

## Profile of ascites patient admitted in Nepal Medical College Teaching Hospital

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### ABSTRACT

Ascites is one of the frequently encountered problems in internal medicine. Common causes of ascites are portal hypertension including cirrhosis of liver and congestive heart failure, hypoalbuminemia associated with nephrotic syndrome, intra-abdominal malignancy and abdominal tuberculosis. We evaluated 43 patients presented with ascites in Nepal Medical College Teaching Hospital (NMCTH). After history taking, clinical examination, imaging studies and laboratory evaluation alcoholic liver disease and abdominal tuberculosis were diagnosed in 19 and 5 patients respectively. Constrictive pericarditis was diagnosed in 2 patients and 2 patients were suffering from HCV related liver disease. Present study revealed alcoholic liver disease as the commonest cause of ascites.

**Keywords:** Ascites, alcoholic liver disease, chronic viral infection.

### INTRODUCTION

Ascites, the accumulation of fluid in the abdomen, is that the Greeks referred to as 'askos' or bag.<sup>1</sup> In 2000 BC ascites was a known physical symptom with an established therapy: abdominal paracentesis.<sup>2</sup> About 50-60% of cirrhotic patients will develop ascites within 10 years.<sup>3</sup> Ascites is a late complication of cirrhosis that not only reduces the patient's quality of life but also is associated with a mean survival of only two years from its onset.<sup>4</sup>

In cirrhosis, the presence of portal hypertension (>8 mm Hg) is necessary but not sufficient for the development of ascites: other factors involved include hyperaldosteronism, activation of the sympathetic nervous system, and reduction in renal blood flow, perhaps stimulated by reduction in actual or perceived central blood volume ('vasodilatation hypothesis').<sup>5</sup>

Clinical presentation is with abdominal distension and/or abdominal pain, and many patients complain of backache. Three grades of severity are recognized: grade 1 is only detectable by ultrasound examination; grade 2 is moderate, detected by a shifting dullness; grade 3 is gross, with tense abdominal distension and fluid thrill on palpation.<sup>6</sup> Diagnostic abdominal paracentesis (30ml) should be performed in all patients when first presented with ascites and in all patients with any evidence of clinical deterioration.<sup>7</sup> If uncomplicated cirrhotic ascites is suspected, ascitic fluid should be sent for cell count and differential and estimation of albumin and total protein. To diagnose ascitic fluid infection, ascitic fluid should be inoculated into blood culture bottles instead of plain

bottles for higher diagnostic yield.<sup>8</sup> Adenosine deaminase (ADA) is increased in tuberculous ascitic fluid due to the stimulation of T-cells by mycobacterial antigens. The levels in tuberculous ascitis were significantly higher than those in cirrhotic or malignant ascitis.<sup>9</sup>

Major cause of ascites are as follows<sup>10</sup>

- Portal hypertension -Cirrhosis (75% of all cases)  
-Congestive cardiac failure (3%) -Budd-Chiari syndrome -Veno-occlusive disease
- Hypoalbuminaemia -Nephrotic syndrome (1%)  
-Protein-losing enteropathy -Malnutrition
- Malignancy (10%) -Including lymphomas, leukaemias and primary mesothelioma
- Infection (2%) -Spontaneous bacterial peritonitis  
-Tuberculous peritonitis -Fungal (eg, candida, cryptococcus) -Parasitic (eg, strongyloides, entamoeba)
- Pancreatitis (1%)

The present retrospective study was designed to assess the causes of ascites in patients admitted for the treatment in Nepal Medical College Teaching Hospital (NMCTH) Kathmandu

### MATERIALS AND METHODS

A retrospective study was conducted in all patients admitted in NMCTH presenting with ascites. We studied their demographic profile, presenting complaints, laboratory and imaging studies from September 2011 to February 2012 to detect the causes of ascites and other associated abnormalities.

**RESULTS**

A total number 43 patients (26 male and 17 female) were examined presented with provisional diagnosis of ascites. The most common presentation of the patients was abdominal distension followed by abdominal pain and anasarca fever and shortness of breath (Fig. 1). General examinations revealed, 12 as anemic and 26 as icteric. Only 1 had lymphadenopathy and 27 had pedal edema.

The average Hb concentration was 10.63gm/dl (range 5.9gm/dl to 14.7gm/dl). Regarding RBC indices the average Mean corpuscular volume was 94 fl (range 107 to 76 fl). Mean bilirubin was 5.1 mg/dl.

Most of the patient had modest rise of SGPT and SGOT. Two patients had the liver enzymes more than 500 IU/dl. SGPT and SGOT were more significantly related to ascites in alcoholic than in non alcoholic patients. Pearson correlation was <0.001 in alcoholic and <0.05 in non-alcoholics.

Prothorombin time (PT) was more than 4 second impaired in 33 patients showing that there acute insult in the liver in these patients.

In 23 patients had ascitic fluid total cell count was less than 500 /dl and deferential count showed neutrophils more than 250 /dl in ten patients. Out of all those patients only 30 patients had serum ascetic albumin gradient (SAAG) more than 1.1. Viral serology was performed in all patients only 2 of them were positive for HBsAg and one of them were positive for anti HCV IgM.

