H5N1 Infection and Kidney Pathology: Is There a Link?

Dear Editor,

Whilst human-to-human avian influenza A virus subtype H5N1 (H5N1) transmission is not yet established, the reemergence of the virus with reported human H5N1 cases in every continent by May 2024 has now sparked fears of another potentially brewing viral pandemic. H5N1-associated kidney pathology has not been studied much since the virus was first isolated from humans in Hong Kong in 1997.

We conducted a scoping literature search through PubMed, Web of Science, EMBASE, Medline-ProQuest, and Google Scholar on publications describing H5N1-associated kidney pathology. Less than ten cases describing kidney pathology in human H5N1 patients have been published, most reported between 1997 and mid-2000s from Hong Kong or China during the first H5N1 outbreak in that period. Acute tubular necrosis was observed in the majority of the published cases.[1–3] There was a three-year-old boy who died of H5N1 infection and, consequently, complications from Reye's syndrome, in which paramortem biopsy identified vacuolation and vesicular changes in the kidney proximal tubules, consistent with Reye's syndrome.[4]

Recent research has studied the links between H5N1 and kidney pathology. Zhang *et al*.[5] immunized BALB/c mice with inactivated H5N1 to prepare monoclonal antibody (mAb) H5-32, where immunohistochemical analysis confirmed that mAb H5-32 cross-reacted with normal human kidney tissue. mAb H5-32 was localized in the cytoplasm of human kidney tubular epithelial cells and its binding fragment size was about 43 kDa. Hence, Zhang *et al*.[5] concluded that the mechanism of binding to human kidney tubular epithelial cells may be a key mechanism of H5N1-induced kidney pathology. With a rising incidence of H5N1 infection worldwide and its plausible links with kidney damage, further investigations are needed to explore and delineate the mechanisms between H5N1 and kidney disease.

Conflicts of interest

There are no conflicts of interest.

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