



**ORIGINAL RESEARCH PAPER**

**Gastroenterology**

**CLINICOPATHOLOGICAL STUDY ON ASCITIES WITH SPECIAL REFERENCE TO GERIATRIC POPULATION ATTENDING BANKURA SAMMILANI MEDICAL COLLEGE AND HOSPITAL**

**KEY WORDS:** Ascities, Etiology, CLD, Alcoholic CLD, Malignancy

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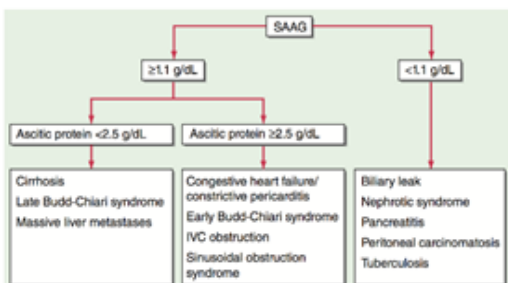
**ABSTRACT** **Introduction-** Ascities is accumulation of fluid within peritoneal cavity. Portal hypertension related to cirrhosis accounts for 84% of all cases of ascities. **Aims & Objectives-** To study clinical profile, alteration of biochemical parameters and to explore different etiologies of ascities. **Materials & Method-** Approximately 101 patients, both males and females above age of 12 years, excluding pregnant and unwilling patients, admitted in IPD BSMC&H are taken into consideration for this Descriptive-cross sectional study. **Observations-** In this study, it was seen most common cause of ascities is Chronic Liver Disease (CLD), among which Alcoholic CLD most common followed by other causes. **Conclusion-** In the present study, Alcoholic CLD is considered as the most common cause of ascities, followed by malignancy.

**INTRODUCTION:-**

The word ascities is of Greek origin (askos) and means bag or sac.<sup>1</sup> Basically ascities is accumulation of fluid within the peritoneal cavity.<sup>2</sup> The causes of ascities may be classified into two broad pathophysiologic categories: that which is associated with a normal peritoneum and that which occurs due to diseased peritoneum.<sup>3</sup> Portal hypertension related to cirrhosis accounts for 84% of all cases of ascities.<sup>4</sup> The three most common causes of cirrhosis are excess alcohol use, chronic hepatitis C and nonalcoholic steatohepatitis (NASH).<sup>5</sup> Cardiac ascities, peritoneal carcinomatosis, and "mixed" ascities resulting from cirrhosis and a second disease account for 10-15% of cases.<sup>6</sup> Less common causes of ascities include massive hepatic metastasis, 1 and renal disease (Nephrotic Syndrome).<sup>7</sup> Rare causes of ascities include hypothyroidism and familial Mediterranean fever.<sup>8</sup> Ascities in absence of cirrhosis generally results from peritoneal carcinomatosis, peritoneal infection, or pancreatic disease.<sup>9</sup>

The serum-ascities albumin gradient (SAAG) is the single best test for the classification of ascities into portal hypertensive and nonportal hypertensive ascities.<sup>10</sup> The SAAG reflects the pressure within the hepatic sinusoids and correlates with the hepatic venous pressure gradient.<sup>11</sup> The SAAG is calculated by subtracting the ascitic albumin concentration from the serum albumin level and does not change with diuresis.<sup>12</sup>

A SAAG > 1.1 g/dL reflects presence of portal hypertension and indicates that the ascities due to increased pressure in hepatic sinusoids.<sup>13</sup> A SAAG < 1.1 g/dL indicates that ascities is not related to portal hypertension.<sup>14</sup> For high-SAAG (> 1.1) ascities, the ascitic protein level can provide further clues to etiology.<sup>15</sup>



**Figure 1 depicted causes of ascities according to SAAG .<sup>16</sup>**

chronological age of 65 years as a definition of "elderly" or older person. However, the challenge of how to incorporate a suitable multidimensional definition into the "persinoable age" concept remains. For this project, we will use 50 years of age and older as the general definition of an older person. We feel these data are necessary to fully inform policy makers and programme planners.

**MATERIALS & METHOD:-**

It is a descriptive-cross sectional study, done in patients presented with clinical features of ascities and confirmed by laboratory investigations. All patients undergone detailed history taking, clinical examination, laboratory investigations. Approximately 101 patients were taken into consideration for this study.

**INCLUSION CRITERIA-**

Both male and female patients with age > 12 years.

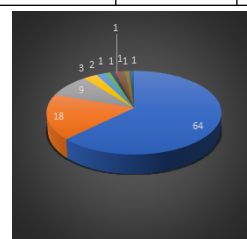
**EXCLUSION CRITERIA-**

- a) Pregnant women
- b) Patients not willing to participate in this study.

