MEETING REPORT

Pathological techniques in diagnosis of animal, bird and fish disease*

The practice of sound veterinary medicine is based on accurate diagnosis of diseases and making appropriate clinical and therapeutic decisions to ensure that the health of an animal is in complete harmony with the environment. Multifarious factors appear to contribute to our understanding of the global changes and emergence of new disease patterns. To develop a conceptual framework about this changing pattern and vulnerability to diseases; experience and training involving a wide range of professional groups and disciplines like ecology, pathology, epidemiology, molecular biology, immunology, cell biology, climate and environmental analysis are required to be utilized. Making correct interpretation of the clinical and laboratory results is fundamental to preclinical and confirmatory disease diagnosis.

S. K. Mukhopadhyay, West Bengal University of Animal and Fishery Science (WBUAFS), in his inaugural address, said that the discipline of pathology is the hub in the veterinary medical profession as it provides better understanding of the disease process, helps in its diagnosis, and also provides logical preventive and control measures. The advances in different fields of biology, ranging from molecular biology to immuno electron microscopy and immunopathology has provided better understanding of pathology at the molecular level, according to him.

Session I consisted of endowment lectures. In this session, LalKrishna, ICAR, New Delhi, spoke on 'Radiation effects in animals'. He discussed in great detail the mechanism of action of ionizing radiation, the dose-dependent sensitivity of different tissues to radiation, somatic cell effects and so on. Diagnosis and treatment during severe chronic exposure was also covered in his lecture. P. Dwivedi, IVRI, Izatnagar, spoke on 'Interaction of important mycotoxins with infectious agents'. Mycotoxins are well known for their immunosuppressive effects in animals as well as human beings. They exert their immunosuppressive action by depressing T or B lymphocyte activity, suppressed antibody production and impaired macrophage/neutrophil effect or functions. Mycotoxins impair immunosurveillance and induced immunosuppression may result in decreased host resistance to various infections and decreased vaccine efficacy in host-suppressed animals, he noted. His lecture included data presentations dealing with interaction of commonly occurring mycotoxins with each other as well as other infectious agents in various species of animals and poultry.

Session II dealt with 'Toxicopathology of environmental pollutants', S. K. Das, IVRI, Kolkata, spoke on 'Latest tools for serodiagnosis of animal diseases with application of bio-technology'. India has a large livestock resource among all the countries of the world with amazing diversity of germplasm, he said. He covered topics like serological diagnosis of different animal diseases, advantages of using monoclonal antibody over polyclonal variety for disease diagnosis, production of antibody by genetic engineering, use of recombinant antigen for detection of various pathogen antibodies, anti-idiotypic antibodies as diagnostic antigens, methods for demonstration of antigen–antibody complex in great detail.

On 24 November 2004, the first session dealt with 'Biomolecular techniques in diagnostic pathology'. Parimal Roy, Tamil Nadu Veterinary and Animal Sciences University, Chennai, spoke on 'Diagnosis and control of Newcastle disease in chickens'. He gave a detailed picture of the Newcastle disease, including its definition, the different methods of its diagnosis, the conventional methods, use of monoclonal antibodies, molecular techniques, control of the disease at the international level as well as at national and farm level. Vaccination and seromonitoring of the disease was also discussed.

Sessions VI to XII dealt with diseases of poultry, equine and porcine, fish and aquatic species, zoonotic diseases, those of wildlife, pack laboratory and also pet animals. P. C. Verma, College of Veterinary Sciences, CCS Haryana Agricultural University, Haryana spoke on 'Diagnostic trends in some of the important parasitic diseases of equines'. His lecture included some of the important parasitic conditions of equines in India and their diagnosis. The list of diseases covered included babesiosis or piroplasmosis, trypanosomiasis or surra, equine protozoal myeloencephalitis, internal parasitic infections like strongyles, roundworm, pinworm, tapeworm, etc. Vipan K. Gupta, College of Veterinary and Animal Sciences, Palampur, spoke on 'Bird flu: A world health impact'. According to him, avian influenza popularly known as 'bird flu' is a contagious disease of animals caused by 'typeA' strain of influenza virus that commonly infect only birds (chickens, turkeys, guinea fowls and other avian species, especially migratory waterfowl). Etiology, epidemiology and pathogenesis of the disease were covered in detail. Impact of the disease in poultry as well as disease among humans was also included in this informative talk.

The poster session was highly responsive where young scientists interacted as well as had an exchange of scientific knowledge amongst scholars throughout the country. Some of the topics like patho-biochemical study on thryoids of slaughtered buffaloes, phosphide poisoning in buffaloes at a dairy farm, aspergillosis in military green macaw, etc. attracted attention. About 200 delegates attended the conference.

*Based on the Conference on Advances in Pathological Techniques in Diagnosis of Animal, Bird and Fish Disease, held during 23–25 November 2004 in Kolkata.

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