VIVALDIS Animal Health

petsmile

The world of happiness

www.vivaldis.co.in | NOV-DEC 2018

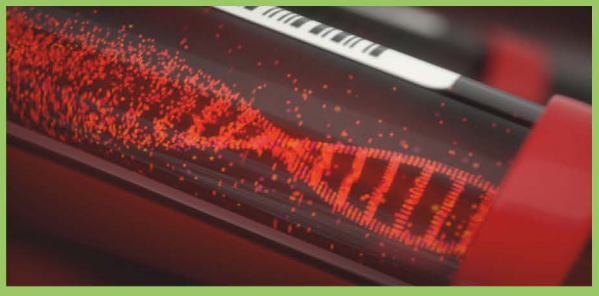
NEWS:

First veterinary patients treated using focused ultrasound

Relatively new, focused ultrasound is a non-invasive therapeutic technology that uses ultrasound energy guided by real-time imaging to kill tumors without surgery or radiation. Being non-invasive, focused ultrasound carries a reduced risk of infection, and the need for stitches and E-collars is eliminated. Focused ultrasound can also be used to ablate tissue or enhance the local delivery of therapeutic drugs. And because ionizing radiation is not involved, tumors can be treated in a single session—rather than the multiple visits required for radiation therapy—and the treatments can be repeated. Veterinarians will have new, innovative therapies to offer clients.

'Liquid biopsy' predicts lymphoma therapy success within days

Date: August 20, 2018, Source: Stanford Medicine
A blood test can predict which patients with a type of cancer called diffuse large B cell lymphoma are likely to respond positively to initial therapy and which are likely to need more aggressive treatment, according to a multi-center study. The study validates the clinical usefulness of tracking the rise and fall of circulating tumour DNA, or ctDNA, in the blood of patients before and after therapy. It suggests that clinicians may soon be able to determine how a patient is responding to treatment within days or weeks of starting therapy rather than waiting until therapy is completed five to six months later.



Accuracy of lymph node cytology for neoplasia diagnosis

Lymph node cytology is commonly used in companion animal medicine to differentiate causes of lymph-adenomegaly, including neoplasia and lymphadenitis. In a large-scale, retrospective study done to evaluate diagnostic sensitivity, specificity, and accuracy of lymph node cytology for various types of canine and feline neoplasia, it was found that the histologic gold standard, cytology had a mean diagnostic sensitivity of 66.6% and a mean diagnostic specificity of 91.5% for neoplasia. The diagnostic accuracy of cytology was 77.2%. Cytologic samples from 296 dogs and 71 cats obtained over an 11-year period and were compared with a histologic gold standard.

World's first HDR brachytherapy centre for pets targets tumours

A veterinarian and a medical doctor in Utah are delivering high dose rate (HDR) brachytherapy to canine and feline cancer patients. Recently received state approval for a radiation facility where animals can be treated on site at their Holladay location, the first dedicated radiation facility for pets in Utah and the first facility in the world dedicated to HDR brachytherapy for pets. HDR brachytherapy administers radiation via a robotically controlled radioactive seed that delivers a pinpointed burst of radiation directly into the tumour, applied via catheter. Brachytherapy is not painful and does not result in systemic side effects. Compared to other types of radiation, brachytherapy provides a higher dose of radiation and less exposure to normal tissues, it's less expensive, and is it better shaped to the tumour we are targeting.

Fifty percent of age 10 and older dogs likely to be diagnosed with cancer

Age is a contributing factor to cancer in dogs. Cancer is a leading cause of death for canines over the age of 2. Some breeds may have a genetic disposition to cancer when compared to others. Unknown bulges, swellings, or growths under a dog's skin could be a sign of cancer. Mast cell tumours are commonly diagnosed in mixed breeds and older dogs. Golden Retrievers, Bernese Mountain Dogs, and West Highland White Terriers as among the breeds that are prone to cancer. There are no bullet-proof measures for preventing cancer in dogs. Other than old age and genetics, cancer in dogs could be caused by their diet. So, maintaining a healthy diet for your dog may be one way to prevent cancer. What's not totally addressed in the veterinary oncology community is nutrition.

