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EDITORIAL

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Mycobacteria journal launch

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It is with great excitement that we announce a new scientific journal from Springer Nature, as part of the BMC family, Mycobacteria.

We see this as an essential new journal based on the diversity of *Mycobacterium tuberculosis* Complex (MTBC) diseases that remain prevalent as public health concerns as well as the emergence of non-tuberculosis mycobacterial (NTM) diseases over the past two decades. Tuberculosis (TB) remains as one of the ten most deadly diseases in the world, despite robust international campaigns to improve treatment outcomes and reduce disease transmission. In addition, human mycobacterial pathogens such as *Mycobacterium chimera*, *M. abscessus*, *M. ulcerans*, and *M. lepromatosis*, have emerged as new mycobacterial pathogens of global public health concern. Of these, *M. lepromatosis* has emerged as a relative of the ancient and persistent organism *M. leprae*, and causes a disease similar to leprosy. *M. chimera* has emerged from other slow-growing mycobacteria in the *M. avium* complex, and *M. abscessus* has emerged as a rapidly growing mycobacteria that presents significant drug treatment challenges and reduced life expectancy. Finally, *M. ulcerans* has emerged as a necrotic skin disease in the past several decades and remains a topic of essential research due to its propensity to have significant morbidity associated with poor treatment and delayed diagnosis.

Beyond mycobacterial diseases primarily impacting human health, zoonotic and non-human vertebrate mycobacterial diseases also remain or have emerged as global health concerns. This includes increased expansion of animal species and increased incidence of diseases caused by *M. bovis*, a unique lineage of the MTBC and known to cause disease in humans and domestic cattle. *M. bovis* is now shown with the capacity to manifest disease in elephants, buffaloes, deer, badgers, and other animals.

The prevalence and expansion of *M. bovis* as a one health concern is also met with emerging mycobacterial diseases originating with a specific niche in other animals, such as *M. orygis*. *M. orygis* arises from the same phylogenetic origin of *M. bovis*. While originally described as a disease of oryx, a member of the Bovidae family, it is now shown to also cause disease in cervids and humans. In contrast, several novel mycobacterial diseases appear to have arisen from *M. africanum*, a distinct lineage of the MTBC, including *M. suricattae*, *M. mungi*, and Dassie bacillus, causing diseases in meerkats, mongooses, and the rock hyrax, respectively.

The resilience of mycobacterial diseases over the centuries, combined with the emergence of these new challenging mycobacterial diseases, requires dedicated attention to all the diseases manifested by mycobacteria. Of course, with these challenges, there have been some successes, including improved and updated recommendations for drug treatment for drug susceptible TB. This includes a recommendation for reducing the six-month drug regimen to a four-month drug regimen, in some cases. Interestingly, the four-month drug recommendation additionally includes a substitution drug in some cases for adults with a different substitution option in infants, recognizing the unique challenges and differences in disease attributes and metabolism among this vulnerable population. Similarly, the scourge of drug-resistant tuberculosis has been met with new recommendations as well, including a new six-month treatment program, which does not include 9 to 18 months of treatment with the former first line drugs isoniazid and

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rifapentine, but instead includes a six-month regimen of bedaquiline, pretomanid, linezolid, and in some cases, moxifloxacin. Treatment of emerging NTMs diseases, especially those caused by *M. abscesses*, on the other hand, pose great challenges, not only due to their inherent drug resistance, but also due to significantly delayed diagnosis, often lagging over a year from initial symptoms to final diagnosis. Indeed, diagnosis of NTMs and TB continues to pose a challenge, including economic and infrastructure challenges for the use of some rapid diagnostic systems, which limits the capacity of global use. Current assays to diagnose persons with an infection unlikely to progress to active disease versus those with an infection progressing to active disease, and assays capturing the fluctuating spectrum of TB and NTM infection are also needed to effectively reduce disease burden.

With this awareness in hand, the journal Mycobacteria is supported by an editorial board comprising experts from around the world with a breadth of perspectives, knowledge and experience. We strove to have such a board so that all contributions encompassing a wide array of topics in mycobacteria will be well received, reviewed and published. We are further dedicated to uphold high standards of scientific rigor, integrity and the peer review process.

We are inspired that Mycobacteria will serve as a forum for the discussion, publication and dissemination of information ranging from clinical case histories, epidemiology, basic research, and technologies aimed at the eradication of mycobacterial diseases. We invite you to join in this endeavor as we work together to improve the dissemination of information about mycobacteria and encourage additional collaboration and research capacity in these efforts.

Warm regards,

Karen

Authors' contributions

KMD wrote and edited this document.

Declarations

Competing interests

The authors declare that they have no competing interests.

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