transmission risks of diarrhea. It is noteworthy to mention that although non-significant we found that infants who were at risk of malnutrition (MUAC<136 mm) were prone to diarrheal illness too. To block the physiological cycle of malnutrition-infection synergism, carrier roles have been found to be important.

The findings of this study suggest that routine screening and management of postnatal depression at the primary health care level in Bangladesh should be given serious consideration, given the increased risks of diarrhea and possible malnutrition among infants. Further research is needed to elucidate the possible links with nutrition and care giving for young children of mothers with postnatal depression.

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Ascitic fluid lipid profile and albumin level

Many diseases are complicated by the accumulation of free fluid within the peritoneal cavity (ascites). The most common cause of ascites is liver cirrhosis, but in about 20 percent of cases there is an extrahepatic cause[1]. Serum ascites albumin gradient (SAAG) has been suggested to categorize ascites better than either the total protein concentration or other parameters[2-4]. If the SAAG is 1.1 g/dL or greater the patient is considered to have portal hypertension. Conversely if the SAAG is <1.1 the patient is unlikely to have portal hypertension. Several studies have proved a higher cholesterol gradient in ascites of patients with peritoneal carcinomatosis[5-7]. Like SAAG, serum ascites lipid gradient (SALG) is also a subtraction of serum and ascitic fluid values of lipid fractions, But till now only one study has been published on the significance of SALG in the differential diagnosis of ascites of different causes[8]. Regarding the necessity of more evaluations about the association between SALG and portal hypertension this study was designed to find a simple and cost effective test in order to differentiate between portal hypertensive (cirrhotic and non-cirrhotic) and nonportal hypertensive ascites.

The prospective study was carried out from July 2008 to July 2009 on 180 patients with ascites of four different etiologies: 75 patients with cirrhosis, 9 with portal vein thrombosis, 3 with idiopathic portal hypertension, 3 patients with leukemia and hepatic vein thrombosis, 45 patients with abdominal tuberculosis, 45 patients with intraabdominal malignancy and ascites. The diagnosis was made according to clinical manifestation and relevant investigations. Serum and ascitic fluid samples were collected simultaneously under aseptic technique from all patients on the day of admission. The serum and ascitic fluid lipid profile were estimated using automated analyzer (RANDOX laboratories Ltd.

Diamond Road United Kingdom). Values of SAAG and SALG were derived using standard formulas.

There were 105 males and 75 females with the age ranging from 20 to 65 years (mean: 43.2 years). Out of the 180 patients, 81 patients were alcoholics and 24 patients had history of tuberculosis.

SAAG was more than 1.1 in cirrhotic portal hypertension group and non-cirrhotic portal hypertension and less than 1.1 in tuberculous and malignant ascites. The difference between the portal hypertension group and those without portal hypertension was found to be statistically highly significant ($p<0.0001$). Values for ascitic fluid lipid fractions were found to be higher for tuberculosis and malignancy group as compared to portal hypertensive group ($p<0.05$).

The portal hypertension group (both cirrhotic and non-cirrhotic), was having a higher gradient as compared to the other two groups without portal hypertension (abdominal tuberculosis and malignancy). The difference was statistically highly significant ($p<0.0001$). Malignancy group were having the lowest gradient among the four groups studied, for all of the four parameters except for LDL. The difference between the tuberculosis and malignancy group was not statistically significant for cholesterol and LDL ($p>0.05$), but was statistically significant for HDL, triglycerides ($p<0.001$) and VLDL ($p<0.05$). The difference between the cirrhotic and non-cirrhotic group was not statistically significant ($p>0.05$) for all the parameters (Table I).

Sensitivity was highest for serum ascites cholesterol gradient (93.3%) but specificity, positive predictive value and negative predictive value were highest for SAAG (Table II).

