Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
PS04.24 (267)
Post-COVID-19 Syndrome in Healthcare Personnel in Dr. Mohammad Hoesin General Hospital Palembang Indonesia

N.A. Salim 1,2,∗, B. Stevanyn 3, A.A. Putri 3, M. Khoirudin 1, A.M. Nadhif 3, H.A. Hamzah 3, R.L. Andrian 2,3, M. Permata 2,3, H. Hudari 2,3, Z. Ahmad 2,3
1 Faculty of Medicine, Sriwijaya University - Madang Campus, Resident of Sp2 specialist of Tropic and Infectious Disease Internal Medicine, Palembang, Indonesia 2 RSUP Dr. Mohammad Hoesin, Internal Medicine, Palembang, Indonesia 3 Faculty of Medicine, Sriwijaya University - Madang Campus, Palembang, Indonesia

Purpose: Coronavirus infectious disease 2019 (COVID-19) had been infecting the world including healthcare personnel (HCP), but many survivors still experienced symptoms although had recovered with negative PCR results. This study aimed to identify post-COVID-19 syndrome among HCP in our hospital.

Methods & Materials: We conducted a cross-sectional study, asking HCP, surviving COVID-19 from April 2020 until February 2021, confirmed by twice negative PCR SARS CoV-2, and still working at the hospital at the time the research was conducted, to fill in an online questionnaire asking questions about symptoms related to post COVID-19 syndrome.

Results: Total study participants who completed the questionnaire were 164, 106 (65%) of them were women, consisted of 21 (13%) specialists, 52 (32%) residents, and 91 (55%) nurses. The average age was 37 (26 – 69) years old. When they experienced COVID-19, 60 (37%) participants were in asymptomatic, 76 (46%) mild, 26 (16%) moderate, and 2 (1%) severe-critical condition. Among participants, 78 (48%) still had symptoms by the time the survey was conducted, 61 (78.2%) were women, and these symptoms were still experienced in 41 (53%) survivors who had recovered more than 3 months. Fatigue was the most common symptom reported (55, 71%), followed by cough (15, 19%), joint pain (12, 15%), headache (10, 13%), muscle pain (9, 12%), breathing difficulty (7,9%), anosmia (5, 6%), bitter tongue (4, 5%).

Conclusion: Post-COVID-19 syndrome was quite common in HCP and this might cause the inability to work, treat, and care for patients optimally. Particular attention should be paid to this condition.

https://doi.org/10.1016/j.ijid.2021.12.079

PS04.25 (857)
Beyond Diagnostics: The role of a RT-PCR laboratory in a pandemic
P. Srikant 1, R. Kuruvilla Thomas 1, S. Reju 1, R. Barani 1, M. Mani 1, G. Sarangan 1, K. Gopalakrishnan 1, S. Selvarajan 1, S. Kumar 1, Arumugam 1, S. Subramaniyan 1, Philip 1, S. Kumar 1, S. Uma 1
1 Sri Ramachandra Institute of Higher Education and Research, Microbiology, Chennai, India

Purpose: The gold standard for the detection of SARS-CoV-2 is Real Time Reverse Transcriptase PCR (rRT-PCR). A combination of nasopharyngeal and oropharyngeal swabs improves the sensitivity of detection of SARS-CoV-2 in samples. The first wave of COVID-19 impacted Chennai in May 2020 and lasted till October 2020. The second wave began in March 2021 and lasted till June 2021. The aim of this study is to compare and analyze the COVID-19 waves in 2020 and 2021 based on the data from a tertiary care centre in Chennai, India.

Methods & Materials: A total of 42,374 samples were tested by rRT-PCR (Rotor Gene-Q) between March 2020 and June 2021. RNA was extracted using Zymbio nucleic acid extraction kit. The target regions of the RT-PCR kits (ViroQ SARS CoV2, Bag Diagnostics, Germany) were the E-gene and RdRp gene. Quality control is maintained by routine participation in the external quality assurance scheme (EQAS).

