



The Pet Oncologist

QUICK FACT SHEET FOR 10 CANCERS IN DOGS & CATS

Cancer (species)	Prognosis	Treatment options	Side effects	Comments
Multicentric high-grade lymphoma (dogs)	<ul style="list-style-type: none"> - No treatment = median survival <1-2 months. - Prednisolone = median survival 1-2 months. - Many prognostic factors. 3 most important prognostic factors = immunophenotype (B- vs. T-cell), stage (I-V) & substage (well vs. sick). 	<ol style="list-style-type: none"> 1) Multiagent chemotherapy = median survival 6-12 months. 2) Doxorubicin = median survival 6-9 months (B-cell). T-cell = worse. 3) COP = median survival 6 months. 	<ul style="list-style-type: none"> - Chemotherapy side effects are well tolerated. 80-90% = no side effects. 10-20% = gastrointestinal, often managed with supportive home medications. 5% = hospitalisation (e.g. sepsis). <1% = death. 	<ul style="list-style-type: none"> - Most dogs respond to chemotherapy & can go into complete remission. Cure rate = 5-10%. - Indolent lymphomas (5-29% of canine lymphomas) are less aggressive & have a better prognosis.
High-grade lymphoma (cats)	<ul style="list-style-type: none"> - No treatment or prednisolone = median survival <2 months. - Many prognostic factors. The most important positive prognostic factor = achieving complete remission with therapy. 	<ol style="list-style-type: none"> 1) Multiagent chemotherapy = median survival 4-12 months. 2) Lomustine or cyclophosphamide = less successful. 	<ul style="list-style-type: none"> - See above, except cats generally tolerate chemotherapy better than dogs (90%). The most common side effect from chemotherapy is inappetence/anorexia. 	<ul style="list-style-type: none"> - 50-70% of cats respond to multiagent chemotherapy. - 20% of cats can survive >2 years with multiagent chemotherapy.
Low-grade alimentary lymphoma (cats)	<ul style="list-style-type: none"> - No treatment = most cats impacted by cancer within 6 months. 	<ol style="list-style-type: none"> 1) Chlorambucil & prednisolone = median survival 1.5-3 years. 2) Cyclophosphamide, lomustine or multiagent chemotherapy = when cats fail to respond to 1). 	<ul style="list-style-type: none"> - Chlorambucil & prednisolone has a low risk of side effects than conventional chemotherapy & typically mild (5-30%). 	<ul style="list-style-type: none"> - 85-95% of cats respond to therapy. - Occasionally, will not respond to therapy, transform into high-grade lymphoma or develop a second malignancy. Worse prognosis.
Cutaneous mast cell tumours (dogs)	<ul style="list-style-type: none"> - Variable biologic behaviour & prognosis. Some cured with surgery alone, whilst others can die within 3 months despite aggressive treatment. - Many prognostic factors. The 2 most important prognostic factors are grade & mitotic count. 	<ol style="list-style-type: none"> 1) Surgery = the treatment of choice. Complete margins recommended. Radiation therapy can be considered for incomplete margins. 2) Surgery & chemotherapy (e.g. vinblastine/lomustine/prednisolone) = high-risk cases. 3) Palladia®, vinblastine, lomustine, prednisolone, radiation therapy & other drugs = palliation of unresectable or metastatic mast cell tumours. 	<ul style="list-style-type: none"> - Chemotherapy side effects are well tolerated (80-90%). See previous. - Palladia® can cause gastrointestinal signs, lethargy or weight loss in 20-25% of dogs. Uncommon side effects such as hypertension, proteinuria, neutropenia, shifting lameness & hepatopathy can occur. Most side effects resolve with temporary discontinuation ± supportive medications. 	<ul style="list-style-type: none"> - Dogs may have >1 at presentation & can develop more throughout their lifetime. Check all cutaneous masses & treat each mast cell tumour individually. - Thorough staging recommended, particularly locoregional lymph nodes, which can contain metastasis even if normal in size. - Prednisolone/anti-histamines/gastroprotectants = palliation of macroscopic mast cell tumours.
Appendicular osteosarcoma (dogs)	<ul style="list-style-type: none"> - No treatment = most dogs will become refractory or pain relief medications within a few months. - Many prognostic factors. 3 most important negative prognostic factors = presence of metastasis, elevated serum ALP & proximal humerus location. 	<ol style="list-style-type: none"> 1) Amputation & carboplatin = median survival 10-12 months. Similar survival outcomes for stereotactic or limb-sparing surgery & chemotherapy. 2) Amputation alone = median survival 4-5 months. 3) Palliative radiation therapy = >75% improved limb function & pain relief for an average of 2-3 months. 4) Samarium = 60-80% pain relief for an average of 2-3 months. 5) Zoledronate = 50% pain relief for >4 months. 	<ul style="list-style-type: none"> - Chemotherapy side effects are well tolerated (80-90%). See previous. - High risk of pathologic fracture (30-60%) with stereotactic radiation therapy. - Samarium can lead to transient drops in white blood cells & thrombocytopenia. - Zoledronate is well tolerated but can cause electrolyte disturbances, hypocalcaemia, nephrotoxicity, & other less common side effects. 	<ul style="list-style-type: none"> - Doxorubicin can be considered if dogs do not tolerate carboplatin. - Amputation is well tolerated in most dogs, even in large breeds with orthopaedic disease. - Limb-sparing can only be performed in some dogs & must be performed by an experienced surgeon. - Palladia® & metastasectomy can be benefit some dogs with pulmonary metastasis.



