

[Session I] #1

**Biological Characteristics and
Pathogenesis in Chickens of
Infectious Bursal Disease (IBD)
Virus Isolated in North Vietnam**

Nguyen Thi Lan

*Department of Pathology, Faculty of Veterinary
Sciences, Hanoi Agricultural University, Gia Lam-
Hanoi, Vietnam*

E-mail: lanjp2000@yahoo.com

We isolated some strains of infectious bursal disease (IBD) virus in North Vietnam and researched the virus growth characteristics, the virulence and molecular weights of them. The chicken embryos were the suitable media for the replication of IBD virus and the best route of inoculation was CAM (chorioallantoic membrane). A 100% embryo showed the lesions and the 55% embryos died during 48 - 96 hours. After 13 serial passages in chicken embryo fibroblast cells, the IBD virus had typical cytopathogenic effect. The virulence of G-HT strain isolated in Ha Tay Province demonstrated $EID_{50} = 10^{-7.50}/0.2$ ml; $ELD_{50} = 10^{-5.15}/0.2$ ml; $CID_{50} = 10^{-5.37}/0.4$ ml; $CLD_{50} = 10^{-3.8}/0.4$ ml and was equivalent to that of virulent strain 52/70. The clinical signs, gross and histopathological findings of the chickens infected with the G-HT strain were similar to those of the chickens infected with the virulent 52/70 strain. The structure of the isolates under the electron microscope was consisting of the 6 side regular polygonal shape with a diameter varying about 56nm by

x300,000 magnifications. These suggested that the G-HT strain isolated in Vietnam was virulent and could cause typical Gumboro disease in chickens.

Abbreviation: Chicken infective dose fifty percent (CID_{50}) Chicken lethal dose fifty percent (CLD_{50}) Egg infective Dose fifty percent (EID_{50}); Egg lethal dose fifty percent (ELD_{50})

[Session I] #2

**Ultrastructural Observation of
Pleomorphic Cells in Actinobacillus
Pleuropneumonia of Pigs**

San Duo Chen

*Institute of Veterinary Pathology, National Chung
Hsing University 250, Kuo Kuang Road,
Taichung, 40227 Taiwan*

Tel & Fax: 886-4-22853552,

E-mail: sdchen@dragon.nchu.edu.tw

Actinobacillus pleuropneumonia (App) is a very important disease in hog farm. In Taiwan, the first report was presented on 1975, it is still very common till now. In the lesions of this disease, typical pleuropneumonia was always diagnosed, above all, a special so-called pleomorphic cells (PMC) were revealed in most cases, which could be act as a diagnostic criterion. Although, there were many papers mentioned the morphology of these cells, however, the cell's characteristics or the origin is still disputed. In this study, eight specific pathogens free pigs were inoculated intratracheally with App at a concentration of 5×10^6 CFU, then, each two

were sacrificed at 6, 12, 24 and 48th hours later. The cells in the alveolar spaces were observed with light and transmission electron microscope, and analyzed cytochemically for acid phosphatase. Besides, the process of formation was also observed serially in the semithin and ultrathin sections of App lungs. The results showed that these pleomorphic cells contained lysosomes in the cytoplasm which could attribute it into macrophages, and the lysosome granules were confirmed by cytochemistry to showed positive results of acid phosphatase staining. The macrophages started to degenerate by damaging the unit membrane of cytoplasm and organelles, and continued by dilation of rough endoplasmic reticulum to become vacuoles, at last, the cistern of nuclear envelope became bleb and compressed the nucleus to crescent shape. Many crescent nucleus-contained cells piled together to form a whorl-pattern mass, they were PMC. Conclusively, the PMC in App lung were mainly derived from macrophages and some of them were derived from type II pneumocytes.

[Session I] #3

Comparative Brain Pathology of Aged Animals

Hiroyuki Nakayama

Laboratory of Veterinary Pathology, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan

TEL: +81-3-5841-5410, FAX: +81-3-5841-8185

E-mail: anakaya@mail.ecc.u-tokyo.ac.jp

Senile plaques (SP) and amyloid angiopathy seen in the Alzheimer's disease (AD) brain have been found in the brains of aged dogs (more than 9 years old). However, neurofibrillary tangles (NFT), another characteristic lesion in AD, have never been observed in the brains of aged dogs. Neuronal cell loss is an additional histopathological hallmark and apoptotic neuronal cell death was detected in the brains of AD patients. It would be worthwhile to clarify the difference of brain lesions between AD patients and other aged mammalian species including dogs and to discuss the usefulness of aged mammals as models for AD. Therefore, we examined brain pathology in the aged animal brains.

Apoptotic (TUNEL stain-positive) cells were present in both the cortex and white matter of the aged dog brain. Apoptotic neurons were swollen and larger than intact cells, although these changes were slight. Apoptotic bodies or chromatin margination, which are the typical morphological characteristics of apoptosis, were not observed. TUNEL-positive cells in the brain were revealed to be astroglia and oligodendroglia as well as neurons. These observations suggest that a wide variety of brain cells participate in the pathological changes in aged dogs.

The number of TUNEL-positive cells and the number of SP tended to increase with age. On the contrary, the numbers of SP and TUNEL-positive cells showed no correlation. The examination of aged dogs clinically evaluated for dementia before death using the index (dementia index, DI) system, revealed a significant positive correlation