Peritoneal Fluid Appearance Does Not Aid ED Physicians' Ability to Rule out Spontaneous Bacterial Peritonitis in Ascites Patients Receiving ED Paracentesis

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Introduction
If clinical features could reliably be used to diagnose spontaneous bacterial peritonitis (SBP), laboratory analysis of the fluid might be unnecessary in low suspicion cases. Previous studies have demonstrated that physician clinical suspicion alone cannot reliably predict which patients with ascites have SBP, but no previous study included fluid appearance in the clinical assessment. Fluid appearance alone has been reported to be a sensitive but non-specific marker of SBP.

Methods
Design: Prospective, observational

Patients/setting: ED patients with ascites undergoing paracentesis at three academic facilities: Community Regional Medical Center in Fresno, CA, Wishard Health Services in Indianapolis, IN, and Texas Tech University Health Sciences Center in El Paso, TX.

Data collection: After performing the history, physical examination, and paracentesis (but prior to laboratory analysis), the enrolling physician recorded
1) the clinical suspicion of SBP ("none", "low", "moderate", or "high")
2) ascites appearance ("clear", "hazy", "cloudy", or "bloody")

Definitions:
SBP was defined as an ANC >250 cells/mm3, or culture pathogen growth.

Definition of physician assessments:
Fluid appearance
"Clear" = negative for SBP
"Hazy", "cloudy", or "bloody" = positive for SBP

Clinical suspicion of SBP
"None" or "low" = negative for SBP
"Moderate" or "high" = positive for SBP

Outcome measures: sensitivity and specificity of 1) physician assessment of peritoneal fluid appearance and 2) physician clinical suspicion for SBP were calculated using 95% confidence intervals

Results
348 cases of ED paracentesis enrolled by 106 different physicians. SBP diagnosed in 43 (12%) cases.

- 18 of 43 (42%) were assessed as “medium” or “high” clinical suspicion for SBP by the treating physician
- 25 of 43 (58%) were assessed as “none” or “low” suspicion for SBP. Three of these patients died during their hospitalization due to complications from SBP

Objective
We sought to determine the sensitivity and specificity of physician clinical impression, coupled with an assessment of fluid appearance, in the diagnosis of SBP.

Limitations
33 patients excluded due to incomplete data – only one of these patients had SBP
82% of cases enrolled by resident physicians. They were encouraged to get faculty input for assessment of each case.
16% of all cases, and 14% of missed SBP cases were enrolled by faculty physicians.
Assessment was done prior to paracentesis. Vital signs abnormalities later in ED course may have changed physician clinical suspicion for SBP

Conclusion
Physician clinical impression, which included an assessment of fluid appearance, had poor sensitivity for the detection of SBP and cannot be used to exclude the diagnosis. Routine laboratory fluid analysis is indicated after ED paracentesis, even in patients considered to be low suspicion for SBP.