The difference between the portal hypertension group and those without portal hypertension was statistically highly significant ($p<0.0001$) for ascitic fluid albumin. But we can see that the mean of malignancy group was <2.5, so it can be concluded that a value of 2.5 (as per previous views) cannot be taken as a cut off value to differentiate between

Table I: Mean (± SD) concentration of albumin and lipid profiles in serum and ascetic fluid of study subjects

Parameter		Cirrhotic portal hypertension (n=75)	Non-cirrhotic portal hypertension (n=15)	Tuberculosis (n=45)	Malignancy (n=45)
Albumin	Serum	2.96 (0.55)	3.08 (0.45)	3.53 (0.52)	3.38 (0.38)
	Ascitic fluid	1.24 (0.89)	1.10 (0.39)	2.74 (0.53)	2.48 (0.66)
	SAAG	1.72 (0.53)	1.98 (0.61)	0.79(0.28)	0.90 (0.29)
Cholesterol	Serum	151.88 (37.41)	139.60 (39.54)	153.87 (34.99)	161.27 (33.85)
	Ascitic fluid	49.48 (38.23)	35.20 (24.47)	94.68 (41.22)	112.00 (29.71)
	SALG	102.4 (23.73)	104.4 (28.04)	58.85 (8.28)	49.67 (5.98)
Triglycerides	Serum	137.76 (55.11)	109.48 (13.58)	130.8 (43.84)	139.87 (27.20)
	Ascitic fluid	44.74 (40.73)	31.12 (21.4)	75.48 (38.43)	96.33 (29.72)
	SALG	93.3 (46.63)	78.36 (16.43)	54.83 (7.75)	44.87 (8.23)
HDL cholesterol	Serum	43.69 (14.18)	34.06 (8.20)	41.02 (7.89)	38.14 (7.03)
	Ascitic fluid	10.8 (8.81)	6.75 (4.66)	23.67 (9.46)	25.3 (8.21)
	SALG	32.76 (8.99)	27.31 (7.34)	17.39 (4.80)	12.82 (2.29)
LDL cholesterol	Serum	80.69 (28.31)	68.8 (25.21)	89.22 (22.84)	101.87 (27.57)
	Ascitic fluid	24.43 (20.26)	23.32 (20.64)	63.03 (27.68)	75.89 (25.63)
	SALG	56.19 (18.27)	45.12 (13.50)	26.37 (10.09)	25.97 (5.62)
VLDL cholesterol	Serum	33.48 (20.85)	26.16 (8.10)	33.48 (7.22)	39.24 (14.01)
	Ascitic fluid	10.71 (8.38)	8.63 (7.04)	20.51 (7.67)	29.08 (14.75)
	SALG	22.78 (18.97)	17.53 (3.75)	12.53 (2.38)	10.3 (3.26)

Table II: Sensitivity, specificity and predictive values of serum ascites albumin gradient and serum ascites lipid gradient

Parameter	Cut-off value	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
SAAG	1.10 (g%)	90.0	96.6	96.4	90.6
Serum ascites cholesterol gradient	63.50 (mg%)	93.3	90.3	90.3	93.3
Serum ascites triglyceride gradient	63.50 (mg%)	83.3	96.6	96.2	85.3
Serum ascites HDL gradient	19.75 (mg%)	90.0	90.0	90.0	90.0
Serum ascites LDL gradient	36.00 (mg%)	86.7	90.0	89.7	87.1
Serum ascites VLDL gradient	14.00 (mg%)	80.0	90.0	88.9	81.8

transudative and exudative ascites, even though the difference was statistically significant. Anita et al (2001) also noted similar results[9].

For SAAG, the difference between portal hypertension group and those without portal hypertension was found to be statistically highly significant ($p<0.0001$) (Table.1), our findings are in consistent with recently published data showing SAAG helped to differentiate cirrhotic from malignant ascites[3,7,9]. Similar results were also noted elsewhere[4,6]. But according to the study by Lu C-W et al (1991) SAAG was not as useful[10].

In our study we got statistically significant difference between non-cirrhotic portal hypertension group and those without portal hypertension for SAAG. All the studies available in the literature were done between cirrhosis with malignancy with or without tuberculosis, so we couldn't compare the difference between non-cirrhotic portal hypertension with malignancy and tuberculosis, as there was no published data on that. According to the present study, diagnostic efficacy of SAAG is in differentiating between portal hypertensive and nonportal hypertensive ascites rather than cirrhotic and non-cirrhotic ascites.