Clinical study on Ocoxin supplementation in the treatment of malignant superficial skin tumours in dogs:

A tumour is an abnormal growth of tissue resulting from uncontrolled, progressive multiplication of cells and serving no physiological function also known as neoplasm. A tumour does not always mean cancer, tumours can be benign (not cancerous), pre-malignant (pre-cancerous), or malignant (cancerous). There are many different types of tumours with various names. Their names usually reflect their shape and the kind of tissue they appear in.

Classical modalities for cancer therapy include surgery, radiation and chemotherapy. Cryosurgery, immunotherapy, hyperthermia and use of biological response modifiers are few others amongst the new modalities for cancer therapy (Riley and Riley, 1982).

Since the tumour cells are not dissimilar enough from the healthy cells to distinguish one from the other, the drug used against tumours may cause wide damage to systems, can be toxic to healthy cells and affect overall health of the patient by its side effects.

The surgical procedures in animals suffering from cancer involve risk because of the age factor as they mostly develop cancers at the age of seven and above commonly referred as "cancer age" (Moulton et al., 1990) in a total life span of 12 to 15 years. So, it is logical to think of alternative approaches like the use of antioxidants as a food supplement which may reduce the side effects of systemic chemotherapy.

The effectiveness of antioxidants in preventing cancer is a well known fact, many studies carried out at centres specialising in cancer treatment have shown that administering antioxidant drugs the same time as the chemotherapy and/or radiotherapy produces a noticeable anti-carcinogenic synergism and inhibits the toxicity of the standard treatment.

The studies were undertaken on twenty clinical cases of the malignant superficial tumour (more than 3 cm) and were divided in two equal groups. Group I were subjected to the surgical treatment (radical surgery); whereas group II dogs were subjected to the Ocoxin @ 1 ml/kg body weight orally for 30 days after surgical excision (radical surgery) of the tumour.

Study objectives:

1. To study the antitumor activity of biologically active food additive i.e. Ocoxin in dogs.
2. To study the effect of Ocoxin on recurrence, if any, of superficial malignant tumour.
3. To evaluate the quality of life of dogs included in this clinical study.

Trial study design:

Group	No. of dog (n)	Treatment
I	10	Surgical excision of superficial malignant tumours
II	10	Surgical excision of superficial malignant tumours + Ocoxin @ 2 ml/5 kg body weight orally twice in a day for first 3 days, followed by 1 ml/5 kg body weight for next 27 days twice in a day

Histopathological examination was carried out in all the cases before inclusion in the study.

The results obtained during the study are discussed and presented as below.

Details of study animals:

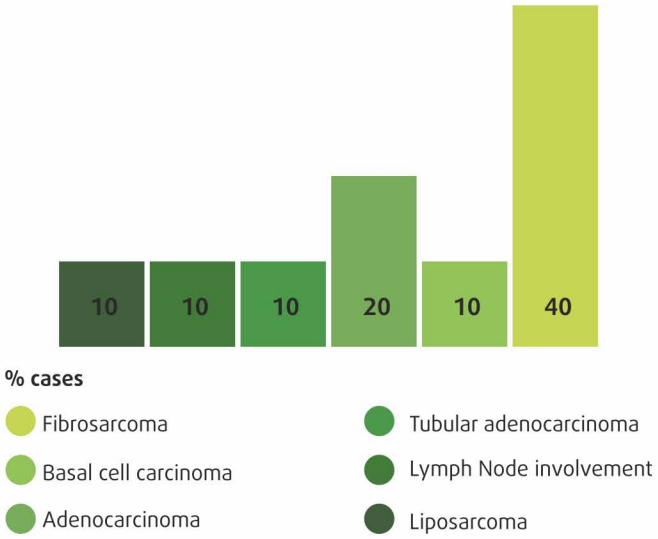
Parameters	Observations
Age	Average 10.5 yrs (85 % dogs > 8 yrs age; 15 % dogs < 8 yrs age)
Breed	Non-descript (60%), Pomeranarian (15%), German Shepherd & Labrador (10%), Rottweiler (5%)
Sex	60% tumours in female dogs; 40 % in male dogs
Tumour size	3 to 8 cm (45%); > 8 cm (55%)

Various types of tumours recorded during this study:

In the present study, the histopathological examination was carried out in all the cases and only after confirmation of malignancy, the cases were included in the study.

