

# LYMPHOMA—CATS

## BASICS

### OVERVIEW

- Lymphocytes are a type of white-blood cell that are formed in lymphatic tissues throughout the body; lymphocytes normally are involved in the immune process
- Lymphoma is cancer (malignancy) of lymphocytes that usually involves lymph nodes or other lymphatic tissue of the body
- Lymphoma in cats is found in various anatomic locations in the body, including the mediastinum (known as the “mediastinal form of lymphoma”)—the mediastinum is the center portion of the chest that contains the heart and other organs (except for the lungs); the gastrointestinal tract (known as the “alimentary form of lymphoma”); the kidneys (known as the “kidney or renal form of lymphoma”); multiple organs/tissues throughout the body (known as the “multicentric form of lymphoma”); and a single organ/tissue in the body (known as the “solitary form of lymphoma”)
- Another term for lymphoma is “lymphosarcoma”

### SIGNALMENT/DESCRIPTION of ANIMAL

#### Species

- Cats

#### Mean Age and Range

- Mean age of feline leukemia virus (FeLV)-positive cats with lymphoma—3 years
- Mean age of FeLV-negative cats with lymphoma—7 years
- Median age of cats with localized lymphoma, outside of the lymph nodes—13 years

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Depend on anatomic form
- Mediastinal form (located in the center of the chest)—open-mouthed breathing; coughing; regurgitation; lack of appetite (anorexia); weight loss; the front part of the chest is very firm and resistant to gentle compression during physical examination
- Alimentary form (located in the gastrointestinal tract)—lack of appetite (anorexia); weight loss; sluggishness (lethargy); vomiting; constipation; diarrhea; black, tarry stools, due to the presence of digested blood (known as “melena”); frank blood in the stool; thickened intestines or abdominal masses
- Kidney or renal form—consistent with kidney failure (such as vomiting; lack of appetite [anorexia]; increased thirst [known as “polydipsia”]; increased urination [known as “polyuria”]; and sluggishness [lethargy]); large, irregular kidneys
- Multicentric form (located in multiple organs/tissues throughout the body)—possibly none in early stages; lack of appetite (anorexia), weight loss, and depression with progression of disease; enlargement of lymph nodes throughout the body
- Solitary form (located in a single organ/tissue)—depends on location; nasal lymphoma—usually sneezing, nasal discharge, and occasionally facial deformity; spinal-cord lymphoma—quickly progressing partial paralysis of the hindquarters may be seen; cutaneous (skin) lymphoma—itchiness (known as “pruritus); bleeding (hemorrhage); or masses on the skin accompanied by hair loss (hair loss known as “alopecia”)
- All forms—fever; dehydration; depression; extreme weight loss with muscle wasting (known as “cachexia”) in some patients

### CAUSES

- Feline leukemia virus (FeLV) infection—patients inconsistently test positive during illness (for example, 85% with the mediastinal form, 45% with the kidney form, 20% with the multicentric form, and 15% with the alimentary forms of lymphoma test positive on FeLV test)

### RISK FACTORS

- Feline leukemia virus (FeLV) exposure

## TREATMENT

### HEALTH CARE

- Outpatient, whenever possible
- Radiation therapy—may be used for localized lymphoma; relapses outside the radiation field are not uncommon
- Consult a veterinary oncologist to help assess best option(s) for treatment

### ACTIVITY

- Normal

### DIET

- No change in most cases; may require dietary change if cat has kidney failure

## **SURGERY**

- To relieve intestinal blockages or obstructions and to surgically remove individual tumors
- To obtain biopsy specimens for microscopic examination

## **MEDICATIONS**

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Chemotherapy—used in a combination or sequential protocol; some protocols have induction and maintenance periods
- Combination chemotherapy (induction)—vincristine, cyclophosphamide, cytosine arabinoside, and prednisone
- Combination chemotherapy (maintenance)—methotrexate, chlorambucil, prednisone, and vincristine
- Sequential chemotherapy—week 1: vincristine, l-asparaginase, and prednisone; week 2: cyclophosphamide; week 3: vincristine; week 4: methotrexate; then repeat the cycle; maintenance: lengthen the time between each treatment
- Other protocols (such as the University of Wisconsin-Madison protocol) can be used
- Recurrence of lymphoma—doxorubicin, vinblastine, actinomycin-D, mitoxantrone, nitrogen mustard, procarbazine, and lomustine
- Low-grade intestinal lymphoma has responded to Leukeran® and prednisone
- **Prednisone** alone—can be used to decrease clinical signs and improve how the cat feels; temporary response, not a cure

## **FOLLOW-UP CARE**

### **PATIENT MONITORING**

- Physical examination, complete blood count (CBC), and platelet count—before each weekly cycle of chemotherapy
- X-rays—as necessary

### **PREVENTIONS AND AVOIDANCE**

- Avoid exposure to or breeding feline leukemia virus (FeLV)-positive cats

### **POSSIBLE COMPLICATIONS**

- Low white-blood cell counts (known as “leukopenia”)
- Generalized bacterial infection (sepsis)

### **EXPECTED COURSE AND PROGNOSIS**

- Depends on initial response to chemotherapy, anatomic type, feline leukemia virus (FeLV) status, and tumor burden
- Mean survival with complete remission—7 months
- Median survival with partial remission—2.5 months
- Median survival with no response to treatment—1.5 months
- Mediastinal form (located in the center of the chest)—about 10% of patients with live more than 2 years
- Median survival with alimentary form (located in the gastrointestinal tract)—8 months
- Median survival with peripheral multicentric form (located in multiple organs/tissues: “peripheral” refers to tissues away from the center of the body)—23.5 months
- Median survival with kidney form—if feline leukemia virus (FeLV)-negative, 11.5 months; if FeLV-positive, 6.5 months
- Median survival with a low tumor burden—if feline leukemia virus (FeLV)-negative, 17.5 months; if FeLV-positive, 4 months
- Treated with prednisone alone—patients live 1.5 to 2 months
- Median duration of complete remission from localized lymphoma—114 weeks
- Can get long-term survival with low-grade lymphoma

## **KEY POINTS**

- Cure is possible, but highly unlikely
- Goal is to induce remission and achieve a good quality of life for patients for as long as possible