclei and 1-3 nucleoli (centroblasts).	47-200 (1,5-6,6 m) vs >630 (>21 m)
Diffuse small cell lymphoma (DSBCL)	Lymphadenopathy	Small to intermediate sized cells, round to indented, nuclei 1-1.5 times the diameter of red blood cells, homogeneous eosinophilic cytoplasm.	140 (≈4,5 m)

4 PROGNOSIS FACTORS

- General prognosis factors:
- Immunophenotype and WHO subtype.
 - WHO stage and substage
 - Anatomical location
 - Serum biomarkers
- DLBCL prognosis factors:
- Mitotic index
 - GCB and ABC subtypes
 - Others

5 CONCLUSIONS

- **Advancements in Diagnosis: morphological, molecular, and FC improvements.**
- **Treatment: no evolution based on WHO histotype classification**
- **Characterization role: limited in treatment, except for indolent lymphomas.**
- CHOP for intermediate/high-grade BCL.
- **Challenges:** frequent recurrence; need for improved remission duration and survival.
- **Future Directions:** development of new chemotherapeutic methods and targeted **immunotherapies.**

6 REFERÈNCIES