The histopathological examination was again carried out on 30th day of treatment from the surgical site in Group I and Group II, to assess the regression of the tumour on the basis of histomorphological examination.

During the study, various types of tumours e.g. fibrosarcoma, basal cell carcinoma, adenocarcinoma, tubular adenocarcinoma with local lymph node involvement, follicular malignant tumour and liposarcoma were recorded.



The location and size of tumour was recorded to find higher percent of the tumour on caudal abdominal region (25.00%) and limb region (25.00%) followed by thoracic region (20.00 %), cranial abdominal region (20.00 %) and head region (10.00%). However, the tumour with more than 8 cm size was observed more (55.00%) as compare to 3 to 8 cm (45.00 %).

Other parameters studied:	
Hematological parameters	Hemoglobin, Total erythrocyte count, Total leucocyte count, Packed cell volume, Differential leucocyte count & Total platelet count
Serum biochemical parameters	Serum glutamic oxaloacetate transaminase (SGOT), Serum glutamic pyruvate transaminase (SGPT), Serum glucose, Blood urea nitrogen (BUN), Serum creatinine & Alkaline phosphatase

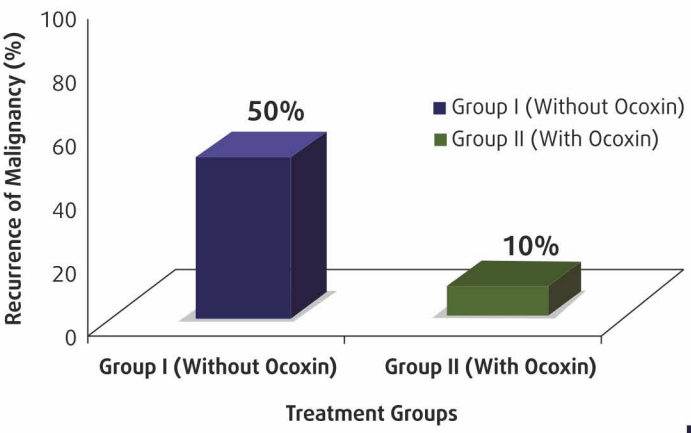
Group I were subjected to the surgical treatment; whereas group II dogs were subjected to the Ocoxin @ 2 ml/5 kg BW twice daily for 3 days and 1 ml/5 kg BW twice daily for 3 days orally for next 27 days after surgical excision of the tumour.

Results:

90 % reduction in the risk of tumour recurrence in Ocoxin supplemented group where as 50% recurrence was observed in non-Ocoxin group.

Percentage of recurrence of malignancy in various treatment groups with or without Ocoxin supplementation

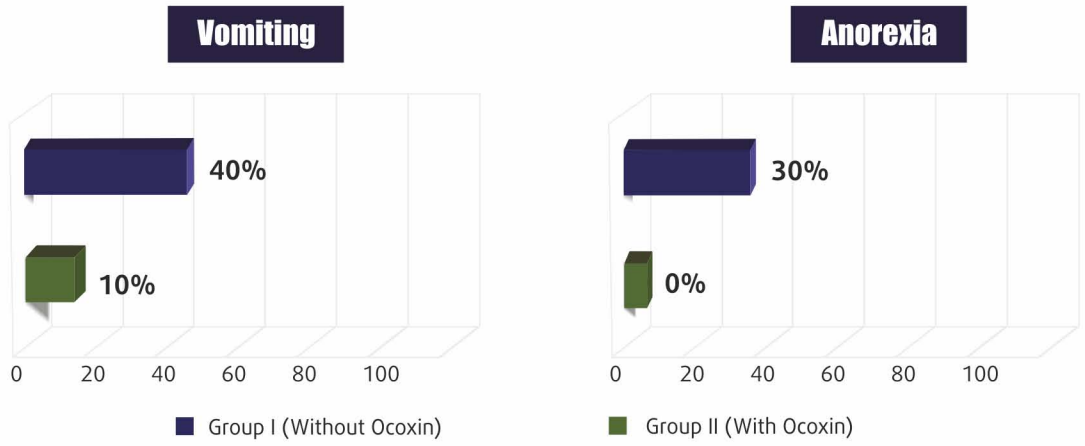
The site/ location of tumour were varied and hence the surgical technique was used according to the site and size of tumour. The recurrence was recorded in 5 (50%) cases in group I and in 1 (10%) cases in group II dogs.



