Tuberculosis its Prevalence, Complications and Clinical Aspects among the Population of Northern Part of Bihar

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ABSTRACT
Introduction: It is commonly known as death causing disease of reproductive age group people. It is one of the top five death causing disease. It effects upon every age group people. But dangerous impact of tuberculosis occurs on immunocompetent people. There are a number of complications occur only due to one disease that is tuberculosis. it effects almost all organs and impaired their vital functions. Even if we leave death, even after tuberculosis proved to be most dangerous disease. In this study our main aim to explore the aspects, complications and prevalence of genital tuberculosis. In this study we also explore the ancient technics as well as the modern technics and their methods to ruled out the disease and improvement of treatment from ancient time to modern time. Method: This study was carried out between January 22 to April 23. 342 subjects are selected by inclusion and exclusion method. Subjects are classified in to 3 groups according to their physical appearance clinical symptoms and family history. Further patients are again classified in to negative, positive and doubtful negative patients after conducting routine and special investigations. Results: After all pathological investigation we found that 45 (13.1%) subjects have found positive in which 5.8% were male and 7.2 % were female. Conclusion: Tuberculosis is present in different forms and should be ruled out in early stage to safe from tissue damages. But unfortunately, we haven't any tools which can detect the disease in its early stage accurately. All the investigation has their own limitations and contamination errors. There are a number of patients in which some can easily identified by their clinical symptoms and related routine examination, some are asymptomatic and identified by advanced diagnostic tools where are some such patient are also found who were strong symptomatic but even not only routine but also advance investigations are fail to detect. In our study we found the root cause of the disease, which are high population density, economically lower standard, poor hygiene life style, compromise food habits, illiteracy, marriage in early stage, multiple marriage, multiple children, non- skilled medical practices are causing and enhancing the incident of tuberculosis.

1. Introduction

Even after availability of modern and advance diagnostic tools tuberculosis is still a major health related problem and rapidly growing disease. Tuberculosis is most dangerous disease of the world. This single disease kills 62,554 people in 2011. According to the TB report in 2021 81,920 female patients were found positive only Bihar, whereas total cases were 1,33,395. When we see the data of all over india,12,65,418 males, 8,16,093 females and 894 transgenders were found positive. All over India total positive cases were 20,82,405. This is very high and a dangerous situation. Death rate between male, female and transgender was respectively 4.9%,3.1% and 3.7%. So, it is very essential to ruled out the root cause so that we can stop the spreading of tuberculosis. Aim of our study is to identify and isolate the tuberculosis patients from symptomatic and family history of asymptomatic patient. Find out the clinical symptoms and early sign of tuberculosis patient. Our aim is to explore the relationship between clinical symptoms, routine pathological test and advance pathological test. Our aim is to explore the limitations of advance diagnostic investigations and current dangerous status of the disease. Tuberculosis is one of the 5 top death causing disease of adults at his reproductive stage. Even after availability of modern diagnostic tools, treatment facility and huge GDP investment about 1000 death occurred only in India. Tuberculosis is the single largest cause of death in adults. About one third of world's population are suffering and facing health related issues only due to it[3]. According to the report of WHO in 2014, 9.6 million people were suffering with tuberculosis and cause 1.5 million death[36,37,38]. A number of complications occur due to it and also cause damage the tissue of different organ. Maximum number of tuberculosis positive cases comes from economically lower classes, due to nutritional deficient food item, lower immunity and personal hygiene. Prevalence of tuberculosis is comparatively less in economically higher class due to strong immunity, nutritional food and hygienic life standard. Similarly, prevalence of tuberculosis is less in developed countries and high in developing countries. It was found that 90% of total incident