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<p>Splenic haemangiosarcoma (dogs)</p>	<p>- Prognosis primarily based on clinical stage followed by mitotic count.</p>	<p>1) Stage I = median survival 6 months with surgery & 12 months with surgery & doxorubicin-based protocols. Stage II = median survival 1-3 months with surgery & 3-9 months with surgery & doxorubicin-based protocols. 2) Stage I & II = median survival 6-7 months with surgery & metronomic chemotherapy.</p>	<p>- Chemotherapy side effects are well tolerated (80-90%). See previous. - Metronomic cyclophosphamide unlikely to cause side effects (<10%). Can cause sterile haemorrhagic cystitis but risk reduced when given concurrently with frusemide (<5%).</p>	<p>- Stage III (i.e. distant metastasis) = median survival of 1 month with surgery & 1-3 months with surgery & chemotherapy. - Yunnan Bai Yao & I'm Yunity can be given safely with chemotherapy.</p>
<p>Transitional cell carcinoma (dogs)</p>	<p>- No treatment = most dogs euthanised within 3 months (variable). - Many prognostic factors. Important negative prognostic factors include advanced clinical stage, presence of metastasis, prostate/urethral/trigone involvement & not receiving piroxicam & chemotherapy.</p>	<p>1) Mitoxantrone/vinblastine/carboplatin & piroxicam = median survival 10-12 months. 2) Chlorambucil & piroxicam = median survival 7 months. 3) Piroxicam = median survival six months.</p>	<p>- Chemotherapy side effects are well tolerated (80-90%). See previous. - Piroxicam well tolerated in most dogs, but occasionally lead to clinically significant gastrointestinal side effects, nephrotoxicity & hepatotoxicity. Firocoxib can be considered if dogs do not tolerate piroxicam.</p>	<p>- Most dogs will show clinical improvements with treatment. - Partial cystectomy followed by piroxicam & chemotherapy can improve survival in some dogs. Radiation therapy can also be beneficial. Careful selection required. - The Cadet <i>BRAF</i> test on a urine sample is a non-invasive test that can be considered for diagnosis.</p>
<p>Chronic lymphocytic leukaemia (dogs & cats)</p>	<p>- Variable clinical course of disease. - Most pets have an excellent prognosis with treatment. - Asymptomatic pets may not require treatment straight away. But most pets will eventually require treatment.</p>	<p>1) Chlorambucil & prednisolone = median survival 1.3 years (cats) & 1.2-2.7 years (dogs). 2) Melphalan, cyclophosphamide or multiagent chemotherapy can be considered when pets fail to respond to 1). 3) Prednisolone = palliation.</p>	<p>- Chlorambucil & prednisolone has a low risk of side effects & typically mild (5-30%).</p>	<p>- Most pets respond to treatment. - Most dogs have CD8+ cytotoxic T-cell granular lymphocyte subtype. - Most cats have CD4+ helper T-cell subtype. - Occasionally, will not respond to therapy, transform into high-grade lymphoma or develop a second malignancy. Worse prognosis.</p>
<p>Acute leukaemia (dogs & cats)</p>	<p>- Very poor prognosis & rapid clinical course. - No treatment = median survival 1-2 weeks. - Challenging to differentiate between stage V large-cell lymphoma & different types of acute leukaemia. However, important to try to distinguish because prognosis & treatment options differ.</p>	<p>1) Acute lymphoblastic leukaemia = multiagent chemotherapy. Median survival 3-6 months (dogs), 2-7 months (cats). 2) Acute myeloid/undifferentiated leukaemia = cytosine arabinoside & doxorubicin. Median survival = 0.5-2 months (dogs), 2-4 months (cats). 3) Prednisolone = palliation.</p>	<p>- Most pets present unwell & have marked cytopenias. Thus, high risk of chemotherapy side effects (30-50%). Important to give supportive care medications during chemotherapy to keeps feeling as well as possible.</p>	<p>- Flow cytometry peripheral blood/bone marrow or bone marrow aspirates gold standard for diagnosis.</p>
<p>Multiple myeloma (dogs & cats)</p>	<p>- Negative prognostic factors in dogs: hypercalcaemia, BJ proteinuria, renal azotaemia & extensive bone lysis. Unknown in cats but likely similar. - No treatment = median survival <3 months (variable).</p>	<p>1) Melphalan/prednisolone = median survival 1.5-2.5 years (dogs) & cyclophosphamide/prednisolone or melphalan/prednisolone = median survival 4-13 months (cats) 2) Radiation therapy & prednisolone = palliation.</p>	<p>- Chemotherapy side effects well tolerated (80-90%), except if marked cytopenia or unwell pets, there is a higher risk of chemotherapy side effects (30-50%). See previous.</p>	<p>- Most pets respond to treatment. - Hypercalcaemia & renal disease treated with aggressive IVF, hyperviscosity syndrome treated with plasmapheresis, urinary tract infections treated with appropriate antibiotics, prophylactic antibiotics if fever or low neutrophil counts, severe anaemia or bleeding treated with blood transfusions.</p>