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Correspondence

**Monkeypox in South-East Asia: Is an alarming bell for this region? – Correspondence**

Dear Editor,

Monkeypox (MPX) has now been declared a global public health emergency owing to its constantly rising cases [1]. Currently, the monkeypox virus (MPXV) has rapidly spread to 99 countries and as of August 31, 2022, about 49,974 confirmed cases and 15 deaths have been reported by CDC, USA [2,3]. The MPX occurrence is noted as the largest outbreak of this disease outside of non-African countries. Before this outbreak in 2022, the MPX cases were reported mostly from African countries, especially Central and West African countries, where the disease was reported as an epidemic and these regions were considered as endemic regions [1,4]. Very few cases were reported from non-African countries from 1970 to 2021, and these cases were associated with either imported animals or international travel [4,5]. However, Nigeria was the second most MPX affected country, and 181 cases were noted in 2017 [6]. The previous MPX outbreak was reported in two Clades: Congo Basin (Central African) Clade and the West African Clade. Researchers noted that Congo Basin strains are more virulent than the West African strains. In this present outbreak, a changed epidemiological pattern has been reported, which is of significant concern. However, WHO has recently proposed a new naming system, based on the nomenclature of the MPXV, and presented three clades, Clade I, Clade IIa, and Clade IIb, on August 12, 2022.

The first MPX case in South-East Asia was reported in India on July 12, 2022. It was also India's first positive case of MPXV infection. A 35-year old man came back from the Middle East to India, and was identified as MPXV positive. The WHO reported this case on July 15, 2022 [6]. The person returned to India through the Trivandrum airport from UAE.

As of August 31, 2022, 18 MPX cases were reported from different parts of South-East Asia (Fig. 1a). Among these, ten cases were reported from India, seven from Thailand, and one from Indonesia. At the same time, one death was reported in India (Fig. 1b) [2]. The ten cases in India were reported from Kerala state, Bangalore, and New Delhi. Among Kerala's positive cases, the first person is a native of the Kollam district reported on July 14, 2022 [7]. The second case was reported in the Kannur district on July 18, 2022, and the third was reported from Malappuram city who developed symptoms from July 15, 2022. Among the seven positive MPX cases from Thailand, the first one, a Nigerian man, was tested positive at Phuket hospital on July 19, 2022, while the second case in a Thai individual was reported from Bangkok. The third and fourth cases were reported from Phuket and Samut Prakan, respectively.

A recent editorial in the Lancet described the current spread of MPX in both epidemic and non-epidemic countries as "a global wake-up call" [8]. The wake-up call is also needed to serve as an alarming bell for South-East Asia. Therefore, all South-East Asian countries should critically monitor MPX cases by enhancing their surveillance systems.

However, it is a very early period of the MPX case in South-East Asian countries. Among these countries, some countries, such as India, have experienced the waves of COVID-19 pandemic immensely. SARS-CoV-2 Omicron and its sub-lineages still spread infection from time to time in South-East Asian countries. Most South-East Asian countries do not have good economic conditions, few are highly and densely populated, and some are developing and under-developed low- and middle-income countries. If MPXV rapidly spreads in these countries, it would create a heavy global burden on other countries. All countries should increase surveillance for efficient detection of new cases of MPX, and follow contact tracing of MPXV infected persons for checking further spread of the virus. At the same time, it is also essential to strengthen clinical management and healthcare systems for treating MPX patients. Similarly, pro-active implementation of MPXV infection prevention and control measures is necessary from clinics to hospitals. The previous COVID-19 experiences and lessons might help these countries to fight against MPX.

The recent outbreak has noted the spread of MPX cases among MSM individuals (men who have sex with men) [9]. Therefore, MSM, gay, and bisexual men communities are at risk and should be monitored in South-East Asian countries. They should be educated and trained about prevention and control strategies of the virus. Appropriate diagnostic test facilities should be strengthened in these countries for quick case identification and restrain the virus's spread. It is also essential to formulate and adopt appropriate MPX vaccination strategies, including ring vaccination for all the countries to prevent and control the disease. Recently, the WHO has encouraged all countries to effectively develop NITAGs (National Immunization Technical Advisory Groups) to frame policy recommendations and work actively to develop vaccination strategies. Tecovirimat, an antiviral drug, was found potentially to be beneficial in treating smallpox virus infection. All drug regulatory authorities of Europe have licensed this drug for treatment of MPX. Therefore, all drug regulatory authorities of South-East Asian countries should also take initiatives in this direction. However, as MPX was considered a neglected disease from its first identification in 1970 to early 2022, this neglected disease got global attention only when it recently spread to high-income countries. The disease is now in entire global focus, as this neglected disease has spread to white populations, especially in Europe, the USA, and other developed/high-income countries. For over 50 years, MPX has been endemic, and at least ten countries in West and Central Africa faced MPX outbreaks with little global support. However, due to the sudden globalization of MPX, Abbara et al. have suggested that resource sharing of high-income countries is critically needed for strengthening diagnostics, vaccines, and treatment aspects to low- and middle-income countries [10]. As many South-East Asian countries are considered as middle to low-income countries, these countries should get global attention and