incidence of tuberculosis comes from undeveloped and developing countries. Many developed countries prevalence of tuberculosis is found nearly 1% and in developing countries prevalence is found nearly 13% or more. In Australia prevalence of tuberculosis is lowest (0.69%). Where as in India prevalence of tuberculosis is very high about 19%[55]. In developing countries 192 to 232 genital tuberculosis cases occur per 1 lakh population whereas 19 to 30 deaths occur per 01 lakh population[4]. Male genital urinary tuberculosis typically found in 40-50 years age group people where as prevalence of this disease in female is just double[6,14,15] Female genital tuberculosis is very common form of extra pulmonary tuberculosis and accounts 27% of all the cases of world and consisting 9% of all extrapulmonary cases[25]. In case of male genital tuberculosis commonest effected organ is kidney other hand in case of female genital tuberculosis fallopian tubes are most common effected organ. Tuberculosis is rapidly increase from 19% in 2011 to 30% in 2015 according to the report of ICMR[33]. Early age marriage is one of the biggest causes of tuberculosis and death. During the period of 1998 to 1999, 50% of marriage occurred at early age which reduce to 44.5% in 2006 according to NFHS III. In Jharkhand incident of early marriage is highest 71% where as in Bihar it was 65.2%. So, it was a big possibility that the highest prevalence of tuberculosis in this state occur due to it. In 5 to 30 % of tuberculosis cases genital organs are involve cases[12,16,17.] The prevalence of female genital tuberculosis with infertility was 26% and prevalence of infertility with female genital tuberculosis was 42% in New Delhi. Among all female genital tuberculosis of India, it was found that 3 to 16 % were infertile[26]. Infertility due to GTB was 3% and due to tube involvement is 41%[35]. It was also found that 20 to 50 % of HIV patient also have extra pulmonary tuberculosis[5,6] and 15% of all tuberculosis patient of world have also HIV.

Clinical Features

In our study we found that clinical sign, symptoms and pathological findings not identical in all cases. In a group of tuberculosis positive patients some had same but many had different sign and symptoms. Pathological findings were also not identical in all cases. In case of genital tuberculosis up to 11% have not symptoms[24,35,58]. Infertility is the most common symptoms of genital tuberculosis[5,7,16,27]. Most of the genital tuberculosis patients have no any sign and symptoms they look healthy but are infertile. Bacilli can live in body up to 20 years without causing any symptoms and disease this is called latent stage. Commonly found symptoms in pulmonary tuberculosis are chronic coughing, rise in fever at evening, weight loss, loss of appetite etc. Symptoms may or may not be present in extra pulmonary tuberculosis. Vaginal discharge PID and fever are present in acute stage. Infertility, menstrual problem, vaginal discharge, pregnancy loss pain in abdomen is the commonest clinical symptoms[30,53,60,81,82].

Transmission of Tuberculosis Bacilli and its Pathogenicity

Spreading of bacilli from infected person to healthy person mostly occur through air droplets during taking, coughing and sneezing. These infected air droplets from infected person inhale by healthy person[55,61]. Now these bacilli through contaminated air droplets came in alveoli of lungs and here they form ghon focus. This leads to cause primary tuberculosis. Primary tuberculosis is the initiation of all types of complications. From here bacilli may spread to different organs of our body by hematogenous spread. 90% of transmission carried out by only hematogenous spread,7% transmission occur by peritoneum bowel and lymphatic mesenteric pathway and rest 3% transmission is carried out by ascending route. Due to this transmission now, tuberculous bacilli reached to the different organs of our body. In case of male mostly effected organs are kidney 80%, epididymis 22-55% and other organs like lymph node, pleura, urinary bladder, urethra, penis and bones[7-11]. Globus minor is known to be the site where disease start to grow. In these cases of male, the involvement of genital organ causes male infertility.

But in other hand in case of female mostly effected organs are fallopian tube at ampullary region (90 to 100%), endometrium (50-80%), ovaries (20 to 30%), cervix (5 to 15%) and rarely vagina (1%)[34,56,57,59,60]. Now tuberculous bacilli cause irreversible morphological changes in the genital organs of the female. Which leads to infertility[1,2], PID and menstruation related problem. It was also found that tuberculosis bacilli cannot directly affect the genital organs it must be occur through pulmonary route. Bacilli can remain stay in body up to 20 years in latent stage and may reactivated due to low immunity or low vitamin d level.