Results: In 2020, 22,905 samples were tested and 3,415 samples tested positive for COVID 19. During the first wave of COVID-19 between May-October 2020, 2989 samples tested positive for COVID 19. Between January and June 2021, 19,469 samples were tested and 2,320 samples were COVID-19 positive. A total of 2,155 samples were positive for COVID-19 in the second wave between March-June 2020. The duration of the first wave was longer with a smaller peak in incidence of COVID 19. The second wave in 2021 had a shorter duration with a more pronounced spike in COVID-19 cases in April 2021.

Conclusion: The number of COVID 19 positive cases are similar between the two waves of COVID 19. However, the first wave of COVID-19 took place over a period of nearly six months, while the second wave occurred over three to four months. There is a noticeable surge in COVID-19 incidence observed in April-May 2021. This could indicate the increased infectivity of the virus as observed with the cases doubling rapidly during this time. Documenting the characteristics of the wave in terms of its rapidity of onset of disease and peaks in incidence would offer insight into the progression of COVID-19.

https://doi.org/10.1016/j.ijid.2021.12.078

PS04.26 (456)
Seroxprevalence of SARS-CoV-2 Antibodies Among Blood Donors in Malaysia During the Pre-Vaccination Period
A.M.A. Shukri 1,∗, A. Adnan 1, W. Seok Mui 1, M. Mohamad 1, F. Kamal 1, Z. Khalid 1, S.F.A. Mohd Nawi 1, N. Abu Amin 2
1 Universiti Teknologi MARA Fakulti Perubatan Kampus Sungai Buloh, Sungai Buloh, Malaysia 2 National Blood Centre, Kuala Lumpur, Malaysia

Purpose: We aimed to investigate the prevalence of antibodies against SARS-CoV-2 virus among blood donors in Klang Valley; a cohort that represent healthy individuals in a city which recorded a high number of COVID-19 infections in the country.

Methods & Materials: A total of 806 blood donors at the National Blood Centre were recruited between February to March 2021 during the third wave of the pandemic in Malaysia, a period just prior to the national COVID-19 vaccination programme began. 5 ml of blood were collected from each donor and the serum was subjected to qualitative determination of antibodies against SARS-CoV-2 virus using two tests. The first test detected total antibodies against SARS-CoV-2 nucleocapsid (N) [Elecsys® Anti-SARS-CoV-2 Electrochemiluminescence immunoassay (ECLIA), Roche Diagnostics] while the second test detected the total antibodies against SARS-CoV-2 receptor binding domain (RBD) [WANTAI SARS-CoV-2 Antibody (Enzyme linked immunoassay (ELISA), China)]. The tests were performed according to the manufacturer guidelines. The sera which produced positive results from both screening tests were then subjected to quantitative determination of antibodies against
PS04.27 (1000)

Mortality Among COVID-19 Patients in the Intensive Care Unit (ICU): A Single-Centre Study from a Malaysian Perspective

I. AbdulHaleem Zaki 1*, H.H. Zulkifly 1, N.F. Mansor 2, C.K. Lee 3, K.S. Eng 3, T. Ravi 4, M. Pathmanathan 5

1 Universiti Teknologi MARA, Puncak Alam Campus, Faculty of Pharmacy, Puncak Alam, Selangor, Malaysia
2 Kuala Lumpur Hospital, Kuala Lumpur, Malaysia
3 Sungai Buloh Hospital, Sungai Buloh, Selangor, Malaysia
4 CRC Hospital Sungai Buloh, Sungai Buloh, Selangor, Malaysia
5 National Institutes of Health, Shah Alam, Selangor, Malaysia

Purpose: This study investigated the prevalence of mortality among COVID-19 patients admitted to an intensive care unit (ICU) at a single centre hospital in Klang Valley, Selangor, Malaysia. Besides, adverse clinical events (ACE) among COVID-19 patients admitted to ICU who died and were alive were compared, and the factors associated with mortality were explored.

Methods & Materials: Patients admitted to a single centre ICU with polymerase chain reaction (PCR) confirmed of SARS-CoV-2 virus within February 2020-2021 were included in this study. Adverse clinical event (ACE) consists of the presence of pulmonary embolism (PE), deep vein thrombosis (DVT), line-related thrombosis, stroke, myocardial infarction (MI) and peripheral artery disease (PAD) during their ICU admission. A composite of ACE comprised ≥ 1 PE, DVT, line-related thrombosis, stroke, MI and PAD. Mortality is defined as COVID-19 patients who died during ICU admission throughout data collection.

