

Real-World Evidence: The Low Validity of Temperature Screening for COVID-19 Triage

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Background: Globally, massive non-contact temperature screening is used as a fundamental test for detecting COVID-19. According to FDA, the normal body temperature should range between 36.1-37.2°C with the use of non-contact infrared thermometers. It is imperative to know if this is an effective and safe method in oncology and transplant patients where fever may occur for multiple reasons.

Objective: To evaluate the sensitivity, specificity and accuracy of fever measurement with NCITs among oncological and transplant patients with positive SARS-Cov-2 test results.

Methods: Consecutive observational study conducted from March to August 2020 in a transplant unit at the Clinical Institute Fundeni, Bucharest. All patients between the age 6 months and 91 years who underwent SARS-Cov-2 testing were eligible for inclusion. Patients with non-conclusive PCR, those with less than 1 day hospital stay, out-patient visits and patient attenders were excluded from the sample.

Temperature was measured on the day of admission using NCITs held at a distance of 1-5 Cm from the skin. A questionnaire about demographics, symptoms, contacts and travel history was completed by the patients at the same time. Fever was defined as body temperature $\geq 37.3^\circ\text{C}$. Testing of nose and throat swabs were performed using a quantitative reverse-transcriptase polymerase chain reaction and the patients were allocated according to the RT-PCR results to green zone for those with negative test results and red zone for those positive for COVID-19.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



What's the validity of temperature screening for Covid-19 triage?

Results: Of the 5231 patients, 49 tested fever + and 53 were PCR +. Three PCR were inconclusive and 5175 were negative. Out of 53 PCR + cases, 5 registered a fever but 48 did not. Out of 5175 PCR – cases, 44 registered a fever. Sensitivity was 9.43% 95% CI (3.13-20.66%), Specificity 99.15% 95% CI (98.86-99.38%), accuracy 98.25% 95% CI (97.86-98.59%), Fischer exact <0.001 , disease prevalence 1.00%.

Conclusions: Testing for fever with NCITs has a very low sensitivity to COVID-19 although the specificity is very high.

Key message: Body temperature measurement should be eliminated from hospital admission procedures as the usefulness of NCITs is questionable. A possible alternative could be rapid low-cost testing while the results of PCR are awaited.

Similar evidence: In a single-center Australian study, screening for fever lacked sensitivity for detection of patients with SARS-Cov2 (1). In a study conducted in Taiwan, out of 40,887 patients who attended the hospital, fever was detected in 5 patients on the outdoor triage and in 37 patients in the indoor clinic zone after being acclimatized (2).

EXPERT COMMENT

“Use of temperature screening as a means of detecting Covid-19 cases is not routinely recommended as fever may not be present in majority of Covid-19 infections and there are several complexities associated with the use of NCITs. Fever screening should only be used in addition to the public health advice namely physical and social distancing, cough etiquette, handwashing and face covering”.

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With warm regards,

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Reference

- Mitra B, Luckhoff C, Mitchell RD, O'Reilly GM, Smit V, Cameron PA. Temperature screening has negligible value for control of COVID-19. *Emerg Med Australas.* (2020) 32:867–9. doi: 10.1111/1742-6723.13578.
- Hsiao SH, Chen TC, Chien HC, Yang CJ, Chen YH. Measurement of body temperature to prevent pandemic COVID-19 in hospitals in Taiwan: repeated measurement is necessary. *J Hosp Infect.* (2020) 105:360–61. doi: 10.1016/j.jhin.2020.04.004.