**RESULTS AND ANALYSIS:-**

**Table 1 Etiology of ascities in the study group**

Etiology	No	Percentage
CLD	64	64
Malignant	18	18
TB	9	9
Cardiac	3	3
Unknown	2	2
Acute pancreatitis	1	1
Budd-chiari syndrome	1	1
Acute liver failure	1	1
SLE	1	1
Pyogenic	1	1
Cystic SOL	1	1

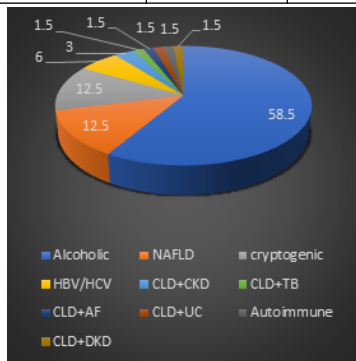


**Figure2.**

The above diagram shows that most common cause of ascities was CLD(64%), 2<sup>nd</sup> most common cause was malignancy (18%).

**Table 2. Various types of CLD and associated diseases causing ascities:-**

Etiology of CLD	No	Percentage
Alcoholic	37	58.5
NAFLD	8	12.5
Cryptogenic	8	12.5
Chronic HBV/HCV	4	6
CLD with CKD	2	3
CLD with TB peritonitis	1	1.5
CLD with AF	1	1.5
CLD with UC	1	1.5
Autoimmune	1	1.5
CLD with DKD	1	1.5



**Figure 3.**

The above diagram shows that alcoholic CLD in 58.5% cases, was most common cause of ascities with CLD. NAFLD and Cryptogenic comprise 8 cases in each(12.5%), whereas HBV/HCV related ascities in 4 cases(6%), Autoimmune in 1 case(1.5%) and rest causes comprise only single case in this study i.e 1.5% each.

**Table 3: Distribution of etiology in various age group**

Age	CLD	Malignancy	TB	Cardiac
<20-29	4(6%)	1(5.5%)	2(22.2%)	0
30-39	15(24%)	1(5.5%)	4(44.4%)	0
40-49	25(39%)	6(33.4%)	1(11.2%)	0
50-59	11(17%)	3(16.6%)	0	1(33%)
60-70	9(14%)	7(39%)	2(22.2%)	2(67%)

The above table shows most common cause of ascities in age group 50 and above is cardiac cause, followed by malignancy, then CLD.

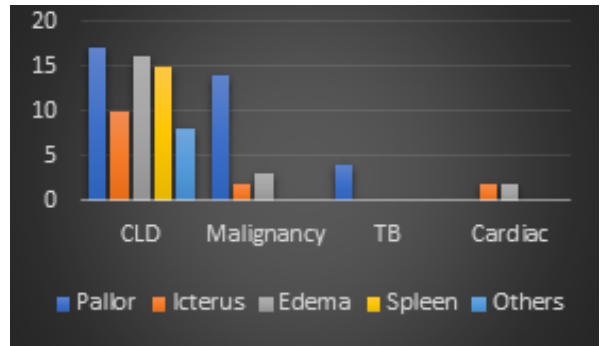
**Table 4: Presenting Complains in different study group**

	Abdo distention	Pain abdo	Yellow discolor	Loss of appetite	Weight loss	fever	SOB	Hematemesis/melena	Altered Sensorium
CLD	64	24	8	40	22	1	1	14	3
Mal	18	14	2	13	11	1	0	0	0
TB	9	8	0	5	5	5	0	0	0
Car	3	2	2	1	0	1	3	0	0

The above table shows that most common complain was distention of abdomen; 2<sup>nd</sup> most common complain loss of appetite and then pain abdomen.

**Table 5: Finding of physical examinations :-**

	Pallor	Icterus	Edema	Spleen	others
CLD	17	10	16	15	8
Malig	14	2	3	0	0
TB	4	0	0	0	0
Cardiac	0	2	2	0	0



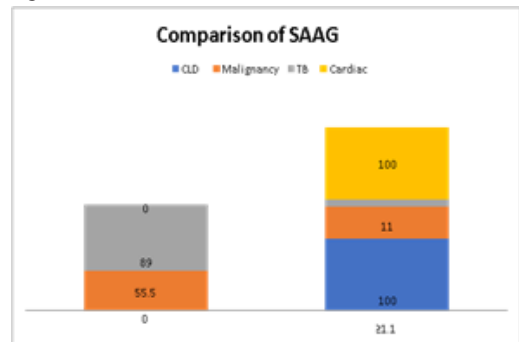
**Figure 4:**

The above table and diagram shows pallor is a common finding in CLD and malignant ascities.

**Table 6: SAAG in various cause of ascites**

ETIO	CLD	MALIG NANCY	TB	CARDIAC
SAAG <1.1	0	10(55.5%)	8(89%)	0
SAAG ≥1.1	64(100%)	8(44.5%)	1(11%)	3(100%)

SAAG ratio is one of the most important determinants to distinguish various causes of ascities.

