

## Letter to the Editor

# Fever of unknown origin: Indian perspective

Sir,

Fever remains a notorious problem for both patients as well as the doctors. In most of the cases the cause is specific but sometimes it becomes a great problem for the sufferer and the care giver. Fever of unknown origin (FUO) is defined as 1. Fever  $>38.3^{\circ}\text{C}$  ( $101^{\circ}\text{F}$ ) on at least two occasions, 2. Illness duration of  $>$  or  $=3$  weeks, 3. No known immunocompromised state, 4. Diagnosis that remains uncertain after a thorough history-taking, physical examination, and some obligatory investigations.<sup>1</sup>

In general, infection accounts for about 20-25% of cases of FUO in Western countries; next in frequency are neoplasms and non-infectious inflammatory diseases. In geographic areas outside the West, infections are a much more common cause of FUO (43% vs 22%). Up to 50% of cases caused by infections in patients with FUO outside Western nations are due to tuberculosis.<sup>1</sup>

In India infectious disease notably tuberculosis is the most important cause of FUO as showed by previous studies. A study consisting of 100 patients in Kolkata showed 53% of FUO cases were due to tuberculosis. Another study (2008-2009) in Kolkata showed 55% of the diagnoses were of infectious diseases (majority tuberculosis).<sup>2</sup> But it should be kept in mind that apart from tuberculosis there may be other infectious causes which can play significant role in FUO. In 1993, 233 patients were studied in Wardha in central India where the major cause of unexplained fever (46.4%) was enteric fever.<sup>2</sup> An observational, prospective study was conducted in Vellore, Tamil Nadu in 2007. Among 100 patients tuberculosis (19%), lower respiratory infection (11%) caused by bacteria were found to be main causes. 5% cases were due to malaria, all caused by *P. falciparum*. Malaria though often underreported is obviously an important cause for FUO in India.<sup>[3]</sup> Interestingly a quiet good number of patients with scrub typhus have also been detected in several studies from Tamil Nadu (2007), Rajasthan (2012), Andhra Pradesh. In spite of being a neglected disease in India there are reports from various states of this disease.<sup>4</sup> A retrospective study from Mumbai among 160 patients who died from acute febrile illness showed malaria in 23% and Leptospirosis in 22% of patients.<sup>3</sup> A study (2010-2012) in Kashmir revealed most common group of FUO was that of infectious diseases. Among these

brucellosis and salmonellosis comprises the majority (25% each).<sup>5</sup>

In rural India majority of people live in a close association with cattle. Therefore they remain in close contact with domestic animals. They carry a risk for zoonotic diseases though diagnosed less often. It may be due to failure of seeking medical advice or unavailability of proper investigation. So it is very important to consider other diseases like brucellosis, scrub typhus, leptospirosis during evaluation of FUO patients. More feasible investigations up to the primary health care level in rural India may be helpful to diagnose such case along with commoner cases of tuberculosis or malaria. More studies which will be more coordinated, will give proper epidemiology in India.

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