Applicability

Our work is not only to find out the prevalence of positive tuberculosis patient but also to find out the basic factors associated with TB infection. Some basic problems we found are as follows:

A. **Ignorance towards health**- we experienced that most of the female members were ignored to go for treatment. They all usually send male member and children for treatment even in case of minor problems. But female members usually ignored to go for treatment even after major health issues. They were not aware that she can spread the disease and had to go for treatment not only for her but also for their family members. In all situation female members told they have no need for any treatment all are well. Most of the lower economic family female members not aware about personal hygiene and use dirty cloth instead of sanatory pads. We also found these case in middle family in adults.

B. **Illiteracy** – we also found that about 68% of people having the disease were not educated and were belongs to economically lower classes. They were struggling for being live. Healthy and nutritional food items were far away from him.

C. **Unregistered medical practices**- a number of non-skilled persons were found practicing and prescribing medicine. Increase in MDR cases are due to these unauthentic practices.

D. **Marriage in early age**- during conducting counselling we found a number of couple in which female partner had marred in early age. We also found 3 cases of female partner death during child birth. Most of the early age female partner were facing many problems low weight, menstruation problem, abdominal problem, multiple miscarriage history etc.

E. **High population density and lower living standard**- most of the houses were made up of soil and had single window in which 5-10 and more members were living. This type of non-ventilated room and high density enhance the incidence of tuberculosis infection.

F. **Refuse to provide data and also medicine**- our team and RNTCP team faced refusal of patient. They were strictly refusing to give their clinical history related data and other information. We experienced that many people were still present they do not want to disclose their disease due to fear of isolation from society or other resion.

G. **Smoking**- smoking is very dangerous and take an important role in spreading of tuberculosis and when smoking comes in the hand of women it become much more dangerous. In villages and slum areas females were found working in manufacturing of bidi in smoking and also share each other in front of children.

H. **Availability of medical facility**- now due to central and state governmental about every part of our country are equipped with modern diagnostic tools and facilities. But we found that PHC and APHC levels genealogist availability was not according to the requirement. Due to above region female patient went to higher medical center for their gynecological problems and usually ignore.

I. **Unknown death during birth and after birth**. – in our study we found a number of cases of child death during birth and just after death. Some cases were also found when death occur in the age group of 2 to 20 years. They had no any symptoms but all had weight loss and history of fever. In some cases, we found that 2-3 child death occur and had 3-4 children live. In some cases, second marriage occur only for the want of children.

Review Of Literature

Tuberculosis is creating 9 million new cases and 2 million death every year. Tuberculosis is remain world one of the most dangerous health associated problem effecting one third of world's population.

Literature review has described below under the topics are: Current status, History of tuberculosis and its treatment and limitations.

1. **Current status**- according to report of WHO an 7th November 2023. Total incident of death occur due to tuberculosis is 1.3 million in 2023. Tuberculosis is found most death causing disease after covid. In 2022 10.6 million persons found ill due to tuberculosis in which 54.7% about 5.8 million were male and 12% about 1.3 million were children. 30 billion Indian rupees had kept for tuberculosis

elimination and treatment purpose. Highest prevalence countries of MDR/RR TB are India (27%), China (14%), and Russia (18%).

2. **History of tuberculosis**- history of tuberculosis written by H. Herzo basel in 2015. According to this literature the first oldest evidence of tuberculosis was found in the remains of spinal bone had 8000 BC back. The oldest written evidence of tuberculosis was created by "Hamurab" the king of Babylonian. In 460-370 BC the famous Greek physician Hipporates detailed about the concept of phthisis. According to hipporates tuberculosis is the disease of cattle. Evidence of human involvement of tuberculosis was not available in this era. In these era phthisis was considered as hereditary disease. Aristotle (384-322 BC) skin disease of pig termed scrofula. He oppose the theory of hereditary. It was instructed on those time to not marry in harbored consumptive family. According to Aretaeus from Cappadocia this disease occur due to wrong treatment and the common symptoms are chronic and purulent sputum. Contagious nature of tuberculosis first described by Galen (131-201) but support the theory of hereditary. Also sylvius de la Boë and Morton considered phthisis as a genetic disease. According to Unitarian Laennec phthisis is a tumor forming disease. Philipp and Bert in 1843 first experimentally proved the transmission of the disease.
3. **Tuberculosis treatment of old era**.
    a. Sanatorium treatment- Hermann Brehmer explained about sanatorium treatment in his article "Tuberculosis primis in stadiis semper curabilis". Infected patient were kept at isolated place to heal the wound itself. Sanotorium treatment were became very popular in those era and new sanatorium was being started everywhere due to short term success result. In 21th November 1895 Germany central committee was came in force to regulated and establishment of new santorium.
    b. Collapse theory-(pneumothorax and thoraplasty)- when long term result of sanatorium came in to knowledge and all were very disappointed collapse theory came. Carlo Forlanini of Pavia published his successful results of 25 patient by this method. In 1933 Banyab accidently inject air in peritoneal cavity which leads to the initiation of new method known as Pneumoperitoneum method. After that in 1890 Max Schede in Germany introduce thoracoplasty.

