



Aftershocks of scrub typhus in Nepal

Author's reply

I agree with Hemant Ojha and Sampanna Jung Rayamajhi that, although the suggestion to use doxycycline for treatment of a presumptive diagnosis of scrub typhus is justified,¹ we clearly have to be on the lookout for doxycycline-resistant scrub typhus. Indeed, the Comment was written in an attempt to serve as a wake-up call for more research on both typhus and typhoid, especially regarding reliable, rapid diagnostic tests to distinguish between these kinds of undifferentiated febrile illnesses in the tropics. Undifferentiated febrile illnesses are defined as fever without a clear-cut focus of infection.

The necessity of rapid diagnostics is brought home by the fact that the first two references^{2,3} cited in support of Ojha and Rayamajhi's argument deal with not only proven but also suspected cases of scrub typhus. Because of the substantial overlap in symptoms between typhus, typhoid, and other undifferentiated febrile illnesses, such as malaria, dengue fever, and leptospirosis, it is important to make the right diagnosis so that treatment can be specific.

Furthermore, Ojha and Rayamajhi seem to suggest rifampicin as a potential option in the treatment of scrub typhus. However, in many low-income and middle-income countries where scrub typhus is common, tuberculosis is also widespread. Therefore, it might be more prudent to reserve rifampicin for the treatment of tuberculosis.

Ojha and Rayamajhi also mention that a single dose of azithromycin might be good enough for scrub typhus. However, it has to be emphasised that even if we find the various serotypes of scrub typhus in Nepal, in the present context, without reliable, rapid diagnostics it might be hazardous to use a single dose of azithromycin for

undifferentiated febrile illnesses if diseases such as leptospirosis, which are common in Nepal,⁴ are lurking in the background because they might require more sustained treatment.

Finally, I completely agree that more research needs to be done regarding scrub typhus, especially since this disease was brought sharply into focus in post-earthquake Nepal, which, as Ojha and Rayamajhi note, falls in the tsutsugamushi triangle. However, this claim regarding location is not substantiated by the WHO scrub typhus map.⁵

I declare no competing interests.

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- 2 Watt G, Chouriyagune C, Ruangwearayud R, et al. Scrub typhus infections poorly responsive to antibiotics in northern Thailand. *Lancet* 1996; **348**: 86–89.
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