Open Access

Experimental Investigations on Pigs Infected with Japanese Encephalitis Virus Genotype 4

Arzu Jing*

Department of Medical Microbiology, Istanbul University, Istanbul 34093, Türkiye

Introduction

Japanese Encephalitis is a vector-borne viral disease primarily affecting the central nervous system. The Japanese Encephalitis Virus is classified into the family Flaviviridae and is transmitted through the bite of infected mosquitoes, particularly Culex species. JE is endemic in many parts of Asia, including Southeast Asia, the Pacific Islands, and parts of the Indian subcontinent, where it poses a significant public health threat. The virus exists in various genotypes, with Genotype 4 (G4) being one of the most predominant circulating strains in certain regions, particularly in China and other parts of East and Southeast Asia. Pigs have been identified as amplifying hosts for JEV, meaning that they play a crucial role in maintaining and spreading the virus within the environment, facilitating its transmission between mosquitoes and other animals. Understanding the pathogenesis of JEV in pigs, particularly strains like Genotype 4, is critical for devising control strategies, improving vaccination protocols, and understanding the disease dynamics. Experimental studies involving pigs infected with JEV Genotype 4 have become an essential part of research aimed at controlling this disease. This article delves into these experimental studies, focusing on their significance, methods, findings, and the implications of these studies for public health and veterinary medicine [1,2].

Description

Several experimental studies have been conducted to better understand the dynamics of JEV G4 infection in pigs. These studies typically involve the controlled infection of pigs with the virus to observe the progression of the disease, immune responses, viral shedding patterns, and the potential for transmission to mosquitoes. These studies also provide insights into the pathogenesis of JEV G4, its replication mechanisms, and the clinical outcomes of the infection. In most experimental studies, pigs are exposed to JEV G4 through inoculation, either by intramuscular or intradermal routes, to mimic natural infection. The viral load, clinical signs, and immune response are monitored over time. Blood samples, tissue biopsies, and nasal swabs are often collected to measure viral load and analyze tissue damage. Additionally, pigs are typically monitored for the development of antibodies to assess their immune response to the virus. The studies may also involve the collection of mosquitoes that feed on the infected pigs to determine whether the virus can be transmitted to new hosts. This provides crucial information on the role of pigs as amplifying hosts and helps assess the effectiveness of various mosquito control strategies. Often, molecular and serological techniques are employed to track the virus's progression and measure the viral load in various tissues and fluid [3-5].

Conclusion

Experimental studies involving pigs infected with Japanese Encephalitis

*Address for Correspondence: Arzu Jing, Department of Medical Microbiology, Istanbul University, Istanbul 34093, Türkiye, E-mail: jinga@gmail.com

Copyright: © 2025 Jing A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 02 January, 2025, Manuscript No. vcrh-25-163571; **Editor assigned**: 04 January, 2025, Pre QC No. P-163571; **Reviewed:** 16 January, 2025, QC No. Q-163571; **Revised:** 23 January, 2025, Manuscript No. R-163571; **Published:** 30 January, 2025, DOI: 10.37421/2736-657X.2025.9.288

Virus Genotype 4 (JEV G4) have provided valuable insights into the transmission dynamics, pathogenesis, and potential control strategies for this emerging viral disease. Pigs serve as critical amplifying hosts, silently harboring and transmitting the virus to mosquitoes, which in turn pose a significant risk to humans. By deepening our understanding of how JEV G4 behaves in pigs, researchers can develop better diagnostic tools, vaccines, and control measures to prevent outbreaks and mitigate the public health risks associated with this disease. As JEV G4 continues to spread in endemic regions, ongoing research remains crucial for developing effective interventions and safeguarding both animal and human health.

Acknowledgement

None.

Conflict of Interest

None.

References

- Ruuskanen, Olli, Elina Lahti, Lance C. Jennings and David R. Murdoch. "Viral pneumonia." Lancet 377 (2011): 1264-1275.
- Aliberti, Stefano, Luis F. Reyes, Paola Faverio and Giovanni Sotgiu, et al. "Global initiative for meticillin-resistant *Staphylococcus aureus* pneumonia (GLIMP): An international, observational cohort study." *Lancet Infect Dis* 16 (2016): 1364-1376.
- Radovanovic, Dejan, Giovanni Sotgiu, Mateja Jankovic and Padukudru Anand Mahesh, et al. "An international perspective on hospitalized patients with viral community-acquired pneumonia." *Eur J Intern Med* 60 (2019): 54-70.
- Santus, Pierachille, Dejan Radovanovic, Maria Rita Gismondo and Sara Giordana Rimoldi, et al. "Respiratory syncytial virus burden and risk factors for severe disease in patients presenting to the emergency department with flu-like symptoms or acute respiratory failure." *Respir Med* 218 (2023): 107404.
- Cui, Chendi, Tristan T. Timbrook, Cate Polacek and Zoe Heins, et al. "Disease burden and high-risk populations for complications in patients with acute respiratory infections: A scoping review." *Front Med* 11 (2024): 132-5236.

How to cite this article: Jing, Arzu. "Experimental Investigations on Pigs Infected with Japanese Encephalitis Virus Genotype 4." Virol Curr Res 9 (2025): 288.