2025, Scienceline Publication
World's Veterinary Journal
World Vet J, 15(3): 588-596.
ISSN 2322-4568

DOI: https://dx.doi.org/10.54203/scil.2025.wvj59
PII: S232245682500059-15

Clinical and Genetic Characterization of Infectious Laryngotracheitis Virus in Layer Chickens in Basrah, Iraq

Sara Salim Mohammed[1], Isam Azeez Khaleefah[2], Rajaa Abd Alzahra Ali[2], Harith Abdulla Najem[2*], Waleed Majeed Almayahi[2], and Budoor Muhammad Lateif[2]

[1]*Department of Veterinary Public Health; College of Veterinary Medicine; University of Basrah, Basrah, Iraq*
[2]*Department of Pathology and Poultry Diseases, College of Veterinary Medicine, University of Basrah, Iraq*

*Corresponding author's Email: harith.najem@uobasrah.edu.iq

ORIGINAL ARTICLE
Received: June 24, 2025
Revised: July 26, 2025
Accepted: August 28, 2025
Published: September 30, 2025

ABSTRACT

Infectious Laryngotracheitis (ILT) has been widely prevalent in numerous countries in recent years. The present study aimed to detect ILT in chickens exhibiting clinical suspicion, utilizing molecular analytical techniques in Basrah, Iraq. Clinical signs, histological changes, and polymerase chain reaction (PCR) were used to diagnose thirty-five samples collected from clinically suspected chickens, including trachea and lungs for histopathology and PCR testing for the *p32* gene. The present study demonstrated that the three isolates of ILTV, including ILT-BASRAH 1, ILT-BASRAH 2, and ILT-BASRAH 3, caused the typical signs and pathological changes of ILT in layers chickens. Phylogenetic analyses indicated that ILT-BASRAH 1 exhibited a distant relationship with other current local isolates. Conversely, the isolates ILT-BASRAH 2 and ILT-BASRAH 3 exhibited a close relationship with each other. The initial results indicated that ILT-BASRAH 1 exhibited high nucleotide similarity to MK895003.1, MK895000.1, and MK894999.1 from Australia, which are representative of recombinant strains derived from live attenuated vaccine strains, as well as PQ232589.1 from Georgia. Furthermore, ILT-BASRAH 2 and ILT-BASRAH 3 were identified as vaccine-related isolates. These isolates demonstrated a high level of genetic similarity and a close phylogenetic relationship to the *Gallid alphaherpesvirus* 1 isolate TJ2019 (GenBank accession no. PP062931.1), originating from Chinese source flocks. The current study determined that ILT-BASRAH isolates 1, 2, and 3 exhibited genetic similarity, suggesting that they likely originated from the same or closely related sources. Their difference from vaccine strains, including the minor variation in ILT-BASRAH 1, might indicate regional viral adaptation.

Keywords: *Gallid alphaherpesvirus*, Histological change, Layer chicken, Phylogenetic

INTRODUCTION

Chickens are primarily affected by many respiratory diseases. Infectious Laryngotracheitis (ILT) was first identified in the United States in 1925. It continues to cause substantial economic damage to the worldwide poultry sector (Fuchs et al., 2007). The ILT is caused by *Gallid herpesvirus 1*, which belongs to the Herpesviridae family (Ou and Giambrone, 2012). Clinical signs of ILT include nasal discharge, conjunctivitis, coughing, gasping, reduced egg production, and bloody mucus discharge. The severity of ILT varies; in certain cases, it may lead to severe respiratory complications that could potentially result in suffocation (Bagust et al., 2000). Diseases caused by ILT result in significant economic losses. These losses occur as they have a direct impact on growth, mortality, and egg production (Oldoni et al., 2008). Reduced egg production is also a primary indicator in laying hens infected with infectious laryngotracheitis virus (ILTV), as the disease impacts the overall health of the chickens and results in significant stress (Tadese et al., 2007). ILTV is mainly transmitted horizontally through direct contact with infected chickens or by inhaling secretions and droplets. Additionally, contaminated tools, food, and water supplies help spread the infection within poultry flocks. However, no vertical or transovarial transmission through eggs has been documented (Pajić et al., 2022). Following the infection, the virus begins to replicate in the trachea and conjunctiva. Clinical signs of illness in hens generally manifest after five days (Dufour-Zavala, 2008). Infected chickens may begin to transmit the virus within two days of infection. Additionally, sick hens could act as a source of ILTV (Chukiatsiri and Pohuang, 2018). Despite vaccination of chicken flocks, ILT disease remains a threat, particularly in areas with a high poultry industry presence (Yan et al., 2016). Therefore, a strategy of careful and regular clinical monitoring and ongoing immunological assessment of chicken flocks should be implemented as part of early diagnosis and control (Mo and Mo, 2025). Primary diagnosis of ILT depended on clinical signs, macroscopic changes, and then laboratory testing, as well as histopathological and molecular identification. Histopathological examination can identify common lesions such as syncytial cells and intranuclear inclusion bodies,

To cite this paper: Mohammed SS, Khaleefah IA, Ali RAA, Najem HA, Almayahi WM, and Lateif BM (2025). Clinical and Genetic Characterization of Infectious Laryngotracheitis Virus in Layer Chickens in Basrah, Iraq. *World Vet. J.*, 15(3): 588-596. DOI: https://dx.doi.org/10.54203/scil.2025.wvj59