

Coincidence of fever following COVID-19 vaccine and endemic tropical diseases: a challenge to clinicians during the global rollout of COVID-19 vaccination

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Teaser

Coincidence of fever following COVID-19 vaccine and endemic tropical diseases may occur during the global rollout of COVID-19 vaccination. Clinicians should be aware of this scenario when dealing with fever post-vaccination to prevent delayed diagnosis.

Letter to the Editor

Dear Editor,

Many countries in tropical regions, including Thailand, have started rolling out various types of COVID-19 vaccines to control the disease. Although fever is one of the most common side effects after COVID-19 vaccination¹, the coincidence of fever following the vaccine with endemic tropical diseases may occur, resulting in delayed diagnosis. We describe such a case to raise awareness among clinicians during the global rollout of vaccinations against COVID-19.

A 49-year-old Thai female presented to the Hospital for Tropical Diseases in Bangkok with a history of low-grade fever for 4 days. She noticed that the fever developed 6 hours after COVID-19 vaccination with inactivated SAR-CoV-2 vaccine (CoronaVac[®], Sinovac Life Science, Beijing, China) with non-specific symptoms, including chills, headache, malaise, myalgia and polyarthralgia at the fingers and arms. She took a pain killer, thinking it was a side effect of the vaccine. The following day, she still had fever and fatigue. She attended a primary-care hospital where she was reassured, because fever is a side effect of the vaccine. Four days after vaccination, her fever subsided after taking paracetamol around the clock, but she still had headache and fatigue. She attended our Hospital for Tropical Diseases for consultation.

On examination, the patient appeared unwell. Her temperature was 36.4°C, blood pressure 110/73 mmHg, pulse 98 beats per minute, and respiratory rate 23 breaths per minute. The positive findings included multiple joint tenderness with no sign of arthritis, no skin rash and otherwise normal. Her initial Complete Blood Count (CBC) revealed mild leukopenia (WBC=4200/ μ l) with neutrophil predominate (neutrophil=69.6%, lymphocyte=21.5%), hemoglobin 12 g/dl, hematocrit of 37%, and platelet count of 238,000 / μ l. Blood sample for dengue NS1Ag was positive (day 4 post-vaccination). She was virologically confirmed with dengue virus serotype 2 infection by serotype-specific reverse-transcriptase polymerase chain reaction (RT-PCR). She was monitored closely and her clinical symptoms were observed by a physician. Fortunately, she did not develop any

serious complications and recovered 9 days after the first episode of fever (9 days post-vaccination). Laboratory follow-up is shown in Table 1.

Fever normally occurs within 48 hours after COVID-19 vaccination, with recovery normally within 48 hours.² In tropical and subtropical countries, fever post COVID-19 vaccination and the presentation of a common tropical infection may coincide. Therefore, during the COVID-19 vaccine rollout, clinicians should keep in mind that fever with non-specific symptoms after COVID-19 vaccination may be a common tropical infection especially if recovery from fever does not occur within 48 hours post-vaccination. We would also suggest that countries in which dengue is hyperendemic should avoid using nonsteroidal anti-inflammatory agents (NSAIDs) to manage fever after COVID-19 vaccination, to prevent serious complications, since the drug may aggravate gastritis or bleeding in dengue infection.³ It is important to highlight that travel history, particularly a history of returning from tropical countries before COVID-19 vaccination should be investigated to ensure that it is not coincident with a presentation of a life-threatening tropical infection, such as malaria, to prevent delayed diagnosis.

Conflict of interest

None to declare

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Table 1 Laboratory followed up in the patient

Day of fever	Day 4	Day 5	Day 7	Day 9
WBC counts (cells/μL)	4,200	3,970	11,240	
Neutrophil (%)	69.6	61.7	30.3	
Lymphocyte (%)	21.5	29.2	62.5	
Monocyte (%)	3.3	5.3	3.8	
Eosinophil (%)	5.0	3.5	2.6	
Hemoglobin (g/dL)	12	11.4	11.1	
Hematocrit (%)	37	33.2	32.6	
Platelets (cells/μL)	238,000	166,000	185,000	
ALT (U/L)			283	221
Dengue NS1 Ag	Positive			
RT-PCR	Positive			