The supplementation of Ocoxin can be adopted as a palliative line of treatment.

Substantial reduction in cancer associated symptoms in Ocoxin supplemented group when compared to non-Ocoxin group.

The study revealed gross reduction in size of tumour and the effects on the body were also noticed in terms of anorexia, vomiting and alopecia.



No significant alterations were observed in haemato-biochemical indices in Ocoxin supplemented group

Conclusions:

EFFECTIVE MODALITY IN CANCER THERAPY, WITHOUT ANY ADVERSE EFFECT	PREVENTS RECURRENCE OF TUMOURS	IMPROVES QUALITY OF LIFE IN CANCER PATIENTS
Against tumours of skin appendage & papillary adenocarcinoma, with no alteration in haemato-biochemical indices in dogs	Ocoxin helps in preventing recurrence of basal carcinoma & adenocarcinoma	Particularly in senile dogs & helps them perform minimum locomotory activities

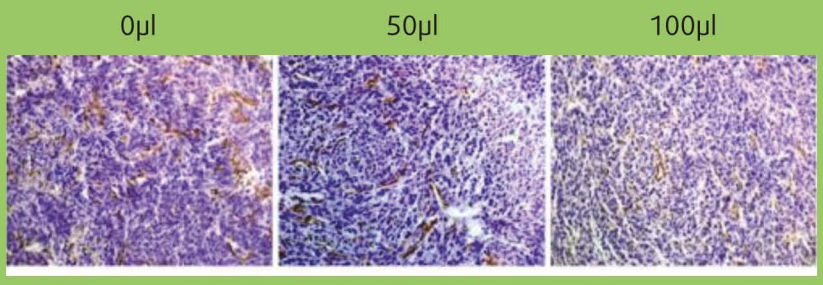
Ocoxin oral solution slows down tumour growth

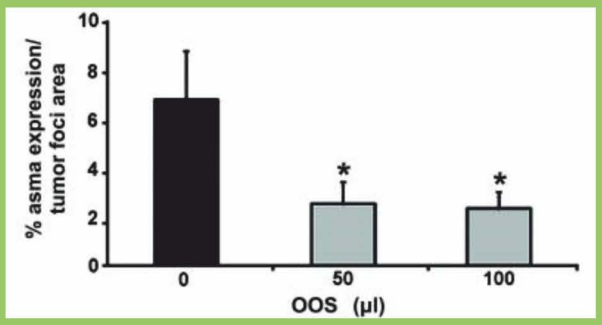
OOS: Viusid + Ocoxin

Green tea extract, Glycyrrhizic acid, Vitamin C, B6 and B12, minerals and amino acids

Ocoxin oral solution slows down tumor growth in an experimental model of colorectal cancer metastasis to the liver in Balb/c mice	
Anti-oxidant, anti-inflammatory Immuomodulatory	Novel effective complementary properties, improves QoL.
Reduces tumour cell proliferation	Increases efficacy of anti-metastatic therapy, increases apoptosis
Reduction in fibroblast recruitment to stroma	Reduced angiogenesis and tumour progression
Decreases expression of RNA levels	Slowdown of metastatic development of colorectal cancer
Decreased viability of tumour cells	Slowdown of colon carcinoma c26 growth
Reduced migratory potential of tumour cells.	Decrease in pro-migratory and pro- factors such as proteases and VEGF

The expression of ASMA (α-smooth muscle actin, the actin isoform predominates within vascular smooth-muscle cells and plays role in fibro-genesis) was quantified in metastatic liver tissue to analyze the infiltration by liver cancer-associated fibroblasts within the tumour foci. The levels of ASMA expression in liver tissue collected from mice treated with 50 and 100 µl of OOS was reduced by 50% compared to the liver tumours obtained from untreated mice.





In vivo HSC infiltration in the tumour is reduced by OOS. Expression levels of ASMA were analyzed in liver tissue by immunohistochemistry. ASMA was stained with specific antibodies in liver tissue collected from untreated, 50 and 100 µl OOS treated mice.'

