

Impact of green tea consumption on the risk of Tuberculosis developmentKiran Shafiq Khan,¹ Afshan Hussain,² Hafsa Jawaid,³ Fauzia Imtiaz⁴

Madam, green tea is a frequently consumed beverage,¹ and is beneficial as it can prevent, and in some cases, improve certain health ailments, including obesity, cardiovascular diseases, neurodegenerative diseases, autoimmune diseases and malignancies.² More importantly, recent researches have suggested a possible relation of green tea consumption with lower risk of developing tuberculosis (TB), caused by *Mycobacterium tuberculosis*.^{1,2}

China is the second highest TB afflicted country in the world with a prevalence of 459/100,000 among individuals aged 15 years and above.² A prospective study in Singapore conducted on Chinese participants in 2017 suggested an inverse relation of green tea consumption with developing the risk of TB in a dose dependent manner.¹ A total of 63,257 participants aged 45-74 years, without prior exposure to TB were recruited and interviewed about daily tea consumption. Out of these, 1249 cases of active TB were identified via a mean follow up of 16.8 years and assessments were made through Cox proportional hazard models. Green tea was found to have a significant relation with the risk of developing TB while caffeine and coffee intake had none.¹

Additionally, a study conducted in Hunan province, China, in 2015 took into account 574 patients with previously diagnosed pulmonary tuberculosis and 582 healthy controls. Both were asked to self-report monthly tea consumption and exposure. Exposure was defined as drinking one cup of tea per week over a period of at least six months. Unconditioned logistic regression analysis was conducted which suggested an inverse association between tea drinking and risk of TB.²

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Furthermore, the proposed mechanism responsible for the inverse relation suggested the involvement of Epigallocatechin gallate (EGCG), the most abundant catechin found in green tea. EGCG has been shown experimentally to inhibit the action of enoyl-acyl reductase (InhA), consequently inhibiting the synthesis of functional mycolic acids, and leading to impaired synthesis of essential mycobacterial cell wall components.¹

According to the World Health Organization (W.H.O.), Pakistan ranks at 5th position in the list of 22 highest burdened TB countries of the world with an estimated 510,000 new TB cases emerging annually.³ Moreover, TB is the 9th leading cause of death in Pakistan justifying the government's commitment towards disease eradication and treatment accessibility throughout the nation by 2020.⁴ Hence, healthcare providers should contribute to this ambitious goal by spreading awareness about inclusion of green tea in the diet of individuals which along with its well-known antioxidant properties may also prevent the development of TB in a cost effective manner.

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