National Seminar

on

ADVANCES IN ANIMAL CANCER RESEARCH IN INDIA: DIAGNOSIS, TREATMENT AND CLINICAL MANAGEMENT

June 15-16, 2010

Jointly organized by:

Dr C.M. Singh Endowment Trust, Bareilly,
IVRI Izatnagar Chapter of Indian Association of Veterinary Pathologists (IAVP) &
Indian Veterinary Research Institute, Izatnagar – 243122 (U.P.)

DIVISION OF PATHOLOGY
INDIAN VETERINARY RESEARCH INSTITUTE
IZATNAGAR – 243 122 (U.P.), INDIA
Dear Colleagues,

We are happy to inform you that a National Seminar on “Advances in animal cancer research in India: diagnosis, treatment and clinical management” is being jointly organized by Dr C.M. Singh Endowment Trust, Bareilly, IVRI Izatnagar Chapter of Indian Association of Veterinary Pathologists (IAVP) and Indian Veterinary Research Institute, Izatnagar – 243122, Bareilly (U.P.) at Division of Pathology, IVRI, Izatnagar from June 15-16, 2010.

THEME
We all know that cancer remains a challenge even today because of its fatality and incurability in spite of the significant progress made in cancer diagnosis and treatment through technologically advanced interdisciplinary approaches. Malignancy is number two killer disease in humans being secondary to cardio-vascular disorders (Jemal *et al.*, 2008). There were 12.4 million new cancer cases and 7.6 million cancer deaths worldwide in 2008. There has been a sharp rise in the number of cancer cases in India. The increase in population and change in lifestyle have also contributed to the increased cancer incidence rate, particularly in India with average incident cases of 118 per 100,000 males (mortality/incidence rate-42%) and 107 per 100,000 females (mortality/incidence rate-35.6%), with about one million new cancer cases being reported in the country every year (ICMR, 2004-05).

Such data are not available for animal cancer cases in the country owing to lack of importance given to this disease in animals. However, the cancer cases are on the rise in animals too, as they also share the same milieu with humans. The canine and equine cancer cases recorded and diagnosed at Pathology Division, IVRI, Izatnagar for the last more than 25 years have shown linearly increasing trends (unpublished data). There has not been any systematic study at regional or national level to find out the specific pattern of cancer occurrence in animals. But considering the frequency of reports on animal neoplasms in the recent past, including horn cancer, lymphosarcoma, ethmoid tumour, canine transmissible venereal tumour, mammary tumour and several others, one can discern the indications of the ascending tendency of tumours in animals.

Almost all deep seated and visceral organ neoplasms in animals are diagnosed at post-mortem. Unlike humans, evolution and application of advanced diagnostic techniques for early detection of cancers in animals have rarely been attempted, chiefly on account of economic considerations with respect to productivity of individual animal vis-à-vis the expenses incurred to diagnose and treat a cancer. The economic aspect is not so important in case of canines which are usually reared as companion animals and enjoy the status of family members as the emotional attachment of the owners grow with time. Reports from the western world suggest the application of molecular techniques in the diagnosis and prognosis of animal neoplasms especially of pet animals. The application of such techniques to diagnose animal tumours has not been taken up in India and even rarely at research level.

Moreover, pet dogs can reveal much about human cancers, not only because of animals’ tendency to get afflicted with the same type of malignancies that affect people, but also mimic metastasis of cancer just as in human cancers. Spontaneous canine cancers are an underused group of naturally occurring malignancies that share many features with human cancers such as mammary carcinoma, osteosarcoma, prostate carcinoma, lung carcinoma, non-Hodgkin’s lymphoma, melanoma, soft tissue sarcoma, head and neck carcinoma, mouth cancer and bladder cancers. Many of these cancers have strong similarities to human cancers including histological appearance, tumour genetics, biological behaviour and response to conventional therapies. Several histological types of canine mammary tumours resemble those that occur in human breast cancer with similar metastatic and prognostic behaviour. Like in humans,
mammary and prostate cancers in dogs frequently metastasize to the skeleton, facilitating a golden opportunity to study these cancers in dogs to understand the interactions between cancer cells and bone tissue favouring metastatic colonization. Osteosarcoma of dog which affect the limbs of larger dogs, upper humerus, lower radius and lower femur completely mimic those occur in younger humans. The compressed course of cancer progression seen in dogs allows timely assessment of new cancer therapies. Companion animals could serve as sentinels or "watchdogs" to identify lowy carcinogenic substances in our homes and surroundings as the disease will appear first in pets due to their compressed life spans, well before it will in people, thus assisting in preventing human cancers by allowing ample time to take corrective or remedial measures. Realizing the importance of comparative oncology, developed countries have already started working to exploiting natural pet animal tumours to the advantage of human beings.

