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LETTER TO THE EDITOR

Molecular Epidemiology Investigation for Adenovirus in Stool Sample Adjusted Incidence

Rujittika Mungmunpuntipantip [1] and Viroj Wiwanitkit [2]

[1] *Private Academic Consultant, Bangkok Thailand*
[2] *Honorary Professor, Dr. DY Patil University, Pune, India*

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Correspondence:
Rujittika Mungmunpuntipantip
Private Academic Consultant
Bangkok
Thailand
Email: rujittika@gmail.com

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Acute viral gastroenteritis is a frequent illness that affects people of all ages. In immunocompromised people, viral causes of AGE can induce long-term diarrhea. Diagnostic testing algorithms are being influenced by nucleic acid amplification assays. Because of its rising clinical importance, adenovirus is currently prominently emphasized among numerous viruses. In various countries in 2022, there are rising cases of unexplained acute hepatitis, with a possible clinical link with adenovirus, particularly HAdV-F41 [1].

As a result, adenovirus diagnosis is a topic that should be explored right now. In general, conventional diagnostic procedures (enzyme-linked immunosorbent assay (ELISA) or quantitative real-time PCR (qPCR)) have major limitations in detecting low viral quantities in biological matrices, particularly stool samples. In comparison to ELISA, qPCR has been shown to be more specific and has become the current gold standard. However, there is growing worry about the possibility of a high number of false negatives due to qPCR. Significant DNA losses during the extraction stage are a major source of false negatives. A new generation of immuno-real-time PCR (iPCR) was recommended in a recent publication because it can greatly boost the recovery rate [2].

However, in many circumstances, the traditional qPCR is performed, and data on viral molecular epidemiology is mainly based on that traditional research. Because there is a potential of a false negative, clinical laborato-

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ry interpretations must be adjusted appropriately. The authors revisit data from a prior viral molecular epidemiology investigation in stool samples from the general population in a tropical developing nation with a high adenovirus infection rate [3]. The authors apply a false negative adjustment to produce the new adjusted incidence, which can provide more reliable viral epidemiology data. According to a prior study, iPCR recovery rates range from 21 to 54 percent, compared to 0.3 - 9.5 percent for traditional qPCR [2].

As a result, the projected likelihood of qPCR producing a false negative is between 11.5 and 53.7 percent. Adenovirus was shown to be present in 5.84 percent of the population in a previous epidemiological study. HAdV-F41 was found in 25% of the positive samples [4]. As a result of the adjustments, the anticipated adenovirus incidence might range from 17.34 to 65.2 percent. The prevalence of HAdV-F41 might range between 3.468 and 63.04 percent. The adjusted incidence is quite high, and it could be linked to the research area's high rate of unexplained gastroenteritis and hepatitis.

Declaration of Interest:

None.

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