1-Minute Pearls/Pitfalls for the Clinician

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Keywords: Peritoneal dialysis, Dialysis, Peritonitis, Hepatitis B, IVIG

https://doi.org/10.56305/001c.77554

Journal of Brown Hospital Medicine

Vol. 2, Issue 3, 2023

QUESTION 1: DOES THIS PATIENT HAVE PERITONEAL DIALYSIS-CATHETER ASSOCIATED PERITONITIS?

A 56-year-old male with a history of Focal sclerosing glomerulonephritis who was recently started on Automated Peritoneal dialysis (APD) presented with low-grade fevers and vague abdominal pain. He denied having associated vomiting or diarrhea. He also reported no change in the color of the dialysate. Vitals: Afebrile, 68/min, Blood pressure 121/56mmHg, Respiratory rate 15/min. Exam: Abdomen: Not distended, PD catheter in situ, mild diffuse tenderness, no guarding but with hypoactive bowel sounds. Labs: WBC: 5.9, Hb; 9.1gm%, Platelet count: 201,000. Serum creatinine 4.9. Peritoneal fluid: 94 cells with 56% neutrophils. Culture results are pending. How will you proceed?

A: PD catheter-related peritonitis is due to intra or pericatheter contamination with pathogens. Rarely it may be due to visceral contamination or hematogenous spread of bacteria. Most cases are due to bacterial infections; rarely, fungi (candida species) are the culprit. Patients on APD may not notice a change in color or cloudiness of effluent of exchanges since APD uses a cycler to perform several overnight exchanges that drain into the toilet, sink, or bathtub while the patient sleeps, rather than into a bag as in Continuous Ambulatory Peritoneal Dialysis.[1] Diagnostic criteria include two of the following:

1. Consistent clinical features (abdominal pain and/or cloudy effluent).
2. Peritoneal fluid white count is greater than 100 cells/mm3 (or 0.1 x 10^9/L after a dwell time of at least two hours), and the percentage of neutrophils is greater than 50%. (Fluid white count of >100 cells/mm^3, not >250 cells/mm^3 as in cases of spontaneous bacterial peritonitis)
3. Positive effluