SUTIASTUTI WAHYUWARDANI. Pathogenesis of local isolate of Gumboro virus infection on embryos and broiler chickens. Under supervision of DEWI RATIH AGUNGPRIYONO, LIES PAREDE and WASMEN MANALU.

Gumboro or Infectious Bursal Disease is a disease in young chickens that causes damage of bursa fabricius. Vaccination of IBD virus has been routinely performed, but cases are still reported in the farm. The study of pathogenesis was done by choosing two types of strains that are very commonly used as vaccines, the intermediate plus IBD virus local and commercial import, which observed in embryos and broiler chickens. In chicken embryos, the pathogenesis was learned by observing the lesions sequence appeared in the bursa fabricius. Whereas, in broiler chickens, the pathogenesis of gumboro virus was performed based on the lesions sequence of infection, distribution, degree of gross and histopathology lesions on the immune organs and distribution of antigen that was detected by immunohistochemistry. The pathogenesis study of virus from a local isolate and commercial import vaccines were compared with pathogenesis of very virulent IBD virus (Std1/BBalitvet/09). Before using, the virus were tested for virulence by passaging 5 times in chickens and identified By PCR and sequencing. The infection of Intermediate plus IBD virus local and commercial in chicken embryos caused decreased egg hatchability and induced lesions at 1 day postinfection that could be observed at 15 days old chicken embryos. The lesions and antigen could be detected on 1, 2 and 3 days postinfection then disappeared 3 days after hatching. The infection of two type that virus induced antibodies in chicken 3 days post hatch. The pathogenesis study of Intermediate plus IBD virus local and commercial infection in broiler chickens revealed mild score lesion in the bursa fabricius, that were not significantly different from control chickens. Conversely severe lesions and viral antigen could be observed in the group of chickens that infected with local of vvIBD virus or reinfected with local of vvIBD virus. The lesions did not recover until 14 days post infection, whereas lesion in spleen and thymus recovered at 14 days post infection. Viral antigen could be detected in group chickens which infected with Intermediate plus IBD virus local and commercial then reinfected with local vvIBD virus on 1-14 days post infection. Whereas at the group of chicken infected local vvIBD virus were detected only up to 7 days post infection. The damage of the bursa fabricius result immunosuppressive condition. Whereas vaccination in ovo, did not cause lesions bursa fabricius of chicken post hatch. However, the use of intermediate plus IBD virus local as in ovo vaccine need to be studied more deeply whether can induce protective antibodies against local vvIBD virus.

Key words: chicken embryo, gumboro, pathogenicity, immunohistochemistry, immune organ, virus vaccine