

# Cartridge-Based Nucleic Acid Amplification Test for the Diagnosis of Pulmonary Tuberculosis: correspondence

Dear Editor,

We would like to share ideas on the publication, “A comparative study of cartridge-based nucleic acid amplification test and Ziehl–Neelsen stain with culture on Lowenstein–Jensen media as the gold standard for the diagnosis of pulmonary tuberculosis.”<sup>[1]</sup> Roy *et al.* concluded that “whereas culture remains the gold standard for the diagnosis of tuberculosis (TB), CBNAAT has taken over the domain of diagnosis owing to its high sensitivity and rapid turnover time.”<sup>[1]</sup> We agree that the new alternative technique might be useful for diagnosing TB. Previous reports also showed that the new technique might be superior for diagnosis.<sup>[2-4]</sup> However, there are some issues for further studies. First, the cost-effectiveness of the new alternative technique should be assessed similar to Table 1. For a setting with limited resources, cost-effectiveness is an important issue. Second, the new system might be based on a more complex tool. It might require a medical technologist for quality control of analysis. It is questionable whether classical staining is still more functional in rural fieldwork. Finally, it should note that the new technique has a specificity of about 90% compared to culture.<sup>[3]</sup> Hence, there is still a chance of nondiagnosis, which might lead to difficulty in disease control.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

Rujittika Mungmunpantipantip, Viroj Wiwanitkit<sup>1</sup>

Private Academic Consultant, Bangkok, Thailand, <sup>1</sup>Department of Community Medicine, Dr. D. Y. Patil University, Pune, Maharashtra, India

**Table 1: Cost-effectiveness analysis comparing between intradermal and intramuscular COVID-19 vaccine administration**

Vaccination methods	Cost (Euro)	Times	Cost-effectiveness value (Euro)
Intramuscular	34.32	75	0.458
Intradermal	6.86	38	0.181

**Address for correspondence:** Dr. Rujittika Mungmunpantipantip, Private Academic Consultant, Bangkok, Thailand. E-mail: [rujittika@gmail.com](mailto:rujittika@gmail.com)

## REFERENCES

- Roy RD, Gupta SD. A comparative study of cartridge-based nucleic acid amplification test and Ziehl-Neelsen stain with culture on Lowenstein-Jensen media as gold standard for the diagnosis of pulmonary tuberculosis. *Indian J Respir Care* 2022;11:39-42.
- Chandrappa N, Rastogi A, Bhatnagar AK. Cartridge based nucleic acid amplification test is superior in diagnosing lymphnode tuberculosis. *Indian J Tuberc* 2019;66:402-6.
- Dayal R, Yadav A, Agarwal D, Kumar M, Kamal R, Singh D, *et al.* Comparison of diagnostic yield of tuberculosis loop-mediated isothermal amplification assay with cartridge-based nucleic acid amplification test, acid-fast bacilli microscopy, and mycobacteria growth indicator tube culture in children with pulmonary tuberculosis. *J Pediatric Infect Dis Soc* 2021;10:83-7.
- Youngs J, Patil S, Jain Y. A prospective study evaluating the impact of cartridge-based nucleic acid amplification test (CBNAAT) on the management of tuberculosis in a low-resource high-burden Indian rural setting. *J Family Med Prim Care* 2018;7:982-92.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

### Access this article online

Quick Response Code:



Website: [www.ijrc.in](http://www.ijrc.in)

DOI: [10.4103/ijrc.ijrc\\_6\\_22](https://doi.org/10.4103/ijrc.ijrc_6_22)

**How to cite this article:** Mungmunpantipantip R, Wiwanitkit V. Cartridge-Based nucleic acid amplification test for the diagnosis of pulmonary tuberculosis: correspondence. *Indian J Respir Care* 2022;11:193.

Received: 06-01-2022

Revised: 11-02-2022

Accepted: 12-02-2022

Published: 08-04-2022

© 2022 Indian Journal of Respiratory Care | Published by Wolters Kluwer - Medknow