Objectives

a. Analysis of socio economic back ground people to ruled out the cause of tuberculosis.
b. To investigate and find out the early sign and symptoms in suspected case of genital tuberculosis.
c. To find out prevalence of infertility due to tuberculosis.

2. Method And Material

Study design- we choose 342 individuals by inclusion and exclusion criteria and done comparative study. These includes symptomatic and asymptomatic having family history individuals.

Exclusion criteria- age more than 60.

Inclusion criteria are mentioned below-

i. Symptoms of infertility, mild fever increase at evening, chronic coughing weight loss, loss of appetite.
ii. Primary or secondary infertile patient.
iii. Post menopause women with abnormal uterine bleeding.
iv. Irregular menstrual cycle.
v. Presence of gland
vi. Past or family history.

Patients are classified in to two categories according to their clinical history and physical appearance: -

Group A- this group contains only asymptomatic patient but have family history. Total patient in this group is 252. These patients were further classified in to three sub groups on the basis of routine pathological investigations: -

Sub group A- Asymptomatic clinically healthy-

Total 192 patients (130 male and 62 female) having family history of tuberculosis are found clinically healthy, physically fit and fine. In this sub group about all patients are of middle-class family. All routine investigations have done and after analysis the result this group is further divided in to three groups-

Pathologically Normal (Total=156)	Pathologically mild Suspected (Total=28)	Confirmed Cases (Total=8) 8 asymptomatic patients are POSITIVE
Pathological finding of 125 patients- HB- 12 to 14 gm% TLC=5000 TO 10000/cmm DLC= all cells are within normal limit ESR= 10 mm to 20 mm 1st hr MT=Negative Urine AFB= Negative	Pathological findings of 18 patients HB- 12 to 14 gm% TLC=5000 TO 10000/cmm DLC= Lymphocytes (50-65 %) ESR= 10 mm to 20 mm 1st hr MT=POSITIVE (18) Urine AFB= Negative	Pathological findings of 5 patients- HB- 12.0 to 14.0 gm% TLC=5000-10000/cumm DLC= within normal limit ESR= 10 mm to 20 mm 1st hr MT=POSITVE STRONG Urine AFB= Negative TB GOLD- POSITIVE (2) X Ray-POSITIVE (3)
Pathological findings of 19 patients- HB- 10 to 12 gm% TLC=10000 TO 12000/cmm DLC= Neutrophils (70-80%) ESR= 10 mm to 30 mm 1st hr MT=Negative Urine AFB= Negative	Pathological findings of 4 patients- HB- 10 to 12 gm% TLC=10000 TO 12000/cmm DLC= Neutrophils (70-80 %) ESR= 10 mm to 30 mm 1st hr MT=POSITIVE (4) Urine AFB= Negative	Pathological findings of 1 patient- HB- 12.0 gm% TLC=12000/cumm DLC= Neutrophilia (75%) ESR= 30 mm 1st hr MT=POSITVE (22 mm) Urine AFB= Negative TB GOLD- POSITIVE
Pathological findings of 5 patients- HB- 8 to 9 gm% TLC=12500 TO 15400/cmm DLC= Neutrophils (70 to 80%) ESR= 20 mm to 50 mm 1st hr MT=Negative Urine AFB= Negative TB Gold- Negative	Pathological findings of 4 patients HB- 8.0 to 9.0 gm% TLC=15400 TO 17400/cmm DLC= Lymphocytes (50-65 %) ESR= 20 mm to 60 mm 1st hr X Ray= Normal TB Gold=Negative MT=Negative Urine AFB= Negative	Pathological findings of 1 patient- HB- 9.0 gm% TLC=14500/cumm DLC= Neutrophilia (80%) ESR= 48 mm 1st hr MT=POSITVE (20 mm) Urine AFB= Negative TB GOLD- POSITIVE
Pathological findings of 7 patients HB- 7.5 to 9.8 gm% TLC=15400 TO 18000/cmm DLC= Lymphocytes (50-65 %) ESR= 20 mm to 60 mm 1st hr MT=Negative Urine AFB= Negative	Pathological findings of 2 patients HB- 7.0 & 9.0 gm% TLC=14500 & 15400/cmm DLC=Neutrophils (75&80%) ESR= 20 mm to 50 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray=Negative TB Gold=Negative	Pathological findings of 1 patient- HB- 8.4 gm% TLC=15400/cumm DLC= Lymphocytosis (65%) ESR= 60 mm 1st hr MT=POSITIVE (20 mm) Urine AFB= Negative TB GOLD- POSITIVE

