



## ASCITIC TUBERCULOSIS IN PRIMI GRAVIDA

## Gastroenterology

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## ABSTRACT

A 28-year old Primi in 13 weeks of gestation presented to the Medical Gastroenterology department with complaints of progressive abdominal distension with loss of appetite for 1 month duration. Clinical and Ultra-sonological examination revealed free fluid in the peritoneal cavity within intra uterine gestation, corresponding to the gestational age. Investigations revealed hypo albuminemia. Ascitic fluid analysis revealed low SAAG (0.1 g/dl) with high ascitic protein (6.4 g/dl). Polymerase Chain Reaction (PCR) of ascitic fluid for AFB- DNA was negative. Ascitic fluid ADA was elevated (116 mg/dl). In view of low SAAG ascites with high protein content and elevated ADA levels, diagnosis of abdominal tuberculosis (ascites) was made and patient was started on weight based first line Anti tubercular (ATT) medications. Repeat Ultrasound after completing intensive phase of ATT revealed complete resolution of the ascites. High index of clinical suspicion is necessary for early detection of abdominal tuberculosis in pregnant women

## KEYWORDS

Tuberculosis, Abdomen, Ascites, Adenosine Deaminase (ADA), Primi Gravida, Extra Pulmonary TB.

## INTRODUCTION

Tuberculosis is a common communicable disease found worldwide. India bears the largest burden of tuberculosis (TB) in the world<sup>1,2</sup>. Abdominal tuberculosis comprises 5% of all the worldwide cases of TB<sup>3</sup>. Varied clinical presentations have delayed the early detection of Tuberculosis. Ascitic tuberculosis during pregnancy is rare presentation of abdominal tuberculosis.

## Case Report

A 28-year old Primi in 13 weeks of gestation presented to us with complaints of abdominal discomfort and loss of appetite for 1 month. She did not give any history of fever with chills, evening rise of temperature or loss of weight. No history of altered bowel or bladder habit were present. No history of cough with expectoration. No history of contact with TB patient. Routine ultrasound showed normal liver echo texture (Fig -1), moderate ascites (Fig - 2) with Gravid Uterus with normal fetal movements (Fig -3).

On examination she was moderately built and nourished, her blood pressure 120/ 70 mmHg, pulse rate 84 bpm, temperature 37°. The absence of pallor, icterus, cyanosis, clubbing, pedal edema and lymphadenopathy were noted. No external markers of TB were seen. No clinical evidence of chronic liver disease was found. Abdominal examination revealed ascites and gravid uterus. Other system examinations were unremarkable.

Blood investigations revealed hypo albuminemia (Table - 1). Other investigations were within normal limits.

Ultrasound guided, diagnostic ascitic fluid tapping revealed clear straw colour appearance of ascitic fluid was noted (Table -2).

Ascitic fluid analysis revealed low Saag (0.9 g/dl). The protein content in the ascitic fluid was elevated (6.4 g/dl).

Ascitic fluid AFB -DNA detection by Real time PCR was negative, ADA (Adenosine Deaminase) of ascitic fluid was elevated (116 U/L).

In view of the low SAAG ascites with high ascitic protein and elevated ADA levels, diagnosis of Abdominal Tuberculosis was made. After the consult of TB specialist, she was started on weight based first line Anti Tubercular medications<sup>4</sup> (Table -3).

Repeat Ultrasound done after completing intensive phase of ATT reveals complete resolution of free fluid in the peritoneal cavity. Patient is currently on continuation phase of ATT. Patient had completed 2 months of First line ATT and review Ultrasound Abdomen has shown complete resolution of ascites. (Figure - 4)

Table - 1

Investigations	Report	Normal range
LFT		
Total protein (g/dl)	7.5	6.4- 8.2
Albumin (g/dl)	2.9	3.5 - 5
Globulin (g/dl)	4.6	2.3 - 3.5
A/G ratio	0.6 : 1	2
Total bilirubin	0.33	1
Direct bilirubin	0.1	0.25
AST/SGOT	25	0 - 45
ALT/SGPT	14	0-49
Alkaline phosphatase	71	60 - 170
Gamma GT	20	15 - 85
APTT	28.40	29.4
PT	13.80	11.3
INR	1.24	
TSH	1.95 uIU/ml	0.34 - 4.5