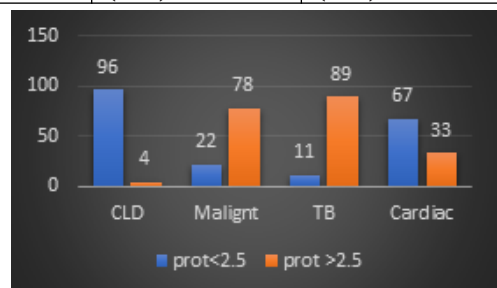


**Figure 5:**

The above diagram shows 100% cases of CLD and cardiac ascities are high SAAG ascities, whereas 89% of TB peritonitis and 55% of malignant cases are low SAAG ascities.

**Table 7: Comparison of ascitic fluid protein**

Etiology	Protein <2.5gm/dl	Protein ≥2.5 gm/dl
CLD	62(96%)	2(4%)
Malignancy	4(22%)	14(78%)
TB	1(11%)	8(89%)
Cardiac	2(67%)	1(33%)



**Figure 6:**

The figure showing CLD in 96% cases having low protein in ascitic fluid, whereas 78% malignant ascities; 89% of TB; 33% of cardiac ascities have high protein in ascitic fluid.

**DISCUSSION:-**

In the present study, it was seen that most common cause of ascities was CLD(64%), followed by Malignancy(18%), then TB peritonitis(9%), Cardiac(3%), Unknown(2%) and Acute Pancreatitis, Acute Budd-chiari Syndrome, Acute Liver F ailure, SLE and Pyogenic cystic SOL in each 1 case(1%).

In a study done by S. R. Ramakrishnan et al(2015) seen that a total of 200 patients with ascities were studied. The most common cause of ascities being chronic liver disease(90%), 9(4.5%) were malignant ascities, 5(2.5%) were pancreatitis, 4(2%) were TB abdomen and 2(1%) were cardiac cirrhosis.

In the present study, it was seen that Alcoholic CLD in 37 cases(64%) was the most common cause of ascities with CLD, NAFLD and cryptogenic in each 8 cases(12.5%), HBV/HCV related in 4 cases(6%), Autoimmune in 1 case(1.5%), CLD with CKD in 2 cases(3%) and CLD with TB, CLD with AF, CLD with UC, CLD with DKD in each one case(1.5%).

In S. R. Ramakrishnan et al(2015) study, out of 200 patients 120(60%) were Alcoholic Liver Cirrhosis, 37(18.5%) were HBV related liver cirrhosis, 13(6.5%) were Cryptogenic cirrhosis, 7(3.5%) were HCV related cirrhosis, 3(1.5%) Autoimmune and 2(1%) were Cardiac cirrhosis.

In our study, most common cause of ascities in age group above 50 is cardiac cause, followed by malignancy, then CLD. In the present study, distention of abdomen was most common presenting complain of CLD with ascities(64% cases). Abdominal distention also common presentation in malignant ascities(18%); in TB peritonitis(2%) and cardiac ascities(2%).

Pain abdomen (24%), yellow discoloration(8%), loss of appetite(40%), weight loss(22%), hematemesis and melaena(14%), edema(16%) were also significant clinical findings in CLD with ascities in our study.

Pain abdomen, loss of appetite, weight loss were clinical presentations in malignant ascities, TB peritonitis too.

Splenomegaly present in 15% cases of CLD with ascities in our study. Pallor, Icterus, edema were also present in CLD with Ascities in significant percentage.

In present study, it was seen that CLD in 64 cases(100%) was high SAAG ascities. In case of Malignancy, 10 cases (55.5%) was high SAAG, 8 cases (44.5%) was low SAAG. In case of TB peritonitis, 8 cases(89%) was low SAAG and 1 case(11%) was high SAAG ascities. In cardiac ascities, 1 case(100%) was high SAAG ascities.

Ascitic fluid total protein (AFTP) was low(<2.5) in 62 cases(96%) of CLD. 14 cases(78%) of malignancy had high AFTP whereas 8 cases(89%) of TB peritonitis were high protein in ascities fluid.

In a study done by Khan fy et al (2008) seen that based on serum-ascitic albumin gradient, ascities due to malignancy was divided into two groups: first, with SAAG<1.1g/dL, second, SAAG>1.1g/dL. The first group was consistent with carcinomatous peritonitis (malignant ascities, while second group represented tumors metastasizing to the liver leading to portal hypertension (malignant related ascities). Moreover, ascitic total protein was high (>2.5g/dL) in 11(91.6%) patients of the first group, while it was low(<2.5g/dL) in 90(90%).

**CONCLUSION:-**

It was a hospital based cross-sectional observational study done in 101 patients with ascities to establish the clinicopathological profile. The study had certain limitations. The major limitation being that liver biopsy, fibroscan was not done to establish the etiological diagnosis. In this study, CLD

was considered as most common cause of ascities and Alcohol, NAFLD being most common cause of CLD. SAAG ratio is most important parameter to establish etiology of ascities. After 6<sup>th</sup> decade of life, most common cause of ascities is CLD followed by malignancy in this region, Bankura, West Bengal.

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