# Melioidosis Requires Better Data Sharing for Improved Diagnosis and Management in the Mekong Region

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# Letter to the Editor

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Dear Sir:

We commend Suntornsut and others for reminding us that pulmonary melioidosis should be considered in every patient with a tuberculosis (TB)–like chest radiographic result and negative acid-fast bacilli (AFB) smears in melioidosis-endemic countries, such as Thailand.[1] This finding confirms the conclusion we drew from our analysis of a series of pulmonary melioidosis cases in neighboring Cambodia.[2] Among 2,840 acute lower respiratory infections in all-age patients, we found 39 (1.4%) infected with *Burkholderia pseudomallei*. Six of these patients had a TB-like chest radiographic result. All but one were AFB smear negative.

Chronic pulmonary melioidosis and tuberculosis share common clinical features, such as a latency stage for years after initial contact with the bacilli. Two experimental murine models of chronic pulmonary melioidosis showed that the main histopathologic feature was granuloma.[3,4] In some cases, the pulmonary lesions were highly suggestive of tuberculosis with large granuloma characterized by a caseous necrotic center.[3] This finding might be caused by similar virulence factors.[5]

Furthermore, in another study in Cambodia, we reported that melioidosis can be associated with pulmonary sequelae mimicking TB sequelae.[6] Dysregulation of granuloma formation and of extracellular matrix turnover could lead to similar sequelae in *B. pseudomallei* and *Mycobacterium tuberculosis* infections.[7] Radiologic and clinical outcomes therefore seem to be closely linked with granuloma formation in TB and melioidosis.

We also agree that the burden of pulmonary melioidosis is a heavy one, with a high case-fatality rate (CFR) in low-income countries of the region. In Cambodia, the CFR was 61.5% in our 39-case cohort within two months post-discharge and 52% in another recent series of 58 cases in Cambodia.[8] At the time of the study, we linked the high CFR in Cambodia not so much to the severity of the cases, but rather to under-recognition of the disease by clinicians and to the unavailability of appropriate treatment. Since that time, treatment has become available.

Pulmonary melioidosis misdiagnosis leads to unnecessary TB treatment. Efforts should be placed on earlier diagnosis of melioidosis and TB. Suntornsut and others proposed that all residual sputum collected from smear-negative patients be cultured to search for *B. pseudomallei* in countries to which melioidosis is endemic.[1] The use of Ashdown's selective agar, which is specific for *B. pseudomallei* culture, could be easily spread in resource-limited settings. The quality of sputum samples, however, could lead to missing cases. In children, sputum samples are difficult to obtain. In 2011, we suggested the use of throat swab specimens for detecting *B. pseudomallei*. We believe that this method with 100% specificity (but low sensitivity, 36%)[9] could be more useful in children and more easily disseminated in low-income tropical countries in Asia.

Tuberculosis diagnosis could also be improved in Cambodia. For 93 consecutive adult patients with at least three AFB smears, 11% discrepancy in AFB smear positivity for TB culture-confirmed samples were observed between two laboratories (Institut Pasteur, unpublished data). New molecular tools, such as GenExpert, could avoid useless TB treatments.[10]

Larger and smaller case series are documented in tropical countries, especially in the Mekong Basin. A network dynamic and careful aggregation of standardized melioidosis data across the region would help better document the epidemiology and fill knowledge gaps in melioidosis.

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