3. Result and Discussion

Total positive case found in 192 asymptomatic patients	8 (4.16%)
Male positive cases out of 130 males are	3 (2.3%)
Female positive cases out of 62 females are	5 (8.06%)

36 patients are found MT positive	18.75%
03 patients are found X ray positive	1.5%
05 patients are found TB gold positive	2.08%
02 patient is found TB PCR positive	1.04%

Sub group B-

Asymptomatic clinically mild suspected 49 patients in which 32 are males and 17 are females. Patients having symptoms of weakness and underweight putted in this group. They physically appear like ill and unhealthy. Mostly all are from economically lower family. Based on the finding of pathological investigations these patients are classified in to three sub groups-

Pathologically Normal (Total=32)	Pathologically Suspected (Total=11) MT POSITIVE	Confirmed Cases (Total=6)
Pathological findings of 15 patients HB- 10.0 to 14.0 gm% TLC=5000 TO 10000/cmm DLC= within normal limit ESR= 10 mm to 20 mm 1st hr MT=Negative Urine AFB= Negative	Pathological findings of 4 patients HB- 10.0 to 14.0 gm% TLC=5000 TO 10000/cmm DLC= within normal limit ESR= 10 mm to 20 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray= Negative	Pathological findings of 1 patient HB- 10.0 to 14.0 gm% TLC=5000 TO 10000/cmm DLC= within normal limit ESR= 10 mm to 20 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray= Negative TB Gold= POSITIVE
Pathological findings of 10 patients HB- 10.0 to 12.0 gm% TLC=7500 TO 10000/cmm DLC= within normal limit ESR= 30 mm to 40 mm 1st hr MT=Negative Urine AFB= Negative	Pathological findings of 3 patients HB- 10.0 to 12.0 gm% TLC=7500 TO 10000/cmm DLC= within normal limit ESR= 30 mm to 40 mm 1st hr MT=POSITIVE Urine AFB= Negative	Pathological findings of 2 patient HB- 10.0 to 14.0 gm% TLC=5000 TO 10000/cmm DLC= within normal limit ESR= 10 mm to 20 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray= POSITIVE (1) TB Gold= POSITIVE (1)
Pathological findings of 5 patients HB- 7.0 to 8.0 gm% TLC=5000 TO 10000/cmm DLC= within normal limit ESR= 10 mm to 30 mm 1st hr MT=Negative Urine AFB= Negative TB Gold=Negative	Pathological findings of 3 patients HB- 7.0 to 8.0 gm% TLC=7500 TO 10000/cmm DLC= within normal limit ESR= 20 mm to 30 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray- Negative TB Gold-Negative	Pathological findings of 1 patient HB- 7.0 to 8.0 gm% TLC=8700/cmm DLC= within normal limit ESR= 30 mm 1st hr MT=POSITIVE Urine AFB= Negative TB Gold= POSITIVE (1)
Pathological findings of 2 patients HB- 7.8 to 8.5 gm% TLC=15800 TO 17200/cmm DLC= Neutrophilia (80-90%) ESR= 10 mm to 30 mm 1st hr MT=Negative Urine AFB= Negative TB Gold=Negative	Pathological findings of 1 patient HB- 8.0 gm% TLC=16400/cmm DLC= Eosinophilia (38%) ESR= 20 mm to 30 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray- Negative TB Gold-Negative	Pathological findings of 2 patient HB- 7.8 to 8.5 gm% TLC=15800 TO 17200/cmm DLC= Neutrophilia (80-90%) ESR= 70 mm to 110 mm 1st hr MT=POSITIVE Urine AFB= Negative X Ray= POSITIVE (1) TB Gold= POSITIVE (1)

