

Surveillance of Wildlife Diseases from the National Forestry and Grassland Administration.

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Rapid Antigen Test for Postmortem Evaluation of SARS-CoV-2 Carriage

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Detecting severe acute respiratory syndrome coronavirus 2 in deceased patients is key when considering appropriate safety measures to prevent infection during postmortem examinations. A prospective cohort study comparing a rapid antigen test with quantitative reverse transcription PCR showed the rapid test's usability as a tool to guide autopsy practice.

Rapid detection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is essential to prevent viral dissemination. Rapid antigen tests (RATs) have recently been approved and are now widely used in the current coronavirus disease (COVID-19) pandemic (1). Although the performance of RATs has been evaluated extensively in clinics (2–4), data on postmortem testing are still lacking (5).

We performed a prospective cohort study in which we evaluated the performance of the Roche/SD Biosensor SARS-CoV-2 RAT (<https://www.roche.com>) in 30 consecutive deceased COVID-19 patients at the University Hospital, Medical University of Graz (Graz, Austria), during November 28–December 23, 2020. We tested each corpse with nasopharyngeal swabs for RAT (using the manufacturer's kit) and eSwabs (<https://www.copanusa.com>) for quantitative reverse transcription PCR (qRT-PCR) targeted to the viral envelope (E) and nucleocapsid (N) genes of SARS-CoV-2. Furthermore, we used virus isolation from lung tissue swabs from an additional cohort of deceased COVID-19 patients (n = 11) to compare molecular detection and virus cultivability (Appendix, <https://wwwnc.cdc.gov/EID/article/27/6/21-0226-App1.pdf>).

All patients were Caucasian, median age was 78 years (range 62–93 years), and 51.2% were female. The median disease duration (interval between the first positive SARS-CoV-2 PCR and death) was 11 days (range 1–43 days). The median postmortem interval (time between death and specimen sampling) was 23 hours (range 8–124 hours; Table; Appendix).

PCR is the current standard for SARS-CoV-2 detection (1,2). In our cohort, qRT-PCR targeted to the E gene showed a higher sensitivity than qRT-PCR for

when qRT-PCR is not readily available, RAT might be useful in selecting the most hazardous corpses that should be examined under special conditions (e.g., Biosafety Level 3 [9]). RAT could therefore be a valuable adjunct tool in guiding autopsy practice.

