

Evaluation of beak and feather disease virus, avian polyomavirus and avian papillomavirus of captives psittacine birds in Seri Kembangan, Selangor, Malaysia

ABSTRACT

Aims: Psittacine birds such as parrots, macaws, cockatoos, lovebirds and parakeets, are widely reared as household pets or at aviary due to their attractive features. However, the status of virus-causing diseases of psittacine species in Malaysia is fairly under-documented. Therefore, this study was aimed to detect the presence of three common avian viruses that infect psittacine birds, i.e. beak and feather disease virus (BFDV), avian polyomavirus and avian papillomavirus. **Methodology and results:** Faecal samples from twelve asymptomatic captive psittacine birds of different species were collected from an undisclosed animal garden in Serdang, Selangor, Malaysia. Briefly, the sample was homogenised and resuspended with SM buffer with the ratio 1:1 (weight of sample/g: volume of SM buffer/mL) before centrifugation at $1,000 \times g$ for 20 min. The supernatant was collected and filtered before subjected to genomic DNA extraction using a commercialised kit. Polymerase chain reaction (PCR) technique was used to screen the V1, VP1 and L1 genes of beak and feather disease virus (BFDV), avian polyomavirus and avian papillomavirus, respectively. Findings revealed that the samples were negative for BFDV and avian polyomavirus. However, positive results of 1.5 kbp PCR amplicon were detected for avian papillomavirus in four out of the 12 samples (33.33%), which was from the white-crested cockatoo, African grey parrot, yellow-collared macaw and Senegal parrot. Sequence analysis of the L1 gene from the Senegal parrot *Poicephalus senegalus* revealed 93% identity to a reference *Psittacus erithacus timneh* avian papillomavirus. **Conclusion, significance and impact of study:** This study added to the limited prevalence data of three important avian viruses which infect captive psittacines in Seri Kembangan, Selangor, Malaysia. Avian papillomavirus, but not BFDV and avian polyomavirus, was detected in the collected captive psittacine birds. Therefore, a routine screening can be performed to monitor the health status of birds despite their asymptomatic manifestation, in order to prevent possible virus transmission.

Keyword: Avian viruses; Beak and feather disease virus (BFDV); Avian polyomavirus; Avian papillomavirus; Psittacine