

# Patients with Freshly Discovered Pulmonary Tuberculosis may Experience Haematological Symptoms

Rebeca Stones\*

Editorial Office, Medical Reports and Case Studies, France

## Corresponding Author\*

Rebeca Stones

Editorial Office, Medical Reports and Case Studies, France

E-mail: rebhealth@peerjournal.org

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## Introduction

Pulmonary tuberculosis (TB) is a serious infectious disease that primarily affects the lungs. It is caused by the bacterium *Mycobacterium tuberculosis*, which spreads through the air when an infected person coughs, sneezes or speaks. While the most common symptoms of pulmonary TB are cough, fever, and weight loss, recent research suggests that patients with newly discovered pulmonary TB may also experience haematological symptoms. Haematological symptoms are those that are related to the blood and its components. They include anaemia, leukopenia, thrombocytopenia, and other blood disorders. While these symptoms have traditionally been associated with other infections, such as malaria and dengue fever, recent studies have linked them to TB as well [1]. A study published in the *Journal of Clinical Medicine* in 2021 found that patients with newly discovered pulmonary TB had a significantly higher incidence of haematological abnormalities compared to healthy individuals. The study involved 223 patients with pulmonary TB and 221 healthy controls. The results showed that patients with pulmonary TB had a significantly higher incidence of anaemia, leukopenia, and thrombocytopenia compared to healthy individuals. Anaemia is a condition in which the body lacks sufficient red blood cells to transport oxygen to the tissues. It is a common haematological symptom of TB, and can be caused by a variety of factors, including chronic inflammation and malnutrition. The study found that patients with pulmonary TB had a higher incidence of anaemia compared to healthy controls, with 53.8% of TB patients experiencing anaemia compared to 21.3% of healthy controls [2,3]. Leukopenia is a condition in which the body lacks sufficient white blood cells to fight infection. The study found that patients with pulmonary TB had a higher incidence of leukopenia compared to healthy controls, with 24.2% of TB patients experiencing leukopenia compared to 4.5% of healthy controls. Thrombocytopenia is a condition in which the body lacks sufficient platelets, which are necessary for blood clotting. The study found that patients with pulmonary TB had a higher incidence of thrombocytopenia compared to healthy controls, with 14.3% of TB patients experiencing thrombocytopenia compared to 3.2% of healthy controls.

While the exact mechanisms behind these haematological abnormalities in patients with pulmonary TB are not yet fully understood, it is believed that they are related to the body's immune response to the infection. TB is known to trigger a systemic inflammatory response, which can result in the destruction of red and white blood cells, as well as platelets. The presence of haematological abnormalities in patients with pulmonary TB may have important clinical implications. For example, anaemia can lead to fatigue, weakness, and shortness of breath, which can exacerbate the respiratory symptoms of TB. Leukopenia can increase the risk of secondary infections, while thrombocytopenia can increase the risk of bleeding complications [4,5].

In addition to their clinical implications, haematological abnormalities in patients with pulmonary TB may also have diagnostic and prognostic implications. For example, the presence of anaemia and leukopenia in a patient with respiratory symptoms may raise suspicion for TB, especially in areas with a high prevalence of the disease. Conversely, the absence of haematological abnormalities may suggest a lower likelihood of TB. In conclusion, patients with newly discovered pulmonary TB may experience haematological symptoms, including anaemia, leukopenia, and thrombocytopenia. These symptoms are believed to be related to the body's immune response to the infection, and may have important clinical, diagnostic, and prognostic implications. Clinicians should be aware of these haematological abnormalities in patients with pulmonary TB.

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