

**14. PREVALENCE OF DIABETES MELLITUS AND ITS ASSOCIATED FACTORS AMONG TUBERCULOSIS CASES IN TALUK TUBERCULOSIS UNIT, INDIA - A HOSPITAL-BASED : EXPLORATORY CROSS-SECTIONAL STUDY**

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 <https://www.youtube.com/live/fSpXH-3Xy5w?t=2593s>

**BACKGROUND:** As per WHO global reports, one in each third person of the current world population is infected with tuberculosis, asymptotically. NTEP data states that 25,52,000 Tuberculosis cases were reported in 2023. Out of total, 81,331 cases were notified from the state of Karnataka. Whereas 9.3% of the Indian population are known cases of diabetes mellitus. Both the diseases behave as a duplex, interacting with each other. Diabetes mellitus weakens cell mediated immunity by dysfunctioning T-cells as well as macrophages. On the other hand, tuberculosis-like chronic morbidities are associated with reactionary hyperglycemia due to accelerated counter-regulatory stress hormones productions. Amalgamation of epidemics of a communicable and non-communicable disease is turning out to be a matter of concern for all. Hence, such exploratory study becomes crucial to determine the severity. **METHODS:** This exploratory cross-sectional study includes Tuberculosis diagnosed cases visiting hospital amalgamated to medical college in North Karnataka, India belonging to Taluk TB Unit. Sample size for proportion was calculated to be 116, to cover desired objectives at 5% absolute precision at 95% confidence level. Written Informed consent was obtained from the study cases. All those cases who were seriously ill or were pregnant or denying the consent were excluded. Predesigned and pretested proforma were used for obtaining socio-demographic details of subjects. Modified BG Prasad classification was implicated to classify socioeconomic-status. Patients were confirmed diagnosed with tuberculosis by the latest CBNAAT report. Using WHO criteria, cases were classified into non-diabetic, prediabetic and diabetic on the basis of post-prandial blood sugar using Oral Glucose Tolerance Test. **RESULTS:** As per the study, 63.3% of tuberculosis cases were sputum positive and non-diabetic, whereas 9.2% were sputum positive and diabetic. Among sputum negative cases, 15% were non-diabetic and 3.3% diabetic. In the pulmonary tuberculosis category, 75.8% were non-diabetic and 10.8% were diabetic; in extra-pulmonary category, 2.5% were non-diabetic and 1.6% were diabetic. In aspects of socioeconomic-status, among non-diabetic, 30.8% were belonging to Class I & 5% to Class V; among prediabetic cases, 4.2% belonged to Class V and 0.8% to Class I; whereas 10% from Class V and 0.8% from Class III compromised diabetic population. Using BMI as criteria, 50.8% among non-diabetic,

1.6% among diabetic were underweight; whereas normal BMI, 25.8% were non-diabetic and 4.2% were diabetic; while among overweight, 6.7% were diabetic and 0.8% were prediabetic. Eventually, 12.5% of studied tuberculosis cases were diabetic, 9.2% were prediabetic and 78.3% were non-diabetic. **CONCLUSION:** At the end of the study, it was found that the prevalence of diabetes among studied tuberculosis cases was 12.5%, against the national prevalence (7.7%) as per latest NTEP reports. Moreover, among diabetic tuberculosis cases the majority were: sputum positive (9.2%), pulmonary tuberculosis (10.8%), belonged to Class V (10.0%) of socioeconomic-status, and overweight (6.7%). Consequently, tuberculosis has been found significantly related to diabetes mellitus and its associated factors, as depicted by the study's result.

**Table:** Distribution of Studied Tuberculosis Cases According to Diabetic Status and Other Associated Factors.

Characteristic	Non-diabetic	Prediabetic	Diabetic
<b>Sputum</b>			
Positive	76 (63.3%)	9 (7.5%)	11 (9.2%)
Negative	18 (15.0%)	2 (1.6%)	4 (3.3%)
<b>Site</b>			
Pulmonary	91 (75.8%)	10 (8.3%)	13 (10.8%)
Extrapulmonary	3 (2.5%)	1 (0.8%)	2 (1.6%)
<b>Socioeconomic status modified (bg prasad classification 2024)</b>			
Class I	37 (30.8%)	0	0
Class II	26 (21.7%)	1 (0.8%)	0
Class III	14 (11.7%)	2 (1.6%)	1 (0.8%)
Class IV	11 (9.2%)		
Class V	6 (5.0%)	5 (4.2%)	12 (10.0%)
<b>Nutritional status</b>			
Underweight	61 (50.8%)	4 (3.3%)	2 (1.6%)
Normal	31 (25.8%)	3 (2.5%)	2 (1.6%)
Overweight	2 (1.6%)	1 (0.8%)	8 (6.7%)
<b>Total</b>	<b>94 (78.3%)</b>	<b>11 (9.2%)</b>	<b>15 (12.5%)</b>

**Key Words:** Tuberculosis, Diabetes Mellitus, Prevalence.