

“Studies on proventriculitis in chickens”

Proventricular homogenates from 3–4-week-old broiler chickens that showed severe enlargement of proventriculus, reduced weight gain was collected, homogenized and then passed in SPF-ECE where it possesses pathogenicity for ECE that included congested embryos, congested livers and edematous, congested CAMs and embryos mortalities. Infectious Bronchitis and Infectious Bursal disease viruses were detected in formalin fixed paraffin embedded proventricular sections by IFA. Isolates were serologically identified in CAMs homogenates of proventricular homogenates inoculated SPF-ECE by DOT-ELISA, where 3 samples were positive for IBDV, 5 samples were positive for IBV and 2 samples were positive for both viruses. The implication of both IBDV and IBV in the induction of proventriculitis in commercial broiler chicks was studied by inoculation of 1-day old commercial broiler Baladi chicks using 3 IBDV strains and 5 IBV strains. Our study revealed that vvIBDV FAY97 IBDV strain was capable of producing proventriculitis grossly and microscopically at 7, 14 and 21 days PI and only microscopically at 28 days PI. However, vaccinal IBDV strains (GM97&CH80) showed only microscopical lesions at 21 and 28 days PI with a lesser degree than FAY97 strain. All of IBV strains that used in our study were capable of producing proventriculitis with different degrees, where the proventriculi body weight ratios of D274 strain inoculated group were significantly higher at 7 & 14 days PI, in both Egypt/Beni-Suef/01 and I inoculated groups it was significantly higher at 7, 14 & 21 and in Egypt/F/03 it was significantly higher at 7, 14, 21 & 28 days PI, and. However, all strains induced lesions microscopically at 7, 14 and 21 days PI except H120 IBV strain which induced mild lesions at 7 and 14 days PI. Angiopathy in the serosal and Submucosal proventricular blood vessels and in the splenic arteries was noticed in all IBV inoculated groups, and the same lesions with a mild degree was also noticed in FAY97-IBDV inoculated group in the proventriculus at 7 days PI and in the spleen at 14 days PI. In conclusion it could be drawn from the present study that IBV and IBDV are probable causes of proventriculitis as they have been detected in field cases of proventriculitis. Also, different strains of the examined viruses can localize or cause direct damage in the proventriculus as that noticed in field cases.