OOS slows down the metastatic progression of CRC to the liver: Anti-oxidant and anti-inflammatory properties of this nutrient mixture induced an inhibition of proliferative and migratory potential of tumour cells which caused increase in the sensitivity to apoptotic signals and modulated metastatic development of colorectal cancer cells to the liver. OOS limits tumour infiltration by CAFs and inhibits production of inflammatory and angiogenic factors. Creates an unfavourable and non-permissive microenvironment for tumour growth leads to suppression of tumour growth. Thus, OOS helps in increasing the life time and quality for patients suffering from CRC liver metastasis.

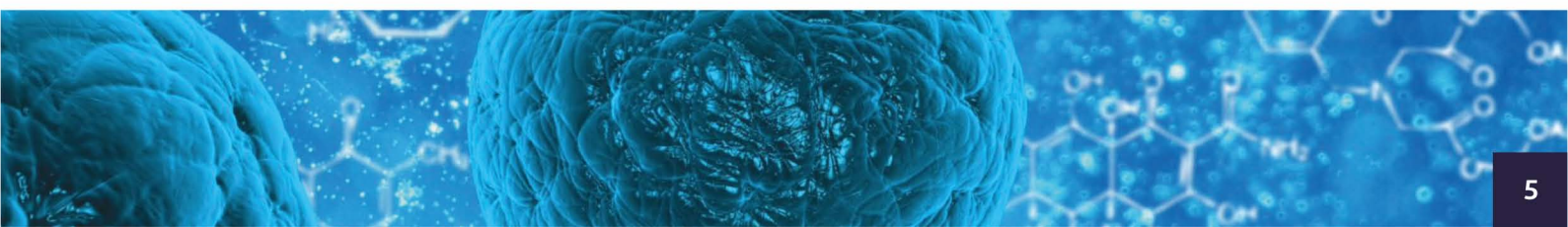
Creates an unfavourable and non-permissive microenvironment for tumour growth suppressing the final steps of tumour progression. OOS may constitute a pharmacologically safe complementary compound for the treatment of cancer and its metastasis slowing down the tumour growth, and, thus, increasing the life time and quality for patients suffering from CRC liver metastasis.

Oncol Rep. 2016 Mar; 35(3): 1265–1272. Published online 2015 Dec 16. doi: 10.3892/or.2015.4486

2016 AAHA Oncology Guidelines for Dogs and Cats

All companion animal practices will be presented with oncology cases on a regular basis, making diagnosis and treatment of cancer an essential part of comprehensive primary care. Because each oncology case is medically unique, these guidelines recommend a patient-specific approach consisting of the following components: diagnosis, staging, therapeutic intervention, provisions for patient and personnel safety in handling chemotherapy agents, referral to an oncology specialty practice when appropriate, and a strong emphasis on client support. Determination of tumor type by histologic examination of a biopsy sample should be the basis for all subsequent steps in oncology case management. Diagnostic staging determines the extent of local disease and presence or absence of regional or distant metastasis. The choice of therapeutic modalities is based on tumor type, histologic grade and stage and may include surgery, radiation therapy, chemotherapy, immunotherapy, and adjunctive therapies, such as nutritional support and pain management. These guidelines discuss the strict safety precautions that should be observed in handling chemotherapy agents, which are now commonly used in veterinary oncology. Because cancer is often a disease of older pets, the time of life when the pet–owner relationship is usually strongest, a satisfying outcome for all parties involved is highly dependent on good communication between the entire healthcare team and the client, particularly when death or euthanasia of the patient is being considered. These guidelines include comprehensive tables of common canine and feline cancers as a resource for case management and a sample case history.

