



Clinical Study of Incidence of Pulmonary Tuberculosis in Patients of Koch's Abdomen and Vice Versa

Authors

Dutt C¹, Chauhan A^{2*}, Sharma P³

¹Associate Professor, ²Associate Professor, ³Postgraduate Student,
Department of Surgery, Gajra Raja Medical College, Gwalior (M.P.) India – 474001,

*Corresponding Author

Dr Anurag Chauhan

Contact no. 9425341209, Email: drddutt@rediffmail.com

Abstract

Introduction: Tuberculosis remains the principal cause of death in developing countries. Tuberculosis usually attacks the lungs but can also affect other parts of the body. Aims of study was to show the incidence of pulmonary TB in patients of koch's abdomen and vice versa.

Methodology: This prospective study was conducted in surgical ward in association with Chest and TB Ward, G.R. Medical College, Gwalior (M.P.) from August 2015 to July 2016. Study consisting of total 76 cases out of which 38 cases were known to be suffering from pulmonary TB (Group A), rest 38 cases were confirmed to be suffering from koch's abdomen (Group B). Incidence of Koch's abdomen is to be studied in group A and incidence of pulmonary TB is to be studied in group B.

Results: Incidence of Koch's abdomen in patients of pulmonary tuberculosis was found to be 18.4% whereas incidence of pulmonary tuberculosis in patients of Koch's abdomen was found to be 7.8%. Person with low socioeconomic status were affected more commonly with both abdominal and pulmonary tuberculosis. The maximum age incidence of Koch's abdomen was found in between 2nd and 4th decade. Female are found to have higher incidence of both abdominal TB and pulmonary TB.

Conclusion: Abdominal TB can occur independent of pulmonary TB. Medical management is the main stay of therapy.

Keywords: Pulmonary tuberculosis, abdominal tuberculosis, koch's abdomen.

Introduction

Tuberculosis is the common and often deadly infectious disease caused by various strains of mycobacterium usually mycobacterium tuberculosis in humans. It remains the principal cause of death in developing countries. Probably due to poverty, lack of education, deduction rate, non availability of experienced staff and insufficient coverage of community immunization.

Tuberculosis usually attacks the lung but also affect the other parts of body. It spreads through air when people who have the disease, cough, sneeze or spit. If properly treated tuberculosis cures by any susceptible strains but if caused any unsuceptable strains, tuberculosis is incurable. If untreated, the disease may be fatal within 5years in more than half of the cases. The term abdominal TB or koch's abdomen refers to

tuberculous infection of gastrointestinal tract. Mesenteric lymph nodes, peritoneum, omentum and organ related to GIT spleen liver etc.

Koch abdomen is a major health in developing countries more with upsurge of HIV infection, HIV & TB contemporarily called dual epidemic. Some literature considered Koch abdomen and abdominal TB as sixth most frequent site for extra pulmonary TB. In any form either pulmonary or extra pulmonary is the major cause of morbidity & mortality in our country.

Aims and Objective

- To study the incidence of pulmonary TB in patients of Koch abdomen. •
- To study the incidence of Koch abdomen in patients of pulmonary T.B.
- To study the various clinical future of Koch abdomen.

Material and Methods

This prospective study was done in department of surgery and chest & TB G.R. Medical College Gwalior (M.P.) from august 2015 to July 2016 total 76 cases were studied randomly out of this 38 cases were know to be suffering from pulmonary tuberculosis (named group A). Rest 38 cases were confirmed to be suffering from Koch abdomen (name group B). incidence of Koch's abdomen is to be studied in group A and incidence of pulmonary tuberculosis is to be studied in group B. selection of patients made by random bases.

Exclusion criteria

1. Children below the age of 14 year. •
 2. Patient with known HIV positive and immunosuppressed person. •
 3. Diagnosed cases of GI malignancy. •
- Group A of 38 patients of confirmed pulmonary tuberculosis following criteria •
1. Clinical history and physical examination.

2. Radiological examination of gut, any filling defect in correlation with other evidence suggest abdominal tuberculosis.
3. Histopathological examination of resected gut or mesentric lymph nodes, extra abdominal biopsy material like axillary lymph nodes.
4. Response and regression of abdominal symptom with anti tubercular therapy.
5. Appearance of gut and abdominal viscera in diagnostic laparoscopy.

Apart from routine examination following investigation can be done in most cases:

Skiagram of chest and abdomen.

Barium meal and barium enema study of the gut.

USG and C.T. Scan of the abdomen in some cases.

