



HOKKAIDO UNIVERSITY

| | |
|------------------|---|
| Title | A SUPPLEMENT TO CHANGES OF THE NERVOUS SYSTEM IN "EQUINE INCOORDINATION" |
| Author(s) | SAITO, Keigo |
| Citation | Japanese Journal of Veterinary Research, 26(1-2), 37-38 |
| Issue Date | 1978-04 |
| Doc URL | https://hdl.handle.net/2115/2142 |
| Type | departmental bulletin paper |
| File Information | KJ00003407856.pdf |



before the screening tests. The sera positive at 1:32 serum dilution in the screening tests were further treated with trypsin, heated at 56 °C for 30 min with KIO₄, and tested. An HI titer of 1:32 or higher was considered to be positive.

The distribution of antibodies in the subtypes of influenza A virus were as follows: of 504 horses, including 233 which were inoculated with horse influenza vaccine, as many as 51% were positive against H3. Eighteen, or 7% of the horses, were positive against Heq1 and Heq2 (possibly due to the vaccination), and 0.4, 0.2, 6, 0.4, and 0.6% were positive against H0, H1, Hav1, Hav3, and H3, respectively. None were positive to the remaining subtypes. Of 728 cows, 1.5 and 1% were positive against H0 and H3, respectively. None were positive to the remaining subtypes. Of 1026 swine, 6.2% were positive against Hsw1. It was observed that the positive swine were born exclusively after 1977. Positive sera were also found in 4.3, 0.4, 1.4, and 0.1% of swine against H0, H1, H3, and Heq1, respectively. Of 52 cats, 5.8% were positive against H3. Of 62 minks, 16 and 1.6% were positive against H3 and Hsw1, respectively.

Antibodies to influenza B virus were found in 3.2% of the horses and in 0.1% of the swine, respectively. It is significant that the positive horses were born exclusively in 1976.

Antibodies to influenza C virus were found in 79% of the rats. This fact suggests that infection of influenza C virus may be unexpectedly prevalent in rats.

A SUPPLEMENT TO CHANGES OF THE NERVOUS SYSTEM IN "EQUINE INCOORDINATION"

Keigo SAITO

*Department of Comparative Pathology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

The nervous systems of 27 young thoroughbred horses (7-20 months of age; duration of illness, 1~11 months) affected with "Equine Incoordination" were histopathologically investigated to make a supplement to SAKURA's (1977) observations on 8 foals.

The clinical signs of the disease were lumbar weakness, posterior swaying and weaving, posterior wobbling, toe-dragging in gait, walking with the side-wardly open hindlegs, grounding bump the foot in gait, stringhaltlike walking, falling by turning from side to side, flattening of the upper gluteal region, diminished tail resistance, cutaneous hypesthesia, and diminished pupillary reflex.

The cerebrospinal fluid increased and was transparent and diluted in all of the horses. No abnormalities were noticed in the vertebral canal and curve of any of the horses.

The central nervous system developed diffuse leucomyelodegeneration (leucomyelopathy) in the entire white matter extending the almost overall length of the spinal cord. Degeneration of the same kind occurred also in the limbic regions and medial longitudinal fascicles of the posterior brainstem including midbrain, and in the optic nerves and tracts. No malacic lesions were found. The leucomyelodegeneration showed a tendency to be more intensive in the limbic regions, especially in the lateral and ventral funicles. It was difficult to indicate positive findings such as the leucomyelodegeneration develops a tendency to system affection of the nerve fiber tracts. Minute eosinophilic cytoplasmic inclusion bodies were found in the following cells: ependymocytes of the ventricle system, especially of the mesencephalic aqueduct, and of the spinal central canal; nerve cells in the central gray substance of the midbrain; nerve cells in the spinal gray matter; oligodendroglia cells in the spinal white matter; nerve cells in the spinal ganglion; epithelial cells of the chorioid plexuses.

Among the peripheral nerve changes, multifocal loss of nerve fibers in the posterior cutaneous nerve of the thigh was worth notice.

The present investigations reveal that SAKURA's (1977) observations may have the universality.

**PRESYNAPTIC INHIBITORY ACTIONS OF CATECHOLAMINES
ON THE CHOLINERGIC NERVE MEDIATED CONTRACTION
OF THE SMOOTH MUSCLE OF THE
CHICK PROVENTRICULUS**

Naoki SENO

*Department of Pharmacology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

1) The presynaptic inhibitory effects of catecholamines and clonidine on the cholinergic transmission were investigated using the vagus nerve-smooth muscle preparations isolated from the chick proventriculus.

2) Adrenaline, clonidine ($10^{-8} \sim 2.5 \times 10^{-7}$ M), noradrenaline ($10^{-7} \sim 2.5 \times 10^{-6}$ M) and dopamine ($10^{-5} - 10^{-4}$ M) inhibited the contraction induced by stimulation of the vagus nerve with a low frequency (0.5 Hz), but they did not inhibit that elicited