

Pulmonary Tuberculosis among Cancer Patients Treated with Immunosuppressants: A Systematic High-risk Group Screening Analysis in Multicentric Hospitals

Dinesh Kumar¹, Shrinivasa B. Marinaik², Devi Madhavi Bhimarasetty³, K. Krishnamoorthy⁴, Chandrasekaran Padmapriyadarshini⁵, Sunil Raina¹, Manjula Singh⁶, Abdul Mabood Khan⁷, Rahmat Bano⁶

¹Professor, Department of Community Medicine, Dr. Rajendra Prasad Government Medical College, Kangra, Himachal Pradesh, ²Scientist-D, ICMR-National Institute of Malaria Research Field Unit, Bengaluru, Karnataka, ³Principal, Government Medical College, Vizianagaram, Andhra Pradesh, ⁴Professor, Department of Respiratory Medicine, Government Medical College, Tirunelveli, Tamil Nadu, ⁵Scientist-F, ICMR-National Institute for Research in Tuberculosis, Chennai, Tamil Nadu, ⁶Senior Consultant, Indian Council of Medical Research, ⁷Head, Division of Epidemiology and Communicable Diseases, Indian Council of Medical Research, New Delhi, India

Abstract

Background: People with cancer are vulnerable and considered a high-risk group for developing pulmonary tuberculosis (PTB) as they are often treated with immunosuppressants. **Objectives:** The primary objective of the study was to screen for PTB occurrence among cancer patients. The secondary objective was to assess the risk of PTB among patients receiving immunosuppressants (I-R) compared to those not receiving immunosuppressants (I-NR). **Materials and Methods:** A sentinel surveillance was carried out among cancer patients receiving care from the oncology department of four medical colleges from January 2020 to April 2021. Descriptive analysis was done for the primary objective, whereas propensity score matching (PSM) was done to assess the secondary objective. Risk ratio (RR) was reported using logistic regression analysis. **Results:** A total of 1194 participants were assessed, and PTB was found to be 0.6% and 0.2% based on cartridge-based nucleic acid amplification test (CBNAAT) and sputum smear microscopy, respectively. PSM analysis showed a nonsignificant association between immunosuppressant use and PTB (RR: 1.3; 95% confidence interval [CI]: 0.3–6.0). PSM showed a significant association between PTB and subjective weight loss (RR: 5.3; 95% CI: 2.1–13.2), sense of fatigue (RR: 3.5; 95% CI: 1.9–6.6), and chest radiological assessment (RR: 2.8; 95% CI: 1.8–4.3). **Conclusion:** Sentinel surveillance detected PTB among cancer patients with high CBNAAT-based yield. Significantly, patients on immunosuppressants reported weight loss and fatigue that required chest radiography to screen PTB as a presumptive case.

Key words: Cancer, immunosuppressants, pulmonary tuberculosis, sentinel surveillance, tertiary care hospital