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**
  - Experimental studies on the transmission of leukaemia clearly demonstrated that inbred lines of chicken and mice give more uniform results than heterogeneous animals.
- **Ionizing radiations.**

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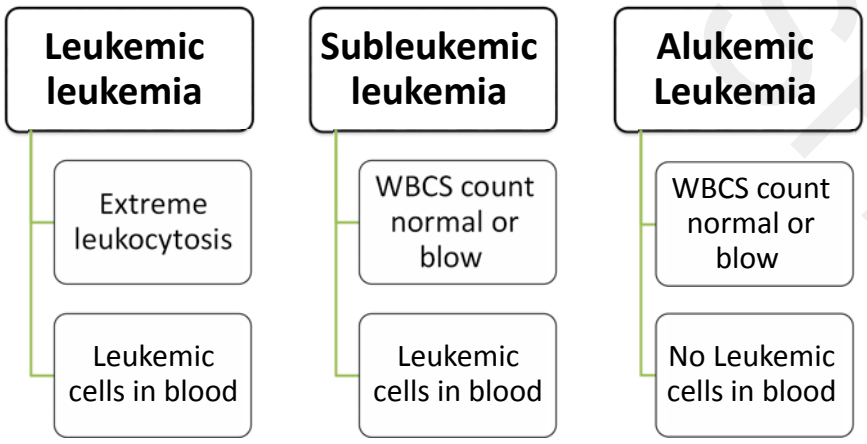
TYPES OF LEUKEMIA



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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**
   - Clinical leukaemia.
   - Subclinical leukemia.

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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

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Malignant Lymphoma	
Multicentric	All lymph nodes enlarged

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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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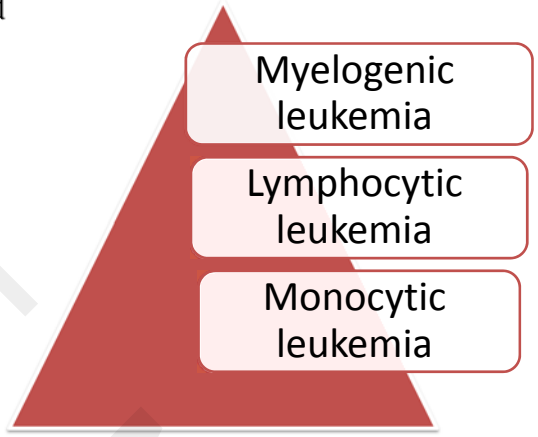
4. Canine leukemia

Commonly occurs in canine especially at 7 years old



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4. Canine leukaemia

Myelogenic leukemia	Lymphocytic leukemia	Monocytic leukemia
Leucocytosis	Leucocytosis	Leucocytosis
Neutrophilia, eosinophilia or basophilia	Lymphocytosis	Monocytosis
Myelophthesis	Myelophthesis	Myelophthesis
Hyperplasia of the bone marrow	Enlargement of lymph nodes	Depression and chronic cough
Dogs (2-3 Years)	Loss of weight	Bone marrow infiltration
	Distension of the abdomen	Dogs 4 years old

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