or weeks (in the case of TMA) after the abatement of symptoms, when subjects are no longer infectious.

As such, RAT and rt-PCR detect different stages of the disease. RATs yield positive results over a shorter period of time during the acute phase of infection.

An analysis of the SARS-CoV-2 viral kinetics (Fig. 1) reveals that high-frequency rapid antigen test screening strategies are just as effective in detecting infectious individuals as a low-frequency rt-PCR testing regimen[5]. The difference lies in the characteristics of each test: unlike rt-PCR, RATs are "versatile" tests that can be used anywhere, are inexpensive and return results in 15 min. Applying a RAT screening strategy could identify the same number of infectious individuals as rt-PCR.

Returning to the report by Marco et al., it would be useful to know the Cts of the rt-PCR-positive samples three and five days after the initial test, primarily to ascertain the patients' actual risk of virus transmission. Cts greater than 25–30 represent a low risk of virus transmission and a high probability of a negative RAT result, regardless of whether the subject is symptomatic or asymptomatic. A negative RAT followed by a positive rt-PCR in already isolated subjects essentially suggests that the Ct is elevated and the final phase of infection or a resolved infection is being detected.

This is particularly true of RAT, an ultrasensitive technique that detects up to 60 copies of SARS-CoV-2 (as opposed to 3,000–5,000 copies for rt-PCR)[6]. RAT is currently the most commonly used technique in mass screening strategies because samples can be pooled in the laboratory and because positive results can be returned for up to eight weeks after infection.

In conclusion, we believe that RAT and NAAT (rt-PCR or TMA) detect different phenomena. If you want a simple way to identify subjects with the potential to transmit SARS-CoV-2, RATs are the ideal tool. However, if you would like to screen a cross-sectional cohort that identifies the largest possible number of subjects infected (current and recent), NAAT would be the technique that detects the most number of cases.

Conflicts of interest

The authors declare that they have no conflicts of interest.

References

1. Marco A, Solé C, Abdo IJ, Turu E. Low sensitivity of rapid antigenic tests as a screening method in an outbreak of SARS-CoV-2 infection in prison. Enferm Infecc Microbiol Clin. 2021, http://dx.doi.org/10.1016/j.eimc.2021.01.016.
2. Pray IW, Ford L, Cole D, Lee C, Bigouette JP, Abedi GR, et al. Performance of an antigen-based test for asymptomatic and symptomatic SARS-CoV-2 testing at two University Campuses — Wisconsin, September–October 2020. MMWR Morb Mortal Wkly Rep. 2021;69:1642–7.
3. Porte L, Legarraga P, Vollrath V, Aguilera X, Munita JM, Araos R, et al. Evaluation of a novel antigen-based rapid detection test for the diagnosis of SARS-CoV-2 in respiratory samples. Int J Infect Dis. 2020;99:328–33.
4. Alemany A, Baro B, Ouchi D, Ubals M, Corbacho-Monné M, Rodon J, et al. Analytical and Clinical Performance of the Panbio COVID-19 antigen-detecting rapid diagnostic test. J Infect. 2021 [Accessed 8 January 2021]. Available from: https://doi.org/10.1101/2020.10.30.20223198
5. Mina MJ, Parker R, Larremore DB. Rethinking Covid-19 test sensitivity — a strategy for containment. N Engl J Med. 2020;383:e120.
6. Chan JF-W, Yip CC-Y, To KK-W, Tang TH-C, Wong SC-Y, Leung K-H, et al. Improved molecular diagnosis of COVID-19 by the novel, highly sensitive and specific COVID-19-RdRp/Hel real-time reverse transcription-PCR assay validated in vitro and with clinical specimens. J Clin Microbiol. 2020;58(5).

Boris Revollo Barriga *, Josep M. Llibre Codina

Servicio de Enfermedades Infecciosas y Fundación Lucha Contra el Sida y Enfermedades Infecciosas, Hospital Universitario Germans Trias i Pujol, Badalona, Spain

* Corresponding author.
E-mail address: brevollo@flsida.org (B. Revollo Barriga).

https://doi.org/10.1016/j.eimce.2021.09.008

Reply to «Antigen-detecting rapid tests or real-time PCR, what test to use and why?»☆

Respuesta a «Test rápidos antigénicos o PCR en tiempo real para SARS-CoV-2, ¿qué test usar y por qué?»

