



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF  
**PHARMACEUTICAL SCIENCES**

<http://doi.org/10.5281/zenodo.3364207>

Available online at: <http://www.iajps.com>

Research Article

## COMPUTED TOMOGRAPHY (CT) FINDING OF PULMONARY TUBERCULOSIS IN PEDIATRIC AND ADULT POPULATION

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Article Received: May 2019

Accepted: June 2019

Published: July 2019

**Abstract:**

**Objective:** To explore the computed tomography (CT) finding of pulmonary tuberculosis in pediatric and adult population.

**Patients and Methods:** A total of fifty pediatric and adult patients with tuberculosis were included in this study. The criterion for the selection of the patients for the study was those patients present with nonspecific symptoms as fever, weight loss anorexia were underwent to work have work up for tuberculosis as blood complete picture, chest X-ray, sputum for AFB, Mantoux test and CT scan whereas the frequency / percentages (%) and means  $\pm$ SD computed for study variables.

**Results:** During six-month study period total fifty patients had pulmonary tuberculosis i.e. children and teenagers (25 patients) and adult and elderly populations (25 patients) were explored and study. The mean  $\pm$  SD for age of population of children and adult population was  $8.83 \pm 4.73$  and  $56.62 \pm 4.81$  respectively. Regarding gender, among CHILDREN POPULATION Male 15 (60%) and female 10 (40%) while in ADULT POPULATION Male 14 (56%) and female 11 (44%). The common CT findings in children population were Consolidation 17 (68%), Cavitation 19 (76%) and Pleural effusion 12 (48%) while in adult population Cavitation 20 (80%), Lymphadenopathy 15 (60%) and Bronchiectasis 18 (72%).

**Conclusion:** Youngsters with pneumonic tuberculosis are similarly inclined to create critical ruinous changes in the lung with serious sequelae like older patients.

**KeyWords:** Computed tomography and pulmonary tuberculosis.

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Please cite this article in press Muhammad Jan Khetran et al., *Computed Tomography (Ct) Finding Of Pulmonary Tuberculosis In Pediatric And Adult Population.*, Indo Am. J. P. Sci, 2019; 06[07].

**INTRODUCTION:**

Pulmonary tuberculosis (TB) is a typical lung contamination worldwide with higher commonness in creating nations. It keeps on being a noteworthy therapeutic and social issue with high bleakness and mortality [1]. TB is second just to human immunodeficiency infection (HIV)/(AIDS) as the best executioner worldwide because of a solitary irresistible agent [2]. Tuberculosis in youngsters is generally identified with essential contamination and prior examinations expressed that it present with different types of moderately less forceful primary tuberculosis [3]. Generally it was believed that indications of essential tuberculosis are particular from reactivation tuberculosis as far as area and example [4]. The most widely recognized type of pediatric TB, the traditional essential complex comprises of a central parenchymal sore commonly in mid-lower zones with augmented depleting hilar/paratracheal hub [5]. An intensive survey of accessible writing did not uncover any nearby investigation with processed tomography (CT) filter in pediatric and grown-up tuberculosis. Our cross sectional investigation is meant to investigate the aspiratory signs of TB in pediatric and grown-up populace at instructing emergency clinics.

**PATIENTS AND METHODS:**

A total of fifty pediatric and adult patients with tuberculosis were included in this study. The criterion for the selection of the patients for the study was those patients present with non specific symptoms as fever, weight loss anorexia were underwent to work have work up for tuberculosis as blood complete

picture, chest X-ray, sputum for AFB, mantoux test and CT scan . The exclusive criteria were patient have malignancy, obstructive or restrictive lung diseases. After having selected cases for the study, careful history & examination was carried out in each patient in particular relation to respiratory system examination. The demographical and clinical profile of subjects was also noted. CT images were qualitatively analyzed for the presence of parenchymal changes and lymph nodal involvement such as consolidation, centrilobular nodules, miliary nodules, bronchiectasis, cavitation and fibrosis were assessed. For analyzing the zonal predominance and bulkiness of the disease both lungs were divided into upper, mid and lower zones. Distribution of abnormalities and total number of zones involved as a measurement of bulkiness of the disease were assessed. Mediastinal and hilar lymph nodes were assessed for the size, necrosis, matting and calcification. Other findings like pleural and pericardial effusion were noted whereas the data was collected on pre-designed proforma and analyzed in SPSS to manipulate the frequencies and percentages.

**RESULTS:**

During six-month study period total fifty patients had pulmonary tuberculosis i.e. children and teenagers (25 patients) and adult and elderly populations (25 patients) were explored and study. The mean  $\pm$  SD for age (yrs) of population of children and adult population was  $8.83 \pm 4.73$  and  $56.62 \pm 4.81$  respectively. The demographical / clinical profile and CT findings of study population are presented in Table 1 and 2.

**TABLE 1:** The Demographical and Clinical Profile of Study Population

Parameter	Frequency (N=50)	Percentage (%)
<b>AGE (yrs)</b>		
<1	11	22
1-9	08	16
9-19	06	12
20-29	04	8.0
30-39	05	10
40-49	05	10
50-59	08	16
60-69	02	4.0
70+	01	2.0
<b>CHILDREN POPULATION</b>		
Male	15	60
Female	10	40
<b>ADULT POPULATION</b>		
Male	14	56
Female	11	44
<b>RESIDENCE</b>		
Urban	32	64
Rural	18	36

**TABLE 2: The Computed Tomographic (Ct) Findings in Study Population**

Parameter	Frequency (N=50)	Percentage (%)
<b>CHILDREN and TEENAGERS</b>		
Consolidation	17	68
Centrilobular nodules	10	40
Miliary nodules	07	28
Bronchiectasis	09	36
Fibrosis	07	28
Cavitation	19	76
Lymphadenopathy	08	32
Matting	11	44
Calcification	08	32
Pleural effusion	12	48
Pleural loculation	08	32
Pericardial effusion	04	16
<b>ADULT AND ELDERLY</b>		
Consolidation	14	56
Centrilobular nodules	10	40
Miliary nodules	11	44
Bronchiectasis	18	72
Fibrosis	11	44
Cavitation	20	80
Lymphadenopathy	15	60
Matting	12	48
Calcification	13	52
Pleural effusion	16	64
Pleural loculation	10	40
Pericardial effusion	05	20

**DISCUSSION:**

The pathologic type of pulmonary tuberculosis is traditionally named primary or secondary tuberculosis and is relied upon the affectability of contaminated host. Our investigation included 50 patients i.e. children and teenagers (25 patients) and adult and elderly populations (25 patients). Kim et al [7] and Khatami et al [8] who indicated disconnected nodal inclusion in 7% and 10% separately. The typical parenchymal change in primary tuberculosis is central solidification (Ghon's center) seen traditionally in mid and lower zones. Cavitation, fibrosis and bronchiectasis are also seen in present series. In our study, right upper zone was most ordinarily associated with all age gatherings and is tantamount to the information by Koh et al [9] in which upper zone prevalence is seen in 49% of patients. The consolidation, cavitatory and lymphadenopathy commonly observed in both populations while other findings include pleural effusion, empyema and pericardial effusion in all age group population.

**CONCLUSION:**

Youngsters with pneumonic tuberculosis are similarly inclined to create critical ruinous changes in the lung with serious sequelae like older patients

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