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**Retrospective Investigation and Genetic Variation Analysis of Chicken Infectious Anemia in Shandong Province, 2020–2022**

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**Abstract:**

**Background/Objective:** [Chicken infectious anemia (CIA) is a vertical transmission infectious disease of chickens caused by the chicken infectious anemia virus (CAV). The disease can induce stunting and immunosuppression in chicks by infecting bone marrow-derived stem cell, causing huge economic losses for the poultry industry.]

**Methods:** [To understand the prevalence of CIA in Shandong Province, China. From 2020 to 2022, 854 suspected CIA samples were collected and analyzed in 13 cities in Shandong and tested by PCR.]

**Results:** [The PCR results showed that a total of 115 CAV were isolated, the positive rates of CAV were 17.21% (26/151) in 2020, 12.23% (35/286) in 2021, and 12.94% (54/417) in 2022, with severe mixed infections. Among them, CAV and fowl adenovirus (FAdV) were most common, accounting for 40.86%. VP1 gene homology analysis showed that isolated strains shared 96.1%-100% homology with the previously reported CAV strains. Genetic variation analysis showed most of the isolated CAV strains were located in the genotype A.]

**Conclusion:** [These results indicate that the infection of CIA in the chicken of Shandong in recent years has been prevalent and mixed infections are common. Our results extend the understanding of the prevalence and genetic evolution of CIA in Shandong Province, and will give new references for further study of the epidemiology and virus variation as well as the prevention and control of this disease.]

**Keywords:** [chicken infectious anemia virus; epidemiological investigation; mixed infection]