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An Assessment of the Performance of Low Dose CT Thorax (CT Pneumonia) as a screeing tool in the diagnosis of Covid-19

Michael Pace Bardon, Julian Cassar, Gabriella Balzan, Peter Cassar, Luca Conti, Nicola Mallia, Stephanie Brincat, Emma Schembri, Martin Balzan, Yanika Farrugia, Peter Fsadni, Gabriel Galea, Richard Pullicino, Adrian Mizzi, Stephen Montefort

Article

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Abstract

The advent of the COVID-19 pandemic in Malta led to a number of innovations in terms of work practices, including the introduction of blanket swabbing of all hospital admissions for Covid-19 using PCR nasopharyngeal swab as well as the temporary indiscriminate use of Low dose CT Thorax (CT Pneumonia) as a screening tool in all patients with respiratory symptoms or fever, a recent positive contact, history of travel abroad and all health care workers presenting to hospital.

Our aim was to assess the performance of CT pneumonia as a screening tool for Covid-19 in a cohort of patients presenting to large teaching hospital.

661 screening CTs performed between 29/3/20 and 14/4/20 were included. 4 CTs (0.6%) were reported as positive for Covid-19, 45 (6.8%) were reported as 'indeterminate' with the remaining 612 (92.6%) reported as 'alternative diagnosis' or negative.

Covid-19-PCR-swab was positive in 21 patients (3.2%). Of these, 14 (66.7%) had a Negative CT Pneumonia, 6 (28.6%) had a CT reported as 'Alternative Diagnosis' and 1 (4.8%) had a positive CT for Covid-19. Among the remaining cases testing negative on PCR swab, 3 were reported as having a positive CT and in 2 of these cases,

Covid-19 was confirmed using serology testing. Within the entire population of patients who underwent CT Pneumonia, the overall sensitivity for Covid-19 was 13.0%, specificity was 99.8%, positive predictive value was 75.0% and negative predictive value was 96.7%.

CT Pneumonia had a low sensitivity for Covid-19 in our cohort of patients making it a poor screening tool, however it may have a role in those who test negative on PCR swab where a high index of suspicion persists.

Covid-19   Diagnosis   Adults

Footnotes

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