Dear Editor,

We appreciate Revollo and Llibre's comments[1] on the letter recently published by our group on an outbreak of SARS-CoV-2 infection in Figueras prison (Girona)[2]. As a reminder, infection was detected by rapid antigen test (RAT) in three mildly symptomatic inmates between 23 and 25 December. As a result, in the afternoon of 25 December, the 81 remaining inmates of that prison block were screened using RAT and nine positive results were identified. On 28 December, the 72 inmates who tested negative by RAT underwent rt-PCR testing, 27 (37.5%) of which were positive. The sensitivity of the RAT in this scenario was very low at just 25%, which is why we reported it.

For reasons of brevity, we did not include any information about the population studied in our original letter, which, according to Revollo and Llibre's comments, could be relevant. Since 1 July 2020, new prisoners in Catalonia have been screened by rt-PCR. In total, 46.2% of those infected by the outbreak had been incarcerated after that date and had a prior negative rt-PCR test. The rest of the infected inmates had been in prison for many months and had not been diagnosed with SARS-CoV-2 infection nor monitored due to close contact with an infected individual. As such, the risk of there being a persistently positive or residual rt-PCR result in an infected inmate, as raised by Revollo and Llibre, we consider to be extremely small. Regarding the use of rt-cycle thresholds (Ct) that Revollo and Llibre also discuss, their use in initial phases of infection is low as the values vary over time[3]. In fact, we only use them very rarely, almost exclusively to assess infection risk in cases with persistently positive PCR results that require prolonged isolation, as discharge without knowing whether or not the subject is infectious is a risk in a confined environment.

We agree with Revollo and Llibre's assessment of RATs' high sensitivity for detecting symptomatic cases with a high viral load and transmission potential, typically in the first five days. However, current data are not as conclusive when it comes to their use in pre-symptomatic or asymptomatic patients. The Centers for

DOI of original article: https://doi.org/10.1016/j.eimc.2021.06.015.
☆ Please cite this article as: Marco A, Solé C, Abdo IJ, Turu E. Respuesta a «Test rápidos antigénicos o PCR en tiempo real para SARS-CoV-2, ¿qué test usar y por qué?». Enferm Infecc Microbiol Clin. 2021;39:532–533.

Disease Control and Prevention (CDC) suggest that negative RAT results should sometimes be considered presumptive, and in some circumstances (contact with an infected person or high prevalence of infection in the community), it is advisable to confirm the result with a SARS-CoV-2 nucleic acid amplification test (NAAT)[4]. Other organisations, such as Cochrane, have also confirmed that RATs are generally less sensitive in asymptomatic patients and more sensitive in settings with a high prevalence of infection[5]. Although it is true that RATs have shown high sensitivity in infected subjects with Ct <25, as pointed out by Revollo and Llibre, the cycle thresholds, as has already been mentioned, are dynamic and vary over time. Moreover, cases with Ct <25 may not include all potential risk cases.

In addition, the diagnostic strategy in a scenario with low or no viral circulation (scenario A) cannot be similar to a scenario with high viral circulation and localised outbreaks (scenario B) where infection of asymptomatic patients can be 70% or higher[6]. The specificity of rapid antigen tests is high (close to 100%) and they may be suitable for screening populations in scenario A, even assuming that they entail defined and potentially acceptable risks in certain circumstances[5]. However, what may be acceptable in scenario A, such as the Barcelona *Love of Lesbian* pilot concert that Revollo and Llibre participated in[7], is not acceptable in the context of an outbreak, and even less so in a confined environment like a prison. Exception to this rule is when RAT screening negative results are subsequently confirmed by rt-PCR, as currently recommended by the guidelines and protocols of Spain's Ministry of Health[8], the European Centre for Disease Prevention and Control (ECDC)[9] and the CDC[4].

Confidentiality

The protocols governing the publication of patient data of our place of work have been followed.

Funding

None.

Conflicts of interest

None.