Colonoscopy and sigmoidoscopy of patients (When needed)

Group B patients with known koch's abdomen, the diagnoses of pulmonary tuberculosis is made by following:-

1. Clinical history and physical examination of the patient
2. Radiological examination of the chest (In active pulmonary T.B., infiltrates or consolidation and/or cavities are often seen in upper part of the lung with or without mediastinal or hilar lymphadenopathy.
3. Repeated sputum examination of AFB and some time culture of this material for tubercule bacilli (when needed).
4. USG and CT scan of the chest.

Special investigations:-

Ascitic fluid examination for differential lymphocytic count, adinosine diaminase

Serological study such as ELISA.

PCR examination of pleural, peritoneal fluid and tissue

Mounteux test

Follow up: All patients were followed for period of one year. Patient of group A were followed with regular USG scan of abdomen while patient of group B were followed with regular chest X Ray and sputum analysis.

Observation

Table : 1 Age and Sex wise Distribution of Group A & B

S.No	Age	Group A			Group B		
		Male	Female	Total	Male	Female	Total
1	<20	2 (5.3%)	3(7.9%)	5 (13.2%)	4(10.5%)	5(13.2%)	9(23.7%)
2	21-30	5 (13.2%)	4 (10.5%)	9 (23.7%)	9 (23.7%)	5 (13.2%)	14 (36.8%)
3	31-40	4 (10.5%)	5 (13.2%)	9 (23.7%)	5 (13.2%)	3 (7.9%)	8 (21.1%)
4	41-50	6 (15.8%)	2 (5.3%)	8 (21.0%)	3 (7.9%)	1 (2.6%)	4 (10.5%)
5	51-60	3 (7.9%)	2 (5.3%)	5 (13.2%)	1 (2.6%)	1 (2.6%)	2 (5.3%)
6	>60	1 (2.6%)	1 (2.6%)	2 (5.2%)	0 (0%)	1 (2.6%)	1 (2.6%)
	Total	21(55.3%)	17(44.7%)	38(100%)	22(57.9%)	16(42.1%)	38(100%)

In group A total male were 21 and female were 17 and maximum no. of cases were in age group of 21-30 yrs. (23.7%) and 31-40 yrs. (23.7%) while

in group B total male were 22 and female were 16 and maximum no. of cases were in age group of 21-30 yrs. (36.8%)

Table : 2 On bases if socio economic status of patients of Group A and B

S.No	SE status	Group A		Group B	
		No. of cases	Percentage	No. of cases	Percentage
1	Low SE Status	27	71.1%	21	55.2%
2	High SE Status	11	28.9%	17	44.8%
	Total	38	100%	38	100%

Individual whose monthly income is <5000 Rs. was considered in low SE status. Maximum no. of patients belongs to low SE status 44.8% and 55.2% respective in Group A and B.

Incidence of koch's abdomen in patients of Group A and pulmonary TB in patient of Group B, koch's abdomen and pulmonary TB was higher in female patients and younger female affected more between 21-40 years of age.

Table No. 3: Incidence of abdominal symptoms and signs observed in group A (out of 7 cases which were positive (7 cases =100%))

S.No.	Symptoms	Total no. of positive cases	% of Total	Signs	Total no. of positive cases	% of total
1	Pain in Abdomen	7	100%	Abdominal tenderness	5	71.4%
2	Fever	4	57.1%	Lump in abdomen	1	14.3%
3	Nausea and Vomiting	4	57.1%	Ascites	1	14.3%
4	Bowel disturbance	5	71.4%	Doughy feecal of abdomen	2	28.6%
5	Lump in abdomen	1	14.3%	Visible peristalsis	1	14.3%
				Distension of abdomen	4	57.1%

Pain in abdomen was observed in nearly in all cases. Pain was defused and dull aching in nature. Second symptom was abdominal disturbance (diarrhea and constipation). Signs shows abdominal tenderness was the major sign which was observed in 71.4% of patients. Tenderness was more in lower abdomen.

Table No. 4: Incidence of various respiratory symptoms and signs observed in group B (Out of 3 cases which were positive (3 cases = 100%))

S.No.	Symptoms	Total no. of positive cases	% of Total	Signs	Total no. of positive cases	% of total
1	Cough with or without expectorant	3	100%	Decrease breath sound	2	66.6%
2	Fever	2	66.6%	Adventitious sound	3	100%
3	Haemoptysis	0	0%	Dull percussion notes	1	33.3%
4	Dyspnoea	0	0%	Decrease movement of chest	1	33.3%
5	Chest Pain	1	33.3%			

Cough is the major symptom observed near by all patients. Duration of cough was not considered important as patients of pulmonary TB with extra pulmonary TB can present with cough of < 3 weeks of duration.