After history taking, clinical examination, imaging studies and laboratory investigation, alcoholic liver

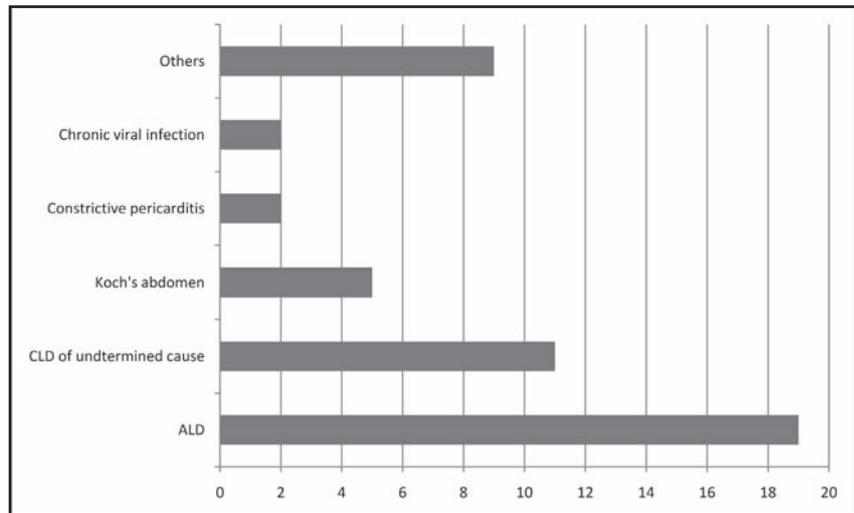


Fig. 2. Diagnosis

disease was diagnosed in 19 patients, abdominal tuberculosis in 5 patients, constrictive pericarditis and HCV related liver disease was diagnosed in 2 patients each. Rest had miscellaneous diseases (Fig. 2). Total duration of hospital stay on average was 7 days. During this period 2 patients expired.

**DISCUSSION**

Although cirrhosis is the main cause of ascites. Causes other than liver disease is found in around 15% of patients. Approximately 5% of patients had both the above mentioned causes of ascites.<sup>10</sup> Interpretation of the results of ascitic fluid analysis is difficult in patients with mixed causes but crucial for accurate diagnosis and treatment. A study done in Qatar showed that out of 104 patients evaluated Liver cirrhosis was the most frequent cause of ascites in 59.6%. Other causes were malignant ascites in 11.5%, tuberculous peritonitis in 7.7%, heart failure in seven 6.7%, nephrotic syndrome in 2.9%, chylous ascites in 1.0% and eosinophilic ascites in 1.0% of patients.<sup>11</sup> Our study also revealed liver disease as the commonest cause of ascites. The common causes

of chronic liver diseases the world over are infection with hepatitis B virus (HBV), hepatitis C virus (HCV) and alcohol abuse.<sup>12</sup> The community prevalence of both HBV and HCV infections in Nepal is low. Prevalence of HBsAg, a marker of HBV infection is 0.9%, and anti-HCV, a marker of past exposure to HCV is 0.4%. However, HBV and HCV accounted for 40% and 14% respectively of the liver cirrhosis in Nepal. Study of 430 liver biopsies, performed in the period 1990 to 1997 showed that alcohol and Hepatic IVC Disease (HVD) were the two predominant causes of liver diseases in Nepal. Alcohol was responsible for 44.6% of the cirrhosis

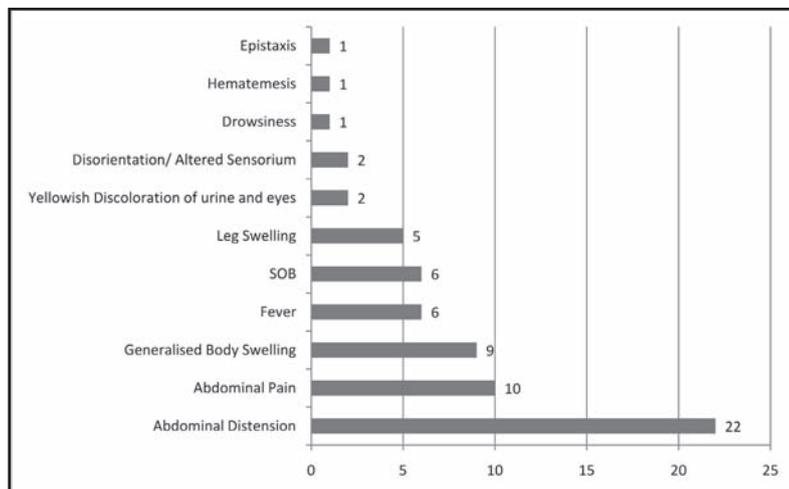


Fig. 1. Presenting symptoms

and 20.4% of the other liver diseases and HVD for 34% of cirrhosis and 29.3% of other liver diseases.<sup>13</sup> Present study recorded alcoholic liver disease as the commonest cause of ascites. Tuberculosis of the gastrointestinal tract is the sixth most frequent form of extra-pulmonary site, after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis.<sup>14</sup> Abdominal TB has diverse and non-specific symptomatology. No single test is adequate for diagnosis of abdominal tuberculosis in all patients. Abdominal TB in non-HIV patients remains an ongoing diagnostic dilemma requiring a high index of clinical suspicion.<sup>15</sup> In this study 11% of our patients had diagnosis of peritoneal tuberculosis based on clinical and examination of ascitic fluid protein, differential count and ADA level.

Study revealed alcoholic liver disease as the commonest cause of ascites followed by tuberculosis of abdomen and chronic viral infection.

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