Therefore, the theme of the seminar is aptly kept on the animal cancer research in India covering various aspect of the disease including diagnosis, treatment and clinical management. The purpose of the seminar is primarily aimed at providing the platform for reviewing the work on various aspects of animal neoplasms/ cancers undergoing in the country, increasing the awareness of scientific and vet clinician community about the technological advances taken place in diagnosis, treatment and management of cancers, and sensitizing the researchers and veterinarians about the importance of animal cancer research and diagnosis in view of emerging comparative oncology. The outcome of the seminar is expected to increase the awareness about applications of such advanced and cutting-edge technologies in animal cancer, even at research level, which may provide not only a new fillip and zeal to pursue investigations in veterinary oncology, but also contribute to the knowledge required for their aimed use in curing human cancers.

In view of the above, it gives us immense pleasure to announce that a National Seminar on "Advances in animal cancer research in India: diagnosis, treatment and clinical management" is being jointly organized by Dr C.M. Singh Endowment Trust, Bareilly, IVRI Izatnagar Chapter of Indian Association of Veterinary Pathologists (IAVP) and Indian Veterinary Research Institute, Izatnagar – 243122 (U.P.) to be held at the Division of Pathology, IVRI, Izatnagar from June 15-16, 2010.

The Organizing Committee feels delighted to extend a warm and cordial invitation to the pathologists, scientists, academician, teachers, private vet clinicians and field veterinarians for their active participation in this unique scientific event on Animal Cancers to be held at IVRI, Izatnagar, India.

VENUE
The National Seminar will be organized at the Division of Pathology, Indian Veterinary Research Institute, Izatnagar (U.P.), a premier research Institute devoted to research on all aspects of animal health and production. The Institute is situated at Izatnagar, Bareilly, midway on Delhi-Lucknow high way and well connected with Railways. The nearest Airport is located at Delhi and Lucknow, about 250 km from Bareilly. It is near to the foothills of Kumaon range of the Himalayas with several tourist spots including Nainital, Almorah, Ranikhet, Mukteshwar etc. June is quite hot in this part of India. The temperature is expected to be in the range of 38-40°C (Day) and 20-25°C (Night). The Institute came into existence as early as in 1889 at Pune, shifted to Mukteshwar in 1893 and to Izatnagar in 1913. This is the oldest research institution of South-East Asia with the strength of more than 350 faculty members engaged in research, PG teaching, consultancy and technology transfer activities. The IVRI has made significant contributions in developing large number of diagnostics, vaccines, therapeutics and nutritional
supplements, besides conducting research on various animal and poultry diseases for better animal healthcare to eventually increase the production.

The Division of Pathology came into existence on 6th September 1963 at Izatnagar campus with the aims to discharge the most important responsibilities of: (i) conducting research on animal and avian diseases, (ii) providing investigational facilities and diagnostic services, (iii) consultative advisory and expert opinion to Government of India on livestock health and (iv) imparting postgraduate teaching/training. Problem oriented research projects were undertaken on priority areas for studying pathogenesis and pathology of important diseases of livestock and poultry, development and standardization of diagnostic tests for their rapid and precise diagnosis and to provide health coverage. Several species wise laboratories were established in the Division to facilitate systematic research and disease investigation works on the diseases of various species including poultry, bovine, ovine, caprine, equine, canine, laboratory animals and wildlife. Systematic research on bovine leukemia, horn cancer, canine venereal tumours, enzootic bovine haematuria, Marek’s disease, Rous sarcoma, cutaneous warts etc. were conducted in the Division. Besides, occurrences of rare cancer cases were reported from different species of farm animals, wildlife, laboratory animals and poultry.

The Registry of Veterinary Pathology and Oncology under the Division of Pathology started functioning from 1983 under Dr O.P. Paliwal, with the objective to act as a repository for pathological materials pertaining to animal diseases and cancers and to develop and provide educational aids in the veterinary pathology. Currently, the registry museum maintains about 1000 gross specimens, 1163 colour transparencies of various animal disease conditions, and histopathological slides. In the Oncology laboratory, following work on animal cancer has been undertaken and accomplished:

- Studies on molecular tumour markers in naturally occurring neoplasms of various species of animals as well as in DMBA-induced chemical carcinogenesis in rat skin employing immunohistochemical techniques and monoclonal antibodies.
- Cell proliferation markers (AgNORs, PCNA and Ki67) were found promising for evaluation of proliferation rate in benign and malignant tumours, especially in canines.
- For tumour progression, molecular markers such as p53, c-Myc, PCNA, hTERT, cadherins and fibronectin were found promising in identification of different stages of skin tumour development. These markers were successfully identified in spontaneous animal tumours.
- Telomerase activity was determined in canine tumours by TRAP, Immunohistochemistry (using hTERT mAb) and in situ hybridization (using a 311 bp DIG-labeled DNA probe to detect cTERT mRNA) with 88%, 100% and 84.6% of sensitivity, respectively.
- Nuclear morphometry (nuclear area, nuclear perimeter & shape) showed significant difference between malignant and benign mammary tumours (p>0.01).
- In progressive Rous sarcoma, SEM study revealed rough tumour cell surface with numerous projections whereas regressor tumour showed smooth cell surface and infiltration of lymphocytes.
- Histological classification of spontaneously occurring canine mammary tumours (as per WHO guidelines). Of total 184 grossly suspected cases, 168 were diagnosed as mammary tumors in last three years. Occurrence of malignant mammary tumors was more (90.47%) against benign tumors (9.52%), highest incidence was seen in dogs between 8-12 year age group and mean age was 9.54 years and 76.78% of tumors were found in posterior pairs of mammary glands.
- Detection of molecular tumour markers (oncogenes and oncoproteins) including PCNA, Ki-67, c-Myc, c-erbB2 and ER-α in spontaneously occurring canine mammary tumours as well as in the experimentally induced (by MNU carcinogen) rat mammary tumours by employing immunohistochemistry, nucleic acid based molecular techniques and monoclonal antibodies.

