

2015 年台灣雞、鵝、鴨及火雞感染 H5 高病原性家禽流行性感冒之病理學變化

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摘要

台灣於今年初爆發新型 H5 高病原性禽流感，造成鵝、番鴨、雞及火雞的高死亡率。本研究應用組織病理學及免疫組織化學染色法（IHC）探討新型 H5 高病原性禽流感病毒感染鵝、番鴨、雞及火雞之病變。死亡的家禽均可見胰臟及心臟呈現出血及壞死的共同肉眼病變。組織病理學下，在四個家禽均可見腦、心臟、胰臟及腎臟之出血、壞死、發炎等病變，而肝臟及脾臟壞死則在水禽最常發現。利用 IHC 標示臟器之病毒核蛋白（nucleoprotein）抗原分佈，在水禽之肝臟及脾臟含有高量的病毒抗原；番鴨的腸道病毒抗原含量高於鵝；雞及火雞的腦、心臟及腎臟病毒抗原含量則高於水禽。結果可知，診斷新型 H5 高病原性家禽流行性感冒之最佳標的器官，在水禽推薦含高量抗原的心臟、肝臟及脾臟，雞及火雞則推薦腦、心臟及腎臟。

Pathology of H5 highly pathogenic avian influenza in chickens, geese, ducks and turkeys in Taiwan in 2015

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Abstract

During the recent epidemic of novel H5 highly pathogenic avian influenza (HPAI) in Taiwan, high mortality was observed among geese, chickens, turkeys, and muscovy ducks. We characterized lesions and viral antigen distribution using histopathology and immunohistochemistry (IHC) in geese, chickens, turkeys, and muscovy ducks naturally infected with the novel H5 HPAI virus. Grossly, the most common lesions in the four species were multifocal hemorrhagic necrosis in the pancreas and heart. Histologic lesions were characterized by hemorrhage, necrosis, inflammation, or a combination of these features in the brain, heart, pancreas, and kidney. Notably, splenic and hepatic necrosis were commonly observed in waterfowl. In IHC, the viral nucleoprotein antigens were closely associated with histopathologic lesions. In waterfowl, viral antigen was most often detected in the liver and spleen, but viral antigen detected in the intestinal lamina propria in muscovy ducks was higher than that in geese. Immunohistochemical demonstration of HPAIV nucleoprotein in brain, heart, and kidney was stronger in poultry than in waterfowl. Our study suggested that the best visceral samples for the detection of the novel H5 HPAI virus in waterfowl were heart, liver, and spleen, and the best samples for the detection in gallinacean were brain, heart, and kidney.