(J Am Anim Hosp Assoc 2016; 52:181–204. DOI 10.5326/JAAHA-MS-6570)



Tumour type: Lymphoma. Common locations: Multicentric (node, spleen, liver) Skin, Mucocutaneous, CNS, Bone

Behaviour	Considered systemic disease with exception of epitheliotropic lymphoma which may localized to primary sites & some extranodal but ALL lymphoma has potential to be diseeminated. Some forms may be indolent and slow to progress (spleen or node)
Staging Tests	3-view chest radiographs | AUS | Immunophenotype | Histopathology as indicated (questionable cytology, solitary node, slowly growing nodes, desire for more detailed histology information) | Advanced imaging (CT/MRI if suspected CNS involvement)
Treatment options	Prednisone alone | Single agent & Multi agent chemo | CHOP (cyclophosphamide, doxorubicin, vincristine, prednisone) | Monoclonal antibody (T- and B- cell) | ± bone marrow transplantation | ± half-body radiation
Prognosis	Prednisone alone | MST approximately 2 mo | Single agents- variable response & durability but <1 yr | CHOP protocols | MST ~1 yr | Bone marrow transplantation, half-body radiation may have benefits
Negative prognostic factors	T-cell phenotype | Stage V (extranodal, bone marrow, GI) | Substage b (sick) | High grade, blastic

Tumour type: Mammary gland cancer. Common locations: One or more mammary glands

Behaviour	**OVH** prior to first estrus reduces risk for tumour development; risk rises rapidly with each additional cycle. **Individual** tumours may progress from benign to malignant; likelihood of malignancy increases with tumour size; dogs may present with multiple tumour types. **Metastatic** rate of malignant tumours is likely <50%.
Staging Tests	Primary tumour FNA has high accuracy for distinguishing benign from malignant tumours | 3-view chest radiographs | Regional lymph node FNA
Treatment options	Primary tumour Single malignant tumours: wide surgical excision with ~2cm margins ± deep fascia. Consider complete mastectomy for multiple tumours or developing multiple tumours over time. Systemic treatment **OVH** concurrent with or within 2 yr prior to tumour removal may improve survival.
Prognosis	An extremely wide range of MSTs has been reported for malignant tumours. A significant proportion of malignant tumours do not metastasize and can be cured with appropriate surgery.
Negative prognostic factors	Large tumour size | Ulceration of skin | Lymph node metastases | High histologic grade | Histologic vascular/ lymphatic invasion | Elevated proliferation indices | Lack of hormone receptor expression | Sarcomas associated with poorer outcomes than carcinomas

Tumour type: Osteosarcoma. Common locations: Proximal humerus, distal radius, distal femur, proximal and distal tibia

Behaviour	>95% of dogs have pulmonary micrometastases on presentation; rare skeletal metastases
Staging Tests	Essential 3-view chest radiographs Optional Bone scintigraphy or radiographic bone survey, AUS
Treatment options	Primary tumour Amputation, limb sparing surgery or stereotactic RT Systemic treatment Carboplatin or doxorubicin-based chemo-therapy
Prognosis	Amputation alone MST ;5 mo Amputation and chemotherapy MST ;12 mo
Negative prognostic factors	Elevated serum ALP | Proximal humeral location

Tumour type: Mast cell tumour. Common locations: skin and subcutaneous tissues

Behaviour	Locally invasive with invasiveness proportional to grade Metastatic potential: (Patnaik system) Grade 1: rare metastases | Grade 2~20% | Grade 3~100% | High grade tumours may secrete histamine, heparin.
Staging Tests	Pretreatment staging is optional for Grade 1 and small tumours exhibiting slow growth. Biopsy for determination of histologic grade for any non-resectable, large or rapidly growing tumour. FNA biopsy of regional lymph node. AUS and FNA of spleen or liver if enlarged; if nodal metastases or systemic signs present; or if known grade 3 tumour.
Treatment options	Primary tumour Surgical excision: with 2 cm margins, including a fascial plane below. Wider margins: for high grade tumours. Scar excision: if margins are histologically incomplete. RT: if adequate margins could not be provided or margins are incomplete. Systemic treatment Vinblastine-based chemo TKIs | Ancillary therapy H1 and H2 blockers for patients with large tumours, known grade 3 tumours or GI symptoms.
Prognosis	Primary tumour Grade 1 & 2 tumours cured by surgery. When margins are histologically incomplete, local recurrence rates are ~20–30%. If wide margins cannot be provided, RT provides 2 yr local control rates >85%. Metastases Most patients eventually die regardless of treatment. Survival periods are highly variable. Prolonged MSTs & high 1 and 2 yr survival rates in ''high risk'' patients receiving Vinblastine. TKIs produce a high response rate in grossly measurable tumours.
Negative prognostic factors	Large tumours | Higher histologic grades | Lymph node or distant metastases | Mucous membrane locations | High mitotic index, proliferation indices, microvessel density | C-kit mutation | Histologically incomplete surgical margins | Previous local recurrence | Systemic illness