**SCIENTIFIC PROGRAMME**

The major focus of the seminar would be to review the research advances on various aspects of animal neoplasms/ cancers undergoing in the country and awareness and sensitization of the researchers, academicians and clinician veterinarians about technological advances taken
place in diagnosis, treatment and management of cancers. On this occasion 5th Dr C.M. Singh Memorial Lecture will be organized on theme topic. The seminar will have separate sessions under which topics on the following broad areas would be discussed.

- **SESSION-I**: Basic and diagnostic cancer research
- **SESSION-II**: Cancer in pet animals
- **SESSION-III**: Tumours in livestock and poultry
- **SESSION-IV**: Tumours in wildlife and laboratory animals
- **SESSION-V**: Treatment and clinical management of animal tumour conditions

**SUBMISSION OF INVITED LECTURES AND ABSTRACTS**

The distinguished speakers of the invited lectures are requested to send a write-up of about 10-15 pages including references well in advance for inclusion in the compendium of the seminar to be published. Authors of the contributory papers are requested to send an abstract. The abstracts with title, author(s) name, name of the institution, objectives, methods, results and conclusions (not exceeding 300 words) using MS word, Times New Roman (Font size 12) should be submitted in hard copies as well as electronically (Email: somvanshi@ivri.up.nic.in; dr.rsomvanshi@gmail.com; kdhama@rediffmail.com) to Dr. R. Somvanshi, Organizing Secretary, National Seminar on “Advances in animal cancer research in India: diagnosis, treatment and clinical management”, Division of Pathology, IVRI, Izatnagar – 243122, Bareilly (U.P.).

**REGISTRATION**

Delegates are requested to register for the seminar in advance to enable us to plan for suitable arrangements accordingly.

**REGISTRATION FEE**

- Life Member of IAVP : Rs. 1500/-
- Non IAVP members : Rs. 2000/-
- Students : Rs. 1000/-
- Spouse/accompanying persons : Rs. 1000/-
- Foreign Delegates : USD $200/-
- Corporate members/ Representatives : Rs. 3000/-

**ACCOMMODATION**

All possible efforts shall be made to provide accommodation to the registered delegates in the Institute Guest house on “first come first serve basis”. However, the 3 star hotel accommodation is also available in Bareilly city with tariff ranging from Rs. 500-800 for Non-AC and Rs. 1000-2000 for AC per room. Kindly intimate your programme and number of accompanying persons well in advance to make the necessary arrangement for the comfortable stay. The participants may book their tickets (to and fro) at their own to avoid inconvenience at the last moment.

**PAYMENTS**

The Indian/foreign delegates may pay the registration fee as well as hotel charges by transferring to the following account number using the appropriate code. The demand draft may be made in favour of the “Organizing Secretary, National Seminar on Animal Cancer – 2010”, payable at SBI, CARI, Bareilly.

Last date for receiving advertisements: 31 May, 2010
Name of Account: “Organizing Secretary, National Seminar on Animal Cancer - 2010”
Name of Bank: State Bank of India
Bank Address: State Bank of India, CARI Branch, Branch Code: 7027, Bareilly, U.P., India
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IMPORTANT DATES
Receipt of Abstract : 15 May, 2010
Receipt of Invited Paper : 15 May, 2010
Receipt of Registration Form : 31 May, 2010

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Registration Form

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ADVANCES IN ANIMAL CANCER RESEARCH IN INDIA: DIAGNOSIS,
TREATMENT AND CLINICAL MANAGEMENT

15-16 JUNE, 2010

(Should reach the Organizing Secretary on or before 31st May, 2010)

1. Name of the Participant:
2. Designation:
3. Age:
4. Address for Correspondence:
   Fax. No:………………………. E.Mail: ………………………………………
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5. Date & Expected Time of Arrival:
6. Arrival by Train/Flight No.
7. Station:
8. Accommodation: Single/Spouse;
   Guest House/Hotel (AC/Non A
9. Date & Time of Return:
10. Payment*:
    Amount ……………………… sent through Bank Transfer/Demand Draft/Cash
    Date : ………………………
*DD should be sent in favour of “Organizing Secretary, National Seminar on Animal Cancer, Payable at SBI, CARI, Bareilly (Branch Code: 7027).

Signature of the Applicant