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Editorial

Clinical microbiology: Before and after Covid-19 pandemic

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In late December 2019, increasing number of patients with pneumonia due to an unidentified microorganism were reported in Wuhan, China. Later on based on genomic sequences, this microorganism was identified as novel strain of corona virus termed as SARS-CoV-2 which turned into a COVID-19 pandemic.^{1,2} This COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. Since its origin in 2019, more than 120 millions of populations have been infected which results into more than 27 lakhs of human death worldwide.³ Alone in India, more than 12 million cases has been reported so far. During this era, scope and relevance of microbiology has been appreciated more than ever. The knowledge and the training about the viral structure, transmission, early diagnosis and the best sterilization and disinfection process was the key elements that a clinical microbiologist has shared for the betterment of community throughout the pandemic. The early diagnosis and detection of cases in community was the mainstay in the management of Covid-19 pandemic so that infected person can be isolated and its spread can be prevented. In the initial phase, only few laboratories in India were able to perform RT-PCR testing for Covid-19. As the numbers of cases were increasing, there were a need of establishment of many RT-PCR testing laboratories across the country. Central government- ICMR, had formed various rules

and regulations for establishment, maintenance, quality control and data management of Covid -19 RT-PCR testing laboratory. All the private laboratories across the country has to get NABL accreditation, ICMR approval and clearance from state government before initiation of Covid-19 RT-PCR testing. This was far more challenging in peripheral areas where there are lack of experienced staff including microbiologist and technicians and other resources. Also there were many hurdles in procurement of equipment and consumables for RT-PCR testing as there was shortage in market as most of the laboratories across the India were in phase of setting up RT PCR laboratories. As of now more than 2400 Operational (initiated independent testing) Laboratories reporting to ICMR for covid-19 testing and amongst them, 1400 are based on RT-PCR platform.⁴ Clinical microbiology laboratories were ill-prepared at the beginning and this pandemic had given importance for preparedness and development of microbiology Laboratory at every region specially in peripheral areas for possible rise of any future pandemic/epidemic. Since last decade Microbiology has emerged as important field in health care set up since many accreditation bodies are focusing on infection control, sterilization, biomedical waste guidelines, antibiotic policy at the time of assessment. But many times this scenario was just limited in major cities and corporate hospitals still in the peripheral areas microbiology was neglected portion of health care set up. Not only at the diagnosis level, but Microbiology has showed its importance in hospital set up in terms of infection

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control, biomedical waste management and proper use of personal protective equipments isolation areas of covid-19 healthcare setup. Sterilization and disinfection which was not followed properly previously at certain areas due to lack of awareness, now healthcare professionals and people in community taking it as serious practice. Not only in RT-PCR set up, but microbiologist had played significant role in diagnosis of Mucormycosis along with clinicians and radiologists, which was major concern in survivors of covid-19 who received steroids and had co morbidities like diabetes. In the present scenario, around the world, there is also need for search of a vaccine or antivirals that could combat the deadly disease like COVID-19. This ongoing pandemic was just like preantibiotic era where lack of suitable drug/vaccine had killed significant number of people around the world. It is really difficult to escape from microorganisms as they are present everywhere. Not only discussing about covid-19 outbreak but it also as important to for strict development and maintenance of policy about proper use of antibiotics otherwise routine pathogens can also lead to rise of more epidemics in hospital as well as in community in nearby future as most of the antibiotics becomes ineffective in bacterial infection treatment and less number of new antibiotics are being discovered. This certainly will make the future treatment in hospital more

costly as well as more difficult. Creating sustainable and significant progress towards improved quality and inclusion in the microbial science is real need in healthcare setup at every level.

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