Spontaneous Bacterial Peritonitis

Spontaneous bacterial peritonitis (SBP) is often seen in patients with end-stage liver disease, or cirrhosis. Significant ascites is a risk factor. SBP is mostly monomicrobial, which differentiates it from the polymicrobial secondary peritonitis e.g. from a perforated bowel. SBP is often asymptomatic, but some patients may present with a change in mental status or abdominal pain. Diagnosis is made via paracentesis that reveals a PMN count >250/mm³. Management involves 3rd generation cephalosporins, albumin, and antibiotic prophylaxis.



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Characteristics

Cirrhosis
C-roses-on-liver
Spontaneous bacterial peritonitis is a life-threatening complication for cirrhosis patients. It occurs due to bacterial translocation from the gut lumen to extraintestinal sites via mesenteric lymph nodes to the blood. Other contributing mechanisms include impaired gut motility, decreased opsonic activity, and alteration of local immune defenses.

Ascites
Ascites Iced-tea
Ascites, or peritoneal effusion, is fluid accumulation in the peritoneum. This can occur from liver disease or other diseases like Budd-Chiari syndrome or heart failure. SBP is an acute bacterial infection of ascitic fluid.

Monomicrobial
Monkey-microbe
99% of SBP cases are monomicrobial in origin. Gram-negative organisms are involved in 75% of cases. E. coli is the most common, but Klebsiella, Proteus spp., Enterococcus, and Pseudomonas are also reported. This differentiates SBP from secondary peritonitis in which the infection is
usually polymicrobial. Secondary peritonitis can occur from a bowel perforation, for example.

Clinical Features

Often Asymptomatic
Thumbs-up
1/3 of SBP cases are asymptomatic. However, patients may present with mild-moderate fever and chills.

Change in Mental Status
Delta Halo
An acute change in mental status is a harbinger of SBP in cirrhosis patients.

Abdominal Pain
Abdominal Pain-bolts
Abdominal pain is another common symptom seen in patients. Other findings may include diarrhea, ileus, worsening of encephalopathy, and renal failure.

Diagnosis

Paracentesis
Centesis-incense
Paracentesis should be obtained in patients suspected to have SBP. This is important for determining etiology. Early diagnosis reduces mortality significantly from 90% to below 20%.

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PMN >250/mm³

Polly-Morphing-Nucleus with Greater-than (250) Trailer

A polymorphonuclear white blood cell (PMN) count > 250/mm³ along with a positive ascitic fluid bacterial culture and no proven surgically treatable source of infection (e.g. abscess) is diagnostic of SBP.

Management

3rd Generation Cephalosporin

(3) Tree Chef-spore-head

Empiric antibiotics are started immediately upon suspicion or confirmation of SBP due to its high mortality. A 3rd generation cephalosporin (e.g. cefotaxime) is recommended due to its safety profile.

Albumin

Album-man

Albumin helps reduce mortality in SBP patients with hepatorenal syndrome. Albumin helps maintain vascular endothelium and preserve intravascular volume. Patients with >5 liters of ascitic fluid, total bilirubin >4 mg/dL, BUN >30 mg/dL, and creatinine >1 mg/dL may be good candidates.

Antibiotic Prophylaxis

ABX-guy with Purple-axes

Antibiotic prophylaxis should be initiated in patients with a history of spontaneous bacterial peritonitis due to its high risk (40-70%) of relapse within 12 months. Norfloxacin has shown to be effective. Trimethoprim-sulfamethoxazole is another option. This course of action carries with it an increased risk of antimicrobial resistance and thus should be initiated with care. Other therapies include discontinuing beta blockers and diuretics.

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