Total positive case found in 49 asymptomatic patients	6 (12.2%)
Male positive cases out of 32 male patients are	2 (6.25%)
Female positive cases out of 17 female patients are	4 (23.5%)

17 patients are found MT positive	34.6%
01 patients are found X ray positive	2.04%
05 patients are found TB gold positive	10.2%
01 patient is found TB PCR positive	2.04%

Sub group C- Total 11 patients are putted in this group. All are very weak and underweight. But still they haven't any visible symptoms. All are belonging to lower economic family.

Pathologically Normal (Total=06)	Pathologically Suspected (Total=01)	Confirmed Cases (Total=04)
HB- 7.0 to 8.5 gm% TLC=13500 TO 16400/cmm DLC= Neutrophilia (88-94%) ESR= 80 mm to 94 mm 1st hr MT=Negative Urine AFB= Negative TB Gold=Negative	HB- 8.2 gm% TLC=15700 DLC= Neutrophilia (90%) ESR= 92 mm 1st hr MT=POSITIVE Urine AFB= Negative TB Gold=Negative Undefine case	HB- 7.0 to 8.5 gm% TLC=13500 TO 16400/cmm DLC= Neutrophilia (88-94%) ESR= 80 mm to 120 mm 1st hr MT=POSITIVE (1) without fever MT=POSITIVE (1) with fever Urine AFB= Negative X Ray= POSITIVE (1) TB Gold= POSITIVE (3)

Total positive case found in 11 asymptomatic patients	4 (36.36%)
Male positive cases out of 4 male patients are	2 (50%)
Female positive cases out of 7 female patients are	2 (28.5%)

05 patients are found MT positive	45.4%
01 patients are found X ray positive	9.0%
03 patients are found TB gold positive	27.2%
02 patient is found TB PCR positive	18.1%

Group B-

In this group there are total 90 symptomatic patients. Some have also family history. Among 90, 39 subjects are male and 51 are female. Based on the grade of symptoms and these subjects are divided in to two groups-

Sub group A- symptomatic clinically mild suspected- 70 subject in which 30 are male and 40 are female. Pathological findings and results of these subjects are grouped in respect to clinical symptoms of 30 male and 40 females are respectively-

Clinical Symptoms of male patient	Number of Patients	Pathological findings
Fever, Coughing, Weight Loss	20	TLC=8500 TO 11500 Hb=11 to 14 gm% ESR=20 to 60 mm MT=8 POSITIVE Sputum AFB=2 POSITIVE X Ray=1 POSITIVE TB Gold=1 POSITIVE