Results: Mean (SD) age was 56.6 (13.7) with 63.5% male and 61.6% Malay. Median (IQR) 7 (3–14) days of ICU admission, 64.2%, 53.2% and 20.9% had underlying hypertension, diabetes, and obesity, respectively. Out of 534 patients included in the study, 122 patients died, with 64.8% developed ≥ 1 ACE compared to 39.1% patients who survived the infection. Higher proportion of deceased patients developed PE (47.5% vs. 34%; p=0.006), MI (16.4% vs. 4.6%; p=0.001), stroke (12.3% vs. 1.5%; p=0.001) and DVT (2.5% vs. 0.2%; p=0.04) than those who survived. Significant predictors of mortality on multivariate logistic regression model include age [OR 1.05 (95% CI 1.03 – 1.07)], length of ICU stay [OR 1.05 (1.02 – 1.07)], chronic kidney disease [OR 2.30 (1.32 – 4.01), and presence of ≥ 1 ACE [OR 2.32 (1.45 – 3.72)].

Conclusion: The overall mortality of COVID-19 patients admitted to a single centre ICU is high (22.8%), with greater proportion of patients who developed ≥ 1 ACE. Key factors associated with the mortality were age, length of ICU stays, underlying chronic kidney disease and presence of ≥ 1 ACE. This finding might be helpful to the healthcare providers in the early detection and prevention of ACE associated with mortality among COVID-19 patients admitted to the ICU.

https://doi.org/10.1016/j.ijid.2021.12.080

PS04.28 (1075)

Feasibility and accuracy of variant PCR assays for low- and middle-income countries in SARS-CoV-2 surveillance

T.T. Pramanayagam Jayadas *, C. Jeewandara, D. Jayathilaka, D. Ranasinghe, D. Ariyaratne, A. Wijesinghe, D. Gunasinghe, L. Gomez, D. Madushanka, O. Dissanayake, M. Harvie, F. Bary, N. Malavige

University of Sri Jayawardanepura, Department of Immunology and Molecular Medicine, Nugegoda, Sri Lanka

Purpose: Surveillance of different SARS-CoV-2 variants of concern (VOCs) is a crucial aspect in control of the pandemic. Although sequencing is the gold-standard to detect VOCs, it is labor intensive and costly. We compared a cost-effective real-time PCR assay that detects single nucleotide polymorphisms (SNPs) of VOCs, with next generation sequencing (NGS) in surveillance of VOCs.

Methods & Materials: A total of 782 SARS CoV-2 PCR positive samples from May – August 2021 were screened using two variant RT-qPCR assays (Seegene Allplex™ SARS-CoV-2 Variant Assay I and II), which detects 7 SNPs in the spike protein assigning them to one of the VOCs. We compared the results of the variant RT-qPCR with Illumina (n=97) and Oxford Nanopore (n=53) platforms in a subset of samples (n=150). Sequences with > 25x coverage were used and assigned to a Pangolin lineage.

Results: 516 samples amplified for S01Y and HV69/70 deletion of the spike protein were assigned as alpha (B.1.1.7). Two samples with spike K417N mutation along with S01Y and E484K were considered to be beta (B.1.351) and 175 samples which are only positive for spike L452R mutation were considered to be delta (B.1.617). 120/156 samples designated as alpha, 22/175 designated as delta and 2 samples designated as beta by RT-qPCR were sequenced either by Illumina or Oxford nanopore platforms. The sequencing results showed a 100% accuracy with the variant RT-qPCR for identification of VOCs.

Conclusion: RT-qPCR that detected SNPs specific for VOCs, appear to be highly sensitive and specific in detection of VOCs and had a similar specificity of genomic sequencing. Therefore, this could be a rapid and less expensive method for surveillance of VOCs, in lower income countries. However, as it only detects specific SNPs, any emerging mutations of concern in these VOCs or newly emerging variants, will not be detected.