Table - 2

Investigations	Report
<b>Ascitic Fluid Analysis</b>	
Colour	Straw
Appearance	Turbid
Total Leukocyte count	2900 cells/cumm
Differential count	N - 62 %, L - 26%
	Smears show few discrete epithelioid cells, in the background of neutrophils, lymphocytes, macrophages.
	No Atypical cells noted
<b>ADA</b>	<b>116 I/U</b>
Glucose	68 mg/dl
<b>Protein</b>	<b>6.4 g/dl</b>
Albumin	2.8 g/dl. SAAG - 0.1g/dl
LDH	376 U/L

Table-3

Anti Tubercular medications	Dosage	Max dose
ISONIAZID (H)	5mg/kg/dose : 300mg	300mg
RIFAMPICIN (R)	10mg/kg/ dose : 600 mg	600mg
PYRAZINAMIDE (Z)	40 – 55kg : 1000 mg	2000mg ( 76 – 90kg)
ETHAMBUTOL (E)	40 – 55kg : 800mg	1600mg( 76 – 90kg)



Figure 1: Ultrasound Image of patients Liver



Figure 2: Free fluid noted in peritoneal cavity.



Figure 3: Ultrasound image of fetus



Figure 4: Resolution of Free Fluid in Abdomen

## DISCUSSION

Abdominal tuberculosis can involve the peritoneum, peritoneum, lymph nodes and solid organs<sup>5,6</sup>. 5% of all the worldwide TB cases are attributed to abdominal tuberculosis<sup>7</sup>.

Ascitic fluid analysis usually reveals a straw-coloured fluid, with total leukocyte count between 150 to 4000 cells/mm<sup>3</sup>, with a lymphocyte predominance<sup>8</sup>. The SAAG less than 1.1 g/dl with ascitic protein >3g/dl aids in the diagnosis of abdominal tuberculosis<sup>9,10</sup>. ADA value more than 40 has been found to have a high sensitivity and specificity of 100 and 97 respectively for abdominal tuberculosis<sup>11</sup>. Our patient's ADA value was nearly triple the reference range.

Ascitic fluid AFB -DNA detection by Real time PCR was negative. A study conducted by Makesh Kumar et al. showed a low number of PCR positives among the 154 body fluid samples, i.e., 27% in ascitic fluid, 22% pleural fluids, and 36% CSF samples<sup>12</sup>. Hence a negative PCR for AFB – DNA does not exclude the diagnosis of tuberculosis of extra pulmonary origin. Ultrasound imaging did not reveal any peritoneal thickening, or omental fat stranding, and intraabdominal lymphadenopathy was absent. No organ involvement was also noted. Patient was not subjected to MRI, CT investigations, since contraindicated during pregnancy.

Repeat Ultrasound done after completing intensive phase of ATT reveals complete resolution of free fluid in the peritoneal cavity. Patient is currently on continuation phase of ATT.

In view of low SAAG ascites, High protein level of ascitic fluid, with elevated ADA level a diagnosis of Abdominal tuberculosis was made<sup>10,11</sup>. The patient was started on weight based first line anti tubercular medications (Table -3). Patient had completed 2 months of intensive Phase of ATT, after which a repeat ultrasound abdomen was done which revealed complete resolution of ascites. Patient is now in the continuation phase of ATT and is doing well.

## Learning Points:

1. Tuberculosis must be suspected in pregnant patients with unexplained ascites
2. Low SAAG ascites with elevated ascitic protein and elevated ADA level suggest tuberculosis.
3. Negative Polymerase Chain Reaction (PCR) of ascitic fluid for AFB- DNA does not exclude the diagnosis, in the appropriate clinical setting.

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