Lymph node (Total = 7 Patient) a. Cervical Lymph node	4 Patients have cervical lymph node in without fever	TLC=8800 TO 15600 1=Neutrophilia (82%) 3=Lymphocytosis (55 to 62 %) Hb=9.6 to 14 gms ESR=20 to 100 mm MT=2 POSITIVE Sputum AFB=Negative TB Gold=All Negative FNAC=Negative
	01 have cervical lymph node with history of fever	TLC=12800 DLC=Lymphocytes=66% MT= Positive FNAC=Negative TB Gold= POSITIVE
b. Inguinal Lymph node with fever	02 Patients	TLC=8800 & 12400 DLC=Lymphocyte (58%) & Neutrophil (78%) Hb=10.8 & 12.0 gm% ESR=40 mm & 60 mm MT= Both Positive (16 mm & 20 mm) FNAC=Both Negative TB Gold=1st Negative, 2nd Positive
Azoospermia	02	TLC DLC= within normal Limit Hb > 12 gm% MT= Negative TB Gold= Negative Patient have no other sign and symptoms. Patient is looking fit and fine.
Breast Lump With family history No fever, weight loss	01	Hb=12.8 gm% MT=Negative FNAC=Gynecomastia TB Gold = Negative

Symptoms of female patient	Total Patients	Pathological Finding
Irregular Menstruation	15 10-without history of fever	TLC DLC-Normal Hb-9.0 to 11.0 gm% ESR-20 to 40 mm MT-6 POSITIVE PAP SMEAR- ALL NEGATIVE TB GOLD-ALL NEGATIVE X Ray- ALL NEGATIVE
	5-with history of fever	TLC-9000 TO 13500 DLC-Within normal limit ESR-30 to 68 mm 1st hr Hb- 8.0 to 11.0 gm% AFB-1 POSITIVE

		X Ray- 1 POSITIVE
Cervical Lymph node	02	TLC -14200 & 19200 DLC-Neutrophilia (56% & 80%) ESR- 60 mm & 120 mm 1st hr MT- Both Positive (16 & 18 mm) X Ray- Negative both AFB- Negative both TB Gold- POSITIVE 1St TB Gold- NEGATIVE 2nd FNAC-NEGATIVE 1st FNAC-Acinic Cell Carcinoma 2nd
Breast Lump History of Fever and weight loss,	02	TLC-5000 to 10000/cumm DLC- within normal limit ESR- 10 to 18 mm in 1st hr MT- Positive both FNAC-Negative both TB Gold- Negative both
Primary Infertility	Total=07 05= without fever	TLC DLC- Normal Hb- 9 to 11 gm% ESR- 10 to 50 mm 1st hr MT- POSITIVE-01 TB Gold- POSITIVE -01
	02- with fever, weight loss and family history	TLC-11500 & 15000/cumm HB- 11 to 9 gm% Lymphocyte- 52 % & 60 % MT- Both Positive AFB-Both Negative TB Gold- POSITIVE (01)
Coughing and weight loss	14 Patients Some have history of fever all have family history	TLC=11000 to 15000/cumm DLC-10 have neutrophilia (70 to 80%) 4 have lymphocytosis (50-60 %) Hb- 9 to 11 gm% MT- POSITIVE-06 X Ray -Negative all AFB- POSITIVE-02 10 Patient samples are collected for TB Gold- POSITIVE-01 One patient has fever, coughing, weight loss, family history but X Ray, AFB, TB Gold is Negative, only MT is positive and her physical appearance shows that she must be MTB positive. So, Gene xpert - test done and we got POSITIVE result.

Total positive case found in 70 asymptomatic patients	15 (21.42%)
Male positive cases out of 30 male patients are	6 (20%)
Female positive cases out of 40 female patients are	9 (22.5%)

32 patients are found MT positive	45.71%
02 patients are found X ray positive	2.85 %
07 patients are found TB gold positive	10.0%
01 patient is found gene expert positive	10.0%
05 patient is found AFB positive	1.4%

Sub group B- symptomatic clinically strong suspected -20 subject in which 9 are male and 11 are female. All are physically and symptomatically very strong suspected to tuberculosis infection. All belongs to very weak economically family. About all are uneducated and not aware about personal hygiene. Their houses are made up of soil. Their children were wearing old and torn cloths. About all were labor or rikshaw pullar.

