

NEOPLASTIC DISEASES OF LEUCOCYTES (LEUKEMIA)

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LEUKEMIA

A Neoplastic disease arising in hemopoietic tissues in which increased numbers of immature or abnormal white blood cells appear in the blood or are disseminated diffusely through the bone marrow.

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Facts and theories regarding the etiology of leukemia

- Viral complex infection.
- Genetic influence.
- Ionizing radiations.

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TYPES OF LEUKEMIA

Leukemic leukemia

Extreme leukocytosis

Leukemic cells in blood

Subleukemic leukemia

WBCS count normal or blow

Leukemic cells in blood

Alukemic Leukemia

WBCS count normal or blow

No Leukemic cells in blood

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DIAGNOSIS OF LEUKEMIA

In all aleukemic and subleukemic leukaemias, bone marrow examination is essential to establish diagnosis

Confirmation of leukemia is made by:

1. Total leukocytes count.
2. DLC.
3. PCV.
4. Bone marrow examination.

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Classification of leukemia

1. According to the duration
2. According to the type of cells
 - A. Granulocytic leukemia
 - B. Agranulocytic leukemia
3. According to the clinical signs

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Types of leukemia

1. Bovine leukaemia
2. Ovine leukaemia
3. Equine leukaemia
4. Canine leukaemia
5. Feline leukaemia

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1. Bovine leukemia

Lymphocytic in origin

Lymph node

Spleen

Thymus



Malignant Lymphoma

Multicentric

All lymph nodes enlarged



Lymphosarcoma

Unicentric

Spread by metastasis.

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1. Bovine leukaemia

Bilateral enlargement of all superficially located lymph nodes

Enlargement of tissues normally rudimentary as thymus

Splenomegaly, hepatomegaly and enlargement of the heart

The pressure of neoplastic masses on nerves or spinal cord may produce partial or complete paralysis

presence of immature lymphocytes in blood as lymphoblast and prolymphocytes.

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2. Ovine leukemia

- Leukemia in sheep is rare than in cattle this because the life span of sheep is small (2-6 years).
- Clinical signs as in bovine leukaemia in addition to presence of subcutaneous collection of lymphatic tissues.

3. Equine leukemia

As in bovine leukemia.

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4. Canine leukemia

Commonly occurs in canine especially at 7 years old

Myelogenic
leukemia

Lymphocytic
leukemia

Monocytic
leukemia

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4. Canine leukaemia

Myelogenic leukemia

Leucocytosis

Neutrophilia, eosinophilia
or basophilia

Myelophthysis

Hyperplasia of the
bone marrow

Dogs (2-3 Years)

Lymphocytic leukemia

Leucocytosis

Lymphocytosis

Myelophthysis

Enlargement of
lymph nodes

Loss of weight

Distension of
the abdomen

Monocytic leukemia

Leucocytosis

Monocytosis

Myelophthysis

Depression and
chronic cough

Bone marrow
infiltration

Dogs 4 years old

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