Signs were observed was adventitious sound nearby cell newly +ve cases of pulmonary TB.

Table : 5 Laboratory investigations (at the start of study)

S.No	Investigation	Group A		Group B	
		No.	Percentage	No.	Percentage
1	Hb (gm%) < 10	27	71.7%	24	63.2%
2	Rise of ESR>15 mm/hrs.	28	73.6%	27	71.1%
3	Leucocytosis >1000/mm ³	26	68.4%	24	63.2%
4	Lymphocytosis	20	52.6%	17	44.7%

Majority of the patients in both group were having low Hb and raised ESR, TLC and lymphocytosis (in DLC).

Table : 6 Mode of diagnosis out of 7 positive case group A and 3 in group B

S.No	Investigation	Group A			Investigation	Group B		
		No. of patients	Total no. of positive cases	Total no. of negative cases		No. of patients	Total no. of positive cases	Total no. of negative cases
1	X-ray abdomen	7	4(57.1%)	3(42%)	X-ray Chest	3	3(100%)	0(0%)
2	BMFT	2	1(50%)	1(50%)	Sputum Examination	3	2(66.6%)	1(33.3%)
3	USG	7	6(85.7%)	1(14.3%)	USG	2	1(50%)	1(50%)
4	Other	4	4(100%)	0(0%)	Other	2	1(50%)	1(50%)

Group A

USG was done all patients and report were found to be positive in 85.7% newly diagnosed/cause of abdominal other investigations like FNAC, Biopsy and ascitic fluid analysis well done in 4

suspected. Cases was positive for AFB in all 4 cases.

Group B

X-ray chest was done in all cases and found positive in all 3 cases, sputum examination found positive in 66.6% patient.

Table : 7 Mode of management

S.No.	Group	Total cases	Cases under went surgery	Cases treated non-surgically
1	Group A	38	1 (2-6%)	37 (97.4%)
2	Group B	38	6 (15.8%)	32 (84.2%)

Total of 7 patients underwent surgery out of 76 patients in Group A only case patient underwent surgery in Group B 6 patient underwent surgery for various cases.

Discussion

We conduct our study on 76 cases in our institute. Out of these 38 patient were known cases of pulmonary TB (Group A) and 38 patient were known cases of Koch's abdomen (Group B) from each case whole history was taken and thorough clinical examination was done. Each patient in Group A was subjected to USG abdomen scan and each patient of in Group B was subjected to chest x-ray and sputum analysis beside other investigations.

The study included 38 patients in Group A (Male 21 Female 17) 38 patient in Group B (Male 22 Female 16). Then patient were closely followed on inpatient and outpatient Each patient was asked to report for any complaints.

The incidence of Koch's abdomen was 18.4% as reported by Das P and Shukla HS (2008)¹. The incidence of abdominal T.B. is 27.8% where as Bhansali S.K. (2006)² noted in 24.8% in patients of pulmonary T.B. There are several reports of abdominal T.B. secondary to pulmonary involvement. But there are also report of primary T.B. of intestine without antecedent of associated pulmonary T.B. as reported by Wig KL & Bawa (1993)³.

Incidence of Pulmonary T.B. was 7.9%. as reported by Iseman MD (1997)⁴.

Group A shows incidence of Koch abdominal was 14.3% of males as compared to 28.6% of female. This was in accordance with study of Dutt and Gupta (2009)⁵ who also noted female affected more as compared to male.

Distribution of group according to socio economic status. Cases with monthly family income less than 5000 rs were considered in low socioeconomic status. In my study 71.1% of patient of Pulmonary T.B. and 55.2% of patient of abdominal T.B. belong to low socio economic status. The cause may be poor hygiene, late

diagnosing of tuberculosis and inadequate treatment of pulmonary tuberculosis which was common in this group as reported by Heart and Wright (1993)⁶.

The diagnosis can be easily missed or delayed resulting increase morbidity and mortality as reported by Steyn and Prince (1993)⁷ particular symptom in each case depend on the part of gastrointestinal tract affected and the extent and duration of the disease.

Incidence of various abdominal symptoms and signs observed in patient of Group A. Early case of abdominal T.B. are difficult to diagnosed because of only general symptoms like loss of weight, abdominal discomfort, low grade fever. Abdominal pain was experience in 100% of the newly developed cases of Koch's abdominal and pain was generally diffuse, vague and nonspecific and incidence of symptoms of Koch's abdomen in decreasing order as follows: pain in abdomen, bowel disturbance, nausea and vomiting, distention of abdomen and lump in abdomen as reported by Dhanpat (2007)⁸.