Symptoms of male patient	No of Patients	Pathological Findings
Coughing mixed with blood, fever and weight loss	02	TLC-14200 & 16400 Hb- 9.2 & 9.0 gm% ESR- 70 mm & 120 mm MT- Both Positive AFB- Both Positive
Coughing, fever, weight loss	06	TLC-6700 to 11400/cumm DLC- 4 has neutrophilia > 75 % 2 has lymphocytosis 55 to 65% Hb-9.0 to 11.5 gm% ESR- 60 to 110 mm 1st hr MT- POSITIVE -04 AFB- POSITIVE-02 Rest four patients are strongly suspected. So, their blood samples are collected for TB Gold, out of 4 one patient is TB Gold- POSITIVE-01 Rest 3 patients are also very suspected but TB Gold is Negative. So their sputum samples are collected for gene xpert. We got Gene xpert- POSITIVE-01 But rest two patient are pathologically negative.
Penis sore	01	One patient has sore in his penis. He has family history of tuberculosis. History of fever and weight loss. Pus discharge from penis. He has five children. His wife is also positive by AFB smear examination. All five children are very weak and underweight they are under precaution treatment from RNTCP. Pathological findings are- TLC-13500/cumm DLC – Neutrophilia (85%) Hb- 10.0 gm% ESR-80 mm 1st hr

		MT- POSITIVE TB GOLD- POSITIVE-01 ZN Stain of pus- Negative

Symptoms of female patients	Number of Patients	Pathological findings
Vaginal discharge, abdominal pain, fever, weight loss and one patient is primary infertile	05	TLC- 4500 to 8000/cumm Hb-6.2 to 9.0 gm% ESR-70 to 120 mm 1st Hr. Pap smear-01 suggestive of tuberculosis. 5 pap smears are collected by gynecologist and done cytological examination. But 4 are negative and one is suggestive of tuberculosis. All 5 these patients blood samples are collected for TB Gold test. Result TB Gold- POSITIVE-02. In these two positives patient one is that primary infertile patient.
Amenorrhea+ fever+ weight loss.	01	Our team visited a home where a women found lying on bed. She is very weak, unable to walk and unable to coughing. She is unmarried and underweight. Her father was old TB patient. Pathological findings are- TLC-5100 DLC-Lymphocyte-62% Hb-6.8 gm% MT- POSITIVE AFB Sputum- Unable to give sputum sample. TB Gold- Negative
Coughing and weight loss	03	TLC-11400 DLC-Neutrophils-82% MT-POSITIVE-01 X Ray-POSITIVE-01 Sputum AFB- POSITIVE-01 Total POSITIVE cases-02
Secondary Infertile coughing, history of fever and weight loss.	02	TLC-8600 & 11700 DLC-within normal limit & Neutrophilia-76% Hb-10.8 gm% & 9.4 gm%

		AFB-Negative & POSITIVE TB Gold 1st -Negative Gene Xpert- Negative

Total positive case found in 20 patients	12 (60.0%)
Male positive cases out of 9 male patients are	7 (77.7%)
Female positive cases out of 11 female patients are	5 (45.4%)

13 patients are found MT positive	65.0%
04 patients are found X ray positive	35.0 %
06 patients are found TB gold positive	30.0%
00 patient is found gene xpert positive	00.0%
05 patient is found AFB positive	40.0%
05 patient is found TB PCR positive	25.0%

After analyzing pathological, radiological and clinical symptoms we found 45 (13.1%) positive subjects out of 342 subjects. Total negative cases are 234 and total doubtful negative cases are 63 (18.4%). In 45 (13.1%) positive subject 20 were male 5.8% where as 25 were female 7.2%. Total confirmed cases of genital tuberculosis is 9 (2.6%) in which male genital tuberculosis cases were 2 (0.58%) and female genital tuberculosis cases were 7(2.04%). In total doubtful negative cases asymptomatic with pathological suspected cases were 36 and symptomatic with pathological suspected cases were 27. All were MT positive, high TLC count, low hb, But confirmative investigations like AFB, culture, gene xpert, TB gold were negative.

4. Conclusion

Tuberculosis would be present in human body in active or latent form. So, it became very essential to ruled out the disease in shortest duration of time. Different types of tuberculosis and involvement of multiple organs makes it very difficult to diagnose. So a immediate and crucial need of a new investigation which can diagnose accurately the disease in early stage. It was found that prevalence of disease was highest in lower living standard people, having low personal hygiene status.

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