Tumour type: Soft tissue sarcoma (mesenchymal tumours including fibro-sarcoma, peripheral nerve sheath tumour, and others). Common locations: Skin and subcutaneous tissues

Behaviour	Locally invasive; invasiveness proportional to Grade (Mitotic index). Overall metastatic rate is ~20%; increases with grade: Grade 1 and 2 ~15%, Grade 3 ~40%. Clinically apparent metastases develop relatively late (median ~1 yr).
Staging Tests	3-view chest radiographs | CT/MRI to facilitate surgery for large or fixed tumours & tumours adjacent to key anatomic structures
Treatment options	Primary tumour Surgical excision with 3 cm margins including a fascial plane below. Amputation may be considered if adequate margins can't be provided. Scar excision: if margins are histologically incomplete. RT: if adequate surgical margins could not be provided or margins are histologically incomplete. Metronomic chemotherapy may improve duration of local control.
Prognosis	Primary tumour When margins are histologically incomplete, local recurrence rate is ~20–35%. Recurrence rates are may higher for high grade tumours. RT for incompletely resected tumours provides local control rates of ~5-30% at 1 yr; median time to local recurrence ~2 yr Systemic disease Doxorubicin and other agents may produce responses.
Negative prognostic factors	Local recurrence High histologic grade | Incomplete histologic margins | Large tumours | Previous local recurrence Metastases or survival High histologic grade | High mitotic index | Local recurrence

Vivaldis visit to the valued partners at their headquarters for CPHI Madrid, Spain.

Kunal Khanna, Co-Founder & CEO - Vivaldis With Luis Solera Blasco - CEO, Bioiberica

A.K Khanna, Director and Co-Founder, Vivalids & Kunal Khanna, Founder & CEO, Vivaldis with Sergio Garcia, Business Development Head, Bioiberica

A.K Khanna, Director and Co-Founder, Vivalids & Kunal Khanna, Founder & CEO, Vivaldis with Esteban Santa Marta, Sub Director Commercial, Catalysis & Son of the owner

CPhI is an established pharmaceutical event that brings together the movers and shakers in pharma. Since last more than 28yrs, Cphi hosts quality conferences, free seminars, Awards and even pharma community charity expeditions where it helps in uniting niche and top buyers and sellers together under one roof in nine event locations around the world!

Catalysis S.L. was founded in 1989 in Spain. It has been involved in research and development of products in human and animal pharma, cosmetics and nutrition. Molecular activation technology has enabled Catalysis to manufacture products which are based on the latest discovery of beneficial effects that antioxidants have on free radicals and at the same time stimulate the body's immune system. This technology was developed at the Spanish National Research Council (CSIC) in Spain, Madrid. It is the third largest public institution dedicated to research in Europe This is the FIRST TIME that products manufactured by this technology are being introduced in treatment of companion animals. Unique benefit is that these products are free of side effects and have a very high safety profile.

Bioibérica, a biotechnology company specialized in the research, development, production and marketing of biomolecules for the pharmaceutical, veterinary and agrochemical industries. Bioibérica was founded in 1975, in Spain. Bioibérica became specialized in the production of heparin and other biomolecules for the pharmaceutical, veterinary and agricultural industry. Over the years, a firm commitment to science and technology has consolidated their leadership as a producer of Glycosaminoglycans, in particular, Chondroitin Sulphate, Hyaluronic Acid and Glucosamine, Amino Acids, characterized Peptides and protein Hydrolysates as well as Heparin. Bioibérica works on the principle of bringing ideas to life.

VIVALDIS Animal Health

Vivaldis Health & Foods Pvt. Ltd.
Office No. 803/804, Clover Hills Plaza, NIBM Road, Pune- 411048, Maharashtra, India.
Help-line No.: +91 7767922244 **Email :** petronaut@vivaldis.co.in **Website :** www.vivaldis.co.in