

幼鵝感染鵝出血性多瘤病毒之致病機轉：人工感染試驗

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摘要

鵝出血性腎炎腸炎 (Hemorrhagic nephritis enteritis of geese) 是由鵝出血性多瘤病毒(Goose hemorrhagic polyomavirus; GHPV)引起，本病在歐洲地區是鵝隻最主要的傳染病之一。本次研究利用原位雜交法 (In situ hybridization) 探討人工感染 GHPV 之幼鵝致病機轉，30 隻 2 日齡無 GHPV 感染之雛鵝經皮下注射 0.2 mL 含 10^7 GHPV 複製數之病毒液，10 隻對照組則以無菌生理食鹽水代替，鵝隻在接種後的第 2、3、4、5、6、7、8、14、21 及 28 天進行犧牲剖檢及組織採樣。在接種後第 7 天鵝隻出現血樣下痢、沉鬱及虛弱等臨床症狀，在第 8 天所有鵝隻均死亡。肉眼病變在接種後第 7 天起可見皮下水腫、腹水、腸道出血及腎臟顏色呈白色斑駁，組織病理學於第 6 天起可見脾臟淋巴流失、腸道出血及腎小管急性壞死等病變。原位雜交法在接種後第 4 天可見全身各臟器的血管內皮細胞有陽性訊號，於第 7 天起各臟器血管內皮細胞的陽性訊號強度顯著增加。試驗結果發現 GHPV 可在雛鵝體內的血管內皮細胞中廣泛複製和散佈，並且 GHPV 的病理生物學特徵與病毒量多寡一致。

Pathogenesis of goose hemorrhagic polyomavirus in goslings: an experimental trial

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Abstract

Goose hemorrhagic polyomavirus (GHPV) is the causative agent of hemorrhagic nephritis enteritis of geese, one of the major diseases of domestic geese in Europe. In the present study, the pathogenesis of GHPV in artificial infected goslings was elucidated using in situ hybridization (ISH). Thirty GHPV-free 2-day-old goslings were subcutaneously inoculated with 10^7 genome-equivalent viruses of GHPV. Ten goslings were inoculated with saline as the control. The tissue samples were collected at 2, 3, 4, 5, 6, 7, 8, 14, 21, and 28 days post virus inoculation. Clinical signs of bloody diarrhea, depression, and weakness were noticed at 7 days post-infection (dpi) and all goslings died at 8 dpi. Grossly, subcutaneous edema, ascites, hemorrhage in the intestine and mesentery and mottled pale of kidney were observed at 7 and 8 dpi. Histopathologically, lymphocyte depletion in spleen, intestinal hemorrhage, and acute tubular necrosis were found at 6-8 dpi. By the ISH, the signals were first observed in the vascular endothelial cells throughout the body at 4 dpi. The signals intensity increased significantly in the endothelial cells at 7 dpi. Our findings supported that the GHPV were widespread replication and dissemination in the endothelial cells throughout the body of artificial infected goslings and the pathobiology of GHPV were parallel to the virus loads.