Our study showed significantly higher value of SALG for the portal hypertension group as compared to the other two groups without portal hypertension ($p<0.0001$). Malignancy group were having the lowest gradient among the four groups studied, for all of the four parameters except for LDL (Table I). Our results were consistent with the study of Sharatchandra et al (1996-1998)[8]. Few authors have reported on serum ascites cholesterol gradient only[3]. Like SAAG, the SALG is also a useful parameter in differentiating high portal pressure ascites from low portal pressure ascites. So, SALG can also be used as a screening test in ascitic patients as it may give clue to the possible etiology, and help in planning further investigative modalities in ascitic patients. However, it is difficult to explain the pathophysiological relationship between portal hypertension and lipid gradients and the rarity of cases can make the result questionable, so scheduling other multicenter studies with more cases can be useful.

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Comparative study of efficacy of brush cytology and transthoracic fine needle aspiration cytology in the diagnosis of bronchogenic carcinoma

For long time, bronchoscopic biopsy for histopathology remains the standard in the diagnosis of bronchogenic carcinoma[1-3]. The diagnostic yield from biopsy of bronchoscopically visible tumors, occupying the lumen of bronchus is over 90%[3]. The yield from the bronchoscopically visible but deep seated or intramural tumor is 50-60%[3]. In cases of peripheral tumors, the diagnostic yield is much lower. The process usually fails in small peripheral lesions, in the lesions where the bronchi become fibrosed or narrowed, so that the bronchoscope could not reach the site of the lesion[3]. Bronchial cytobrushing, an ancilliary process done during bronchoscopy, yields better results. Bronchial cytobrushing could be done from area of suspicion, having chance of uncertain biopsy[3]. By examination of the bronchial brush specimen, it is now possible to make a diagnosis in 80-90% of patients with lung carcinoma[4]. Transthoracic fine needle aspiration cytology (FNAC) is another pulmonary diagnostic procedure, widely practiced throughout the world. It is a safe, speedy and effective method in the diagnosis of bronchogenic carcinoma. It can be performed on out-patient basis, requiring no or only local anesthesia. It has wide patient acceptance as it is less traumatic and minimally invasive[5]. It can be done anywhere in the thorax under image guidance, especially under CT-guidance[6].

The aim of this study was to find out the efficacy of transthoracic fine needle aspiration cytology and brush in the diagnosis of bronchogenic carcinoma and to compare cytopathological finding of transthoracic FNA and brush cytology with histopathological findings of bronchoscopic specimen and to assess the reliability of 2 cytological techniques.

Seventy (58 males; 12 females; mean age 60.2 years) clinically suspected patients of bronchogenic carcinoma were selected. Patients having any clinical feature suspicious of lung cancer with non-resoluting shadow in the chest x-ray in spite of proper antibiotic treatment, were included.

Transthoracic FNA were done in all cases (under CT-guidance in central and deep lesion- 43 cases; USG guidance in lesions close to chest wall- 17 cases; with the help of chest X'ray- 9 cases). FNA were done by spinal 25 gauze sterile needle, attached with 10 mL sterile syringe. Smears were fixed by 95%ethyl alcohol and stained according to Papanicolaou's stain. Bronchoscopy was possible in 54 cases. Of the remaining cases, bronchoscopy was refused by 7 patients and 9 patients were not suitable for bronchoscopy. Out of 54 patients, biopsy was taken in 43 cases, where endobronchial lesions were seen. Slide was prepared and hematoxillin and eosin stain were done. Brush was taken from 42 patients. Smears preparation and fixation and staining were done similar to those of FNAC.

Cytobrushing were done in 42 cases. Of them, biopsy was possible in 34 cases only (Table I).

No lesion was seen in 11 patients by bronchoscope. Lesions were seen in 43 cases from where biopsy was taken for histopathological examination Table II). The statistical evaluation of the findings of FNAC and brush are shown in Table III.

Complications were minimum in this study. In FNAC, 6 (8.57%) patients developed small pneumothorax, which disappeared spontaneously. Mild hemoptysis occurredin 3 patients (4.29%), which were transient and required no treatment. In cases of brush with biopsy, 5 (11.19%) patients developed hemoptysis, which were self-limited.

As the incidence of bronchogenic carcinoma continues to rise, there is increased need to establish diagnostic protocols that are simple, rapid and reliable. Among these, the cytologic evaluation of bronchial brushings and FNA samples has become widely established. However, the relative value of these two modalities remains the subject of debate. This study was aimed to find out the efficacy of transthoracic FNA and bronchial brush cytology in