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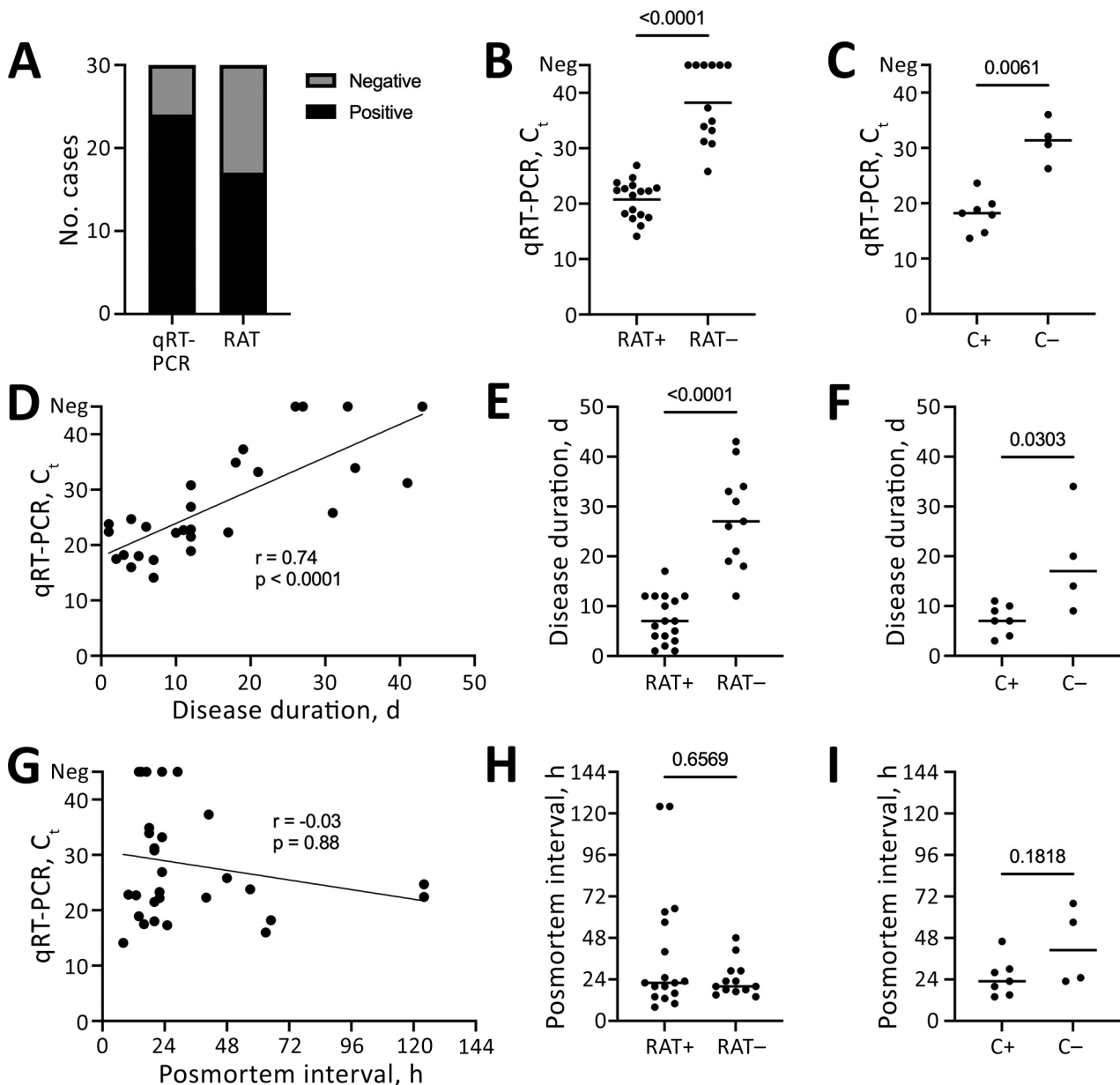


Figure. Postmortem detection and cultivation of SARS-CoV-2 for investigation of RAT for postmortem evaluation of SARS-CoV-2 carriage, Graz, Austria. A) Among 30 deceased SARS-CoV-2 patients, RAT detected fewer positive cases than did qRT-PCR. B) RAT-negative cases show significantly higher C_t values in qRT-PCR compared with RAT-positive cases (Mann-Whitney test). C) Cultivation negative and positive cases mirror C_t values of RAT results (Mann-Whitney test). D–F) Longer disease durations are significantly correlated with higher C_t values (Spearman correlation test; D), negative RAT results (Mann-Whitney test; E), and negative cultivation results (Mann-Whitney test; F). G–I) No significant correlation was found between postmortem intervals and C_t values (Spearman correlation test; G), RAT results (Mann-Whitney test; H), or cultivation results (Mann-Whitney test; I). C, cultivation; C_t , cycle threshold; neg, negative; qRT-PCR, quantitative reverse transcription PCR; RAT, rapid antigen test; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; +, positive; –, negative.

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Respiratory Viral Shedding in Healthcare Workers Reinfected with SARS-CoV-2, Brazil, 2020

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We documented 4 cases of severe acute respiratory syndrome coronavirus 2 reinfection by non-variant of concern strains among healthcare workers in Campinas, Brazil. We isolated infectious particles from nasopharyngeal secretions during both infection episodes. Improved and continued protection measures are necessary to mitigate the risk for reinfection among healthcare workers.

Coronavirus disease (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which emerged in Wuhan, China,

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