Towards personalized medicine in mycobacterial diseases; from bench to bedside

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Objective: Mycobacterial disease is still an important cause of morbidity and mortality in the world. Personalized medicine is a rapidly advancing field of medicine. It uses all available omics in order to make accurate decisions about prevention, diagnosis, and treatment of disease. Personalized medicine may be helpful to design more efficient strategies for prevention of mycobacterial diseases and for offering better treatment options.

Methods: A literature search was conducted using search keywords “personalized medicine”, “individualized”, “nontuberculous mycobacteria”, “mycobacterium tuberculosis”, “tuberculosis”, “genetic susceptibility”, “genomics”, “side effects”, “treatment”, “prevention” and “diagnosis” from studies that have been published by July 2014. PubMed, Cinhil, Scopus, Embase and the Cochrane Library were searched.

Results: The advances in personalized medicine for diagnosis, treatment and prognosis of mycobacterial diseases were addressed. A need assessment for individuating the mycobacterial diseases was performed. Finally, the proposed approach to personalized medicine in mycobacterial diseases was discussed.

Conclusions: Moving toward personalized medicine in mycobacterial diseases has already started, but needs further works to make it applicable for patient care. It will help us to improve diagnostic and treatment strategies and possibly to deliver a better quality of healthcare to patients.

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