

MALIGNANT LYMPHOMAS AND CHRONIC LYMPHOID LEUKEMIA (ANATOMOCLINICAL STUDY)

D. LASTOFKA*, N. MANOLESCU**

*Faculty of Veterinary Medicine Bucharest

**Institute of Oncology Bucharest

Summary

The authors hold forth to create a standard for positive and differential diagnosis between malignant lymphomas and chronic lymphoid leukemia on canine specie. The study was drawn reviewing 97 cases studied at the Faculty of Veterinary Medicine in the last years (82 cases were malignant lymphoma and 15 cases were chronic lymphoid leukemia).

Key words: canine malignant lymphoma, canine chronic lymphoid leukemia, hematology, cytology

Lymphoma accounts for approximately 18 % of all reported malignancies and 80% of all haemopoietic tumors on dog. Middle-aged dogs are most commonly affected, although animals as young as 6 months have been diagnosed with lymphoma. The diagnosis of lymphoma is relatively easy to make via fine needle aspirate, biopsies are usually necessary for diagnosis. Lymphoma is almost a systemic disease, therefore staging is often recommended to determine the extent of disease for prognostic and monitoring purposes.

Myeloid neoplasms have undergone a revision in their classification that has been recently published by World Health Organization. The reclassification not only involves morphologic and cytochemical findings but in addition includes genetic, immunophenotypic, prognostic, and clinical features to define specific disorders.

Materials and methods

The anatomic-clinical study was drawn on 82 cases of malignant lymphoma (ML) on dogs and 15 cases of chronic lymphoid leukemia (CLL) on the same specie.

The most important anatomic-clinical data indispensable and decisive for positive and differential diagnosis were obtained using two types of investigations. One of them is cytohematologic investigation and the other is tumor puncture. The puncture is made with a fine needle on different lymphonodes (on animals who have external lymphonodes expanded in volume – different types of nodes).

These two exams can provide in the same time the positive diagnosis and also the differential one.

In this study the authors debate only the positive and differential diagnosis problem using the standardization of malignant lymphomas and chronic lymphoid leukemia on canine specie.

Results and discussions

The standardization of the positive and differential diagnosis on malignant lymphoma in dogs:

Non-Hodgkin's lymphoma (NHL).

An anatomoclinical classification includes four tips of NHL :

- NHL that affects exclusively the palpable lymph nodes;
- NHL that affects exclusively the impalpable lymph nodes (from thoracic and abdominal cavity);
- NHL that affects exclusively both the palpable and impalpable lymph nodes;
- extra-lymph node NHL:
 - tegumental – epidermiotrop ;
 - "T"cellular proliferations ;
 - Sezary syndrome and/or mycosis fungoides;
 - nonepidermiotrop;
 - "B" cellular proliferations;
 - testicular
 - Waldeyer's tonsillar ring;
 - Thyroid (Hashimoto's Thyroiditis malignisation);
 - Gastroenterocolic;
 - central nervous system;
 - splenic.

This standardization maded exclusively from anatomoclinical point of view and has no relation with the citohistopatological classification, but it is prerequisite for diagnosis and therapy.

The gravity classes of malign lymphoma/CLL are as fallow:

Lymph node NHL

Class I.a. - palpable one-sided adenopathy; small tumoral cells, poor basophilic, without mitosis, without cytemia.

Class I.b. - palpable one-sided adenopathy; mixture of small and large tumoral cells poor basophilic, without mitosis, without cytemia.

Class I.c. - palpable one-sided adenopathy; large tumoral cells poor basophilic, presence of mitosis, without cytemia.

Class II.a. - palpable two-sided adenopathy, mixture of small and large tumoral cells poor basophilic, presence of mitosis, without cytemia.

Class II.b. - palpable two-sided adenopathy, large tumoral cells poor basophilic, presence of mitosis, without cytemia.

Class III - generalized adenopathy (palpable and internal lymph nodes are affected), presence of cytemia, hepatosplenomegaly irrespective of proliferated cell type, poor basophilia, mitosis.

Class IV - irrespective of adenopathy type and presence or absence of hepatosplenomegaly the proliferated cells are mixed and deep basophilic (small and large cells), frequently mitosis.

Extra-lymph node NHL

Class I.a. – illness of affected organ (lymphoproliferative focus), small proliferated cells, absence of local metastasis and cytemia.

Class I.b. - illness of affected organ - local metastasis, small proliferated cells, without cytemia.

Class II - illness of affected organ, local metastasis, large proliferated cells, presence of cytemia.

Hodgkin's lymphoma (HL)

Class I.a. - one-sided adenopathy

- Hodgkin's pre-granuloma.

Class I.b. - two-sided adenopathy

- Hodgkin's granuloma.

Class II.a. – poli-adenopathy on the same side of diaphragm

- Hodgkin's granuloma.

Class II.b. - poli-adenopathy on both sides of diaphragm

- lymphoid depletion.

Class III - irrespective of lymph node condition, presence of splenomegaly and nodal invasion

- Hodgkin's sarcoma.

Chronic lymphoid leukemia (CLL)

Class I.a. – moderate persistent lymphocytosis, without atypical cells

Class I.b. - grave lymphocytosis, without atypical cells

- debut of pancytopenia – anemia, trombocytopenia, neutropenia.

Class II - grave lymphocytosis with many atypical cells, grave pancytopenia

Class III - grave lymphocytosis with many atypical cells, marrow invasion.

Clasa IV - grave lymphocytosis with many atypical cells, pancytopenia, marrow invasion, internal organs invasion, multiple adenopathy.

Conclusions

1. The diagnosis standardization offers a real guide of diagnosis on some malignant haemopathy (ones with chronic development) for veterinary oncologist clinician.

2. The same standardization offers a guide for a precise diagnosis among CLL, HL and NHL.
3. This standardization that we offer is in fact a classification in anatomoclinical evolution of CLL, HL and NHL. This classification was achieved for the first time in veterinary oncology in canine specie and it offers an excellent therapeutic guide (the disease evolution and prognostic).
4. The anatomoclinical classification described needs to be filled with TNM, cellular G and also cytohistopathological types of malignant haemopathies in canine specie.

References

1. **Ruthanne Chun** – Canine lymphoma: managing without maintenance chemotherapy. The North American Veterinary Conference 2006, p 764.
2. **ES Jaffe et al.** World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of Haematopoietic and Lymphoid Tissues. IARC Press. Lyon, France; 2001, 15-107.
3. **Rose E. Raskin** – Chronic idiopathic myelofibrosis – diagnosis and treatment. World Congress WSAVA p. 667-669.
4. **JW Vardiman et al.** – The World Health Organization (WHO) classification of the myeloid neoplasm. Blood. 2002; 100: 2292-2302.