Naseer A et al (2008)⁹ also noted abdominal tenderness as most important sign of abdominal T.B. Incidence of development of ascites was only 14.3%, ascitic fluid was analysed and found to be of exudation in nature with high content of protein, ADA analysis of ascitic fluid show 45 IU which was considered to be tuberculosis.

USG scan was advised in all patient of Group A and found to be helpful in diagnosis of Koch's abdominal patient show dilated bowel loop with thickened wall, 1 patient showed ascites and 1 patient showed enlarged mesentric lymphnode, 1 patient show normal USG. Kedar and Shah (2003)¹⁰ reported USG findings in 90 patient with intestinal, peritoneal, mesentric and lymphnode T.B.

X-ray abdominal also done in all patient of group B which show feature suggestive of T.B. in 4 patients. In study out of 7 newly diagnose case of Koch abdominal in group B, x-ray abdominal was positive in 4 (57.1%) patient.

In all 3 patient for pulmonary T.B. chest x-ray shows areas of consolidation with minimum effusion (100%). This does not mean that chest x-ray is 100% sensitive and specific for pulmonary T.B. All 3 newly diagnosed cases of pulmonary T.B. in group B sputum analysis for AFB was positive in to cases USG. Chest we done in 2 sputum positive patient of pulmonary T.B. of group B.

Patient underwent surgical in group A only 2.6% of the patients under went surgical treatment beside medical treatment where as 15.8% of patient in group B underwent surgical treatment as reported by Bastos et al¹¹. T.B. basically an medical disease and surgical management is only done when any complication like obstruction, perforation etc. Abdominal T.B. and pulmonary T.B. response very well to antitubercular medication.

Summary and Conclusion

Incidence of Koch Abdominal in patient of pulmonary T.B. was found to be 18.4% where as incidence of pulmonary T.B. in patient of Koch abdominal was 7.8% person with low socio economic status were affected more commonly with both abdominal and pulmonary type of T.B.

The maximum age incidence of Koch abdominal was found between second to fourth decades, fourth female found to have higher incidence of both abdominal T.B. and pulmonary T.B. as compared to male. Diagnosis of abdominal T.B. was challenging as it present with variety of symptoms. Pain in abdominal is the most common symptom and abdominal tenderness is the most common signs. Cough with or without expectoration is the most common symptom and adventitious sound in chest is the most common signs observed in pulmonary T.B.

Abdominal T.B. can occur independent of pulmonary T.B. medical management is the main stay of therapy and still treatment of choice in abdominal T.B. Surgical treatment was only done in vomiting complicated abdominal T.B. with intestinal obstruction.

References

1. Das P Shukla HS: Abdominal TB ; demonstration of tubercle bacilli in tissue and experimental production of H pylori tubercal. Bacilli. Br.J. Surg. 2008 : 62;6140-19
2. Bhansali SK, The challenge of abdominal tuberculosis in 310 cum 2006 Ind. J Surg. 40: 65.
3. Wig KL & Bawa YS. Acute pulmonary tuberculosis. Int J Tuber 1953;1:10.
4. Iseman MD. Treatment of multidrug resistant TB. M. Eng J Med. 1947 329;784-79
5. Dutt and Gupta , Intestinal TB. Ind. J. Surg. 20.;396(2009).
6. Heart and Wright. Abdominal tuberculosis still a potentially lethal disease. Am J Gastroenterology 83(3):744-50, 1993.
7. Steyn E, Prince SK Abdominal TB still a potentially lethal disease. Am. J. Gastroentology (1993)- 83(5) 744.50
8. Dhanpat MC. Rao, VM. Management of abdominal tuberculosis. Int J Tuber 1985,32, p.126.
9. Nasir Ahamad, Memzoor A, Fida A , Study of 86 cases of abdominal TB 2008 Pakistan J. Surg. 13. C J 47-52
10. Kedar RP, Shah PP, Shivde RS et al. Sonographic findings in gastrointestinal and peritoneal tuberculosis. Clin Radiol 1994; 49:24-9.
11. Wig KL, Gupta SP, Chitkara NL. A study of hyperplastic intestinal tuberculosis and allied abdominal conditions. Ind J Tubercle. 3:105,2005.
12. Bastos LGV, Fonseca LS, Mello FCQ, Rufino-netto A, Goulb JL. Prevalence of pulmonary tuberculosis among respiratory symptomatic subjects in an out patient primary health unit. Int J Tuberc Lung Disc 2007;11(2):156-160.