Abstract

Localisation of Newcastle disease viral nucleoprotein in the tissues of carrier ducks was evaluated in 45 experimentally infected and 10 sentinel ducks. Ten chickens were used as positive control birds. The ducks were sacrificed serially on days 1, 4, 8 and 14 – post-inoculation. Six tissues (liver, spleen, lung, cecal tonsils, kidneys and brain) were collected from each bird, preserved in 10% neutral formalin for 24 hours, and then transferred to 70% ethanol. Indirect alkaline phosphatase – antialkaline phosphatase immunoperoxidase staining was performed to detect viral nucleoprotein. The ducks (28.9%) had Newcastle disease viral nucleoprotein in their tissues. The viral nucleoproteins were found in large mononuclear cells of cecal tonsils and tubular epithelial cells in the kidneys of infected ducks. The viral antigens were located in the cytoplasm and nucleolus of the respective cells. Liver, lungs, spleen and brain of all infected ducks did not have detectable viral antigens. The number of ducks with viral antigen increased with duration of infection from 22.2%, 16.7%, 33.3% and 41.7% on days 1, 4, 8 and 14 post-inoculation, respectively (p<0.05). Viral antigen intensity in cecal tonsil tissue sections was 4, 5, and > 5 cells in 15.4%, 53.8% and 30.8%, respectively, of the infected ducks. In the kidneys, more than 5 positive cells were recorded. Thus, in Newcastle disease virus carrier ducks, the kidneys and cecal tonsils need to be sampled for virus isolation besides other tissues.