Peritoneal Dialysis Peritonitis: The Need To Knows

- The incidence of peritonitis in the SMH PD program is around 1:40 patient-months, and there are approximately 85 patients in the program.

- Typical presentation is with abdominal pain (anything from mild discomfort to severe pain) and/or cloudy drained PD fluid
    - However, PD patients can have abdominal pain from other causes (e.g., constipation) or cloudy fluid from other causes (e.g., chyle)
    - Only about 50% of patients with peritonitis will have fever

- **Any PD patient presenting with abdominal discomfort/pain and/or fever should have PD fluid analysis performed**

- Please page the nephrology on-call senior (second-on-call), who will instruct the PD nurse (A nurse assigned on 8 cardinal south ext 5097) who is qualified to sample the fluid, and subsequently to be involved to administer INTRAPERITONEAL antibiotics and organize admission to nephrology , if necessary **(please page them with results to ensure continuity of care).**

- If the presentation is typical for PD peritonitis, and the effluent is obviously cloudy, the nephrology senior may elect to instill the intraperitoneal antibiotics before the results of the cell count return

- Peritoneal fluid leukocytosis is responsible for the cloudy fluid in PD peritonitis
    - PD WBC count >100 non-erythroids and >50% neutrophils confirms the diagnosis of PD peritonitis
    - "Typical" PD fluid cell count in peritonitis is 600-6,000 non-erythroids, with >90% neutrophils
    - If the patient has stopped doing PD for a day or two for other reasons (e.g., concurrent illness), the effluent may be hazy or cloudy, but if cell count is not >300 and is monocytic and not neutrophil-predominant it is not necessarily indicative of PD peritonitis; make sure other concurrent illnesses are also addressed

- Fluid should be sent to the lab for:
    - Cell count
    - Gram stain (see below)
    - Culture and sensitivity

- Despite having a gram stain, empiric INTRAPERITONEAL antibiotic therapy is started with coverage for BOTH gram positive and gram-negative organisms pending identification of the bacterium. We usually use ancef or vanco, ceftazidime or tobra.

- The time to the start of antibiotic therapy is important: every hour in delay of therapy is associated with about a 5% increased chance of death or PD catheter removal. Ideally antibiotics should be administered after the PD effluent has been sampled for cell count and culture

- Commercial PD fluid uses lactate as the buffer, and in the stable PD patient the lactate is metabolized as it is being absorbed from the fluid
    - However, if a PD patient is sick, there may be impairment in lactate metabolism, and the serum lactate may be mildly elevated, typically 2-3 mmol/L
    - This does not necessarily imply that the patient has organ/gut ischemia

- Routine abdominal imaging is not indicated, unless there is a suspicion of a surgical abdomen or specific intra-abdominal pathology, or the patient has systemic hemodynamic compromise

- Air under the diaphragm on an abdominal flat plat x-ray does not necessarily imply a ruptured viscus (in an otherwise well patient); if the exchanges are being done incorrectly, air from the tubing can enter the peritoneal cavity (and cause pain)

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