Clinical practice alert on the use of immune checkpoint inhibitors in patients latently infected with tuberculosis

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Abstract

Multiple case reports have been published on the risk of tuberculosis activation in patients on immune checkpoint inhibitors (ICPIs). To this matter, I caution clinicians to test for latent tuberculosis before starting their patients on ICPIs.

Introduction

It has been a year since the announcement of the Nobel prize in medicine and physiology for the discovery of immune checkpoint inhibitors (ICPIs) (1). ICPIs have indeed revolutionized cancer therapy as was suggested in the original award citation. But an important yet often overlooked phenomena when using ICPIs is the risk of infection reactivation due to immunosuppression. Activation of asymptomatic and undiagnosed latent tuberculosis (TB) is a significant concern as demonstrated by multiple case studies (2-8). One possible mechanism for reactivation of TB in patients on anti-PD-1 therapy (9) is pictorially depicted in figure 1.

Figure 1: Pictorial depiction of one possible mechanism for TB activation by anti-PD-1 immunotherapy. Image created with objects sourced from Servier Medical Art (<http://smart.servier.com/>), licensed under a Creative Common Attribution 3.0 Generic License.

Clinical caution

In light of all these studies, it is imperative that physicians test for latent TB before starting patients on ICPIs. This caution is especially targeted to physicians practicing in countries where TB is endemic. The established way to test for asymptomatic latent TB is by Interferon- γ release assays such as the QuantiFERON-TB Gold test (10). Newer methods such as host gene expression profiles are also being studied as possible ways to diagnose latent TB (11,12).

It must be stated here that even if a diagnosis of latent TB is established, the potential risk to benefit ratio should be taken into consideration on a case-by-case basis. Longer follow ups of patients and studies in pre-clinical models are likely to throw further light on the possible risk of infections in patients on ICPIs.

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