References

1. Revollo B, Llibre JM. Test rápidos antigénicos o PCR en tiempo real para SARS-CoV-2, ¿que test usar y por qué? Enferm Infecc Microbiol Clin. 2021, http://dx.doi.org/10.1016/j.eimc.2021.06.001.
2. Marco A, Solé C, Abdo IJ, Turu E. Baja sensibilidad de los test rápidos antigénicos como método de cribado en un brote de infección por SARS-CoV-2 en prisión. Enferm Infecc Microbiol Clin. 2021, http://dx.doi.org/10.1016/j.eimc.2021.01.016.
3. Romero-Alvarez D, Garzon-Chavez D, Espinosa F, Ligña E, Teran E, Mora F, et al. Cycle threshold values in the context of multiple RT-PCR testing for SARS-CoV-2. Risk Manag Healthc Policy. 2021;14:1311–7, http://dx.doi.org/10.2147/RMHP.S282962.
4. Centers for Disease Control and Prevention (CDC). Interim Guidance for Antigen Testing for SARS-CoV-2. Update 13 May 13 2021. Available from: https://www.cdc.gov/coronavirus/2019-ncov/lab/resources/antigen-tests-guidelines.html [Accessed 6 June 2021].
5. Dinnes J, Deeks JJ, Berhane S, Taylor M, Adriano A, Davenport C, et al. Rapid, point-of-care antigen and molecular-based tests for diagnosis of SARS-CoV-2 infection. Cochrane Database Syst Rev. 2021, http://dx.doi.org/10.1002/14651858.CD013705.pub2.
6. Centers for Disease Control and Prevention (CDC). COVID-19 Pandemic Planning Scenarios. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html [Accessed 3 June 2021].
7. Diario Médico. Solo 6 positivos en el concierto masivo 'piloto' de *Love of Lesbian* en Barcelona. Available from: https://www.diariomedico.com/medicina/medicina-preventiva/solo-6-positivos-en-el-concierto-masivo-piloto-de-love-lesbian-en-barcelona.html [Accessed 6 June 2021].
8. Estrategia de detección precoz, vigilancia y control de COVID-19. Centro de Coordinación de Alertas y Emergencias Sanitarias. Ministerio de Sanidad. Actualizado 26 Feb 2021. Available from: https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf [Accessed 6 June 2021.
9. European Centre for Disease Prevention and Control: Options for the use of rapid antigen tests for COVID-19 in the EU/EEA and the UK; 19 Nov 2020. Available from: https://www.ecdc.europa.eu/en/publications-data/options-use-rapid-antigen-tests-covid-19-eueea-and-uk [Accessed 6 June 2021].

Andrés Marco [a,b,*], Concepció Solé [c], Indiana J. Abdo [c], Elisabet Turu [a]

[a] *Programa de Salud Penitenciaria, Instituto Catalán de la Salud, Catalonia, Spain*
[b] *CIBER Epidemiologia y Salud Pública (CIBERESP), Spain*
[c] *Equipo de Atención Primaria Penitenciaria, Figueres, Girona, Spain*

* Corresponding author.
E-mail address: amarco@gencat.cat (A. Marco).

https://doi.org/10.1016/j.eimce.2021.09.010

Guillain-Barré-like syndrome as a rare presentation of severe primary HIV-infection

Sindrome de Guillain-Barré como rara forma de presentación de primoinfección grave por HIV

Dear Editor,

Several types of central and peripheral neurologic complications during primary and chronic HIV infection have been described in people living with HIV (PLWH).[1] For instance, Guillain-Barré syndrome (GBS) is an acute inflammatory demyelinating polyneuropathy (AIDP) that has rarely been reported as a neurologic complication during primary HIV infection (PHI).[2]

A 60-year-old female patient, originally from South America and on travel in Europe during the prior three weeks, presented with progressive lower limb weakness and pain, paresthesia and unstable gait. Two weeks prior to admission, she described odynophagia, diarrhoea and a flu-like syndrome with rashes present on both the face and neckline (Fig. 1). She was afebrile and haemodynamically stable upon clinical examination. At admission, she presented with moderate areflexic paraparesis (2/5) from the lower limbs to abdominal muscles, with reduced sensitivity. Biochemistry and red and white blood cell counts were unremarkable. Ganglioside antibody screen and tumor markers were normal. Cerebrospinal fluid (CSF) revealed pleocytosis with 67 cells/mm^3 (86% lymphocytes); hyperproteinorrachia of 1148 mg/L (normal range $\leq$ 500 mg/L); and normal glucose and adenosine deaminase (ADA) levels. Microbiologic tests of CSF included polymerase chain reaction analyses and antibody testing for herpes virus, enterovirus, JC-polyomavirus and toxoplasma; all were negative. CSF and blood *Cryptococcus neoformans* antigen tested negative. Screening for other arthropod-borne viruses and opportunistic infections, and magnetic resonance imaging of brain and spinal cord were all unremarkable. Common enteric pathogens in faecal samples were negative by molecular detection and cultures. The patient was started on intravenous immunoglobulin (IVIG) and did not improve.