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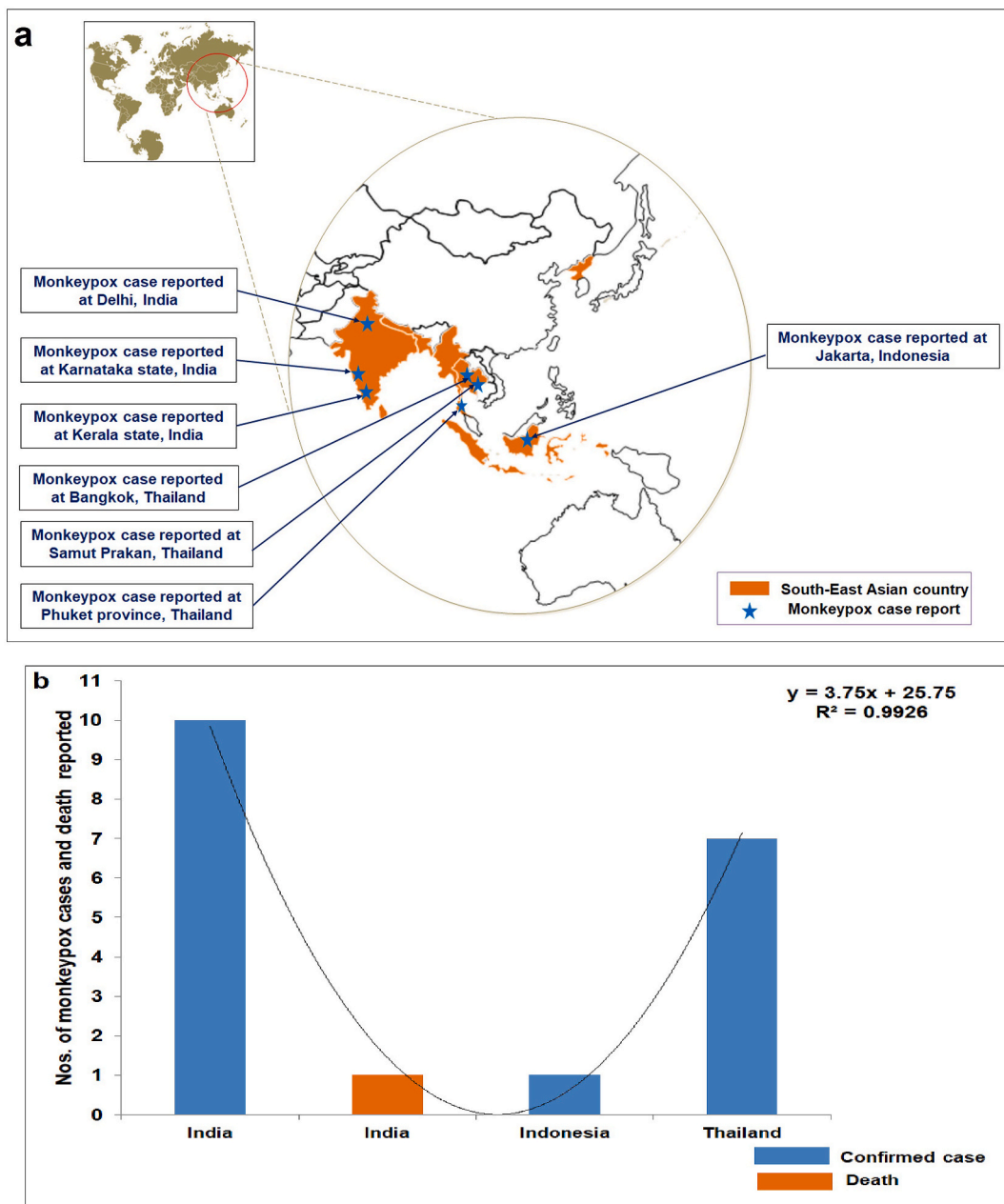


Fig. 1. The map and bar graph represent infection and death cases in South-East Asian countries until August 31, 2022. (a) The global map depicts the 18 monkeypox virus-positive cases in South-East Asian countries till August 31, 2022, and the identified cases' locations. The map illustrates the sites of 18 identified cases from India, Indonesia, and Thailand. (b) Bar graph represents the country-wise infected and death cases in South-East Asian countries until August 31, 2022.

necessary aids to get supply of vaccines and therapeutics equally along with high-income countries. We have noticed the strong collaborative efforts and high teamwork spirits among different health groups and organizations during the COVID-19 period, from vaccine development to ramping up of vaccination programs at global levels [11]. We hope that our numerous previous lessons from the COVID-19 pandemic, high teamwork and collaborative efforts among researchers, medical practitioners, health workers, political people and policy makers will help to limit and stop the spread of MPXV in the South-East Asian region very efficiently. At the same time, travelers' routes can be significant means of spread of any virus or infectious disease, such as MPXV, to other countries. Therefore, regular monitoring of the virus is necessary at international airports. It is urgently required to timely diagnose appearance of MPX cases, adopt immediate contact tracing and ring vaccination approaches, which can assist in containing the spread of the

virus. At the same time, we need to promote awareness campaigns about the MPXV and the disease it causes, to provide more correct information on its epidemiology, vaccination, therapy as well as preventive and personal safety measures to the ordinary people. Considering the continuous and rapid rise in cases of MPX in several countries, the policymakers of South-East Asian countries should adopt and implement all appropriate health protective policies and urgently implement needful recommendations suggested for effective prevention and control of MPX, so as to limit further spread of the MPXV to help in avoiding any possibility of a second pandemic to be faced as another global public health emergency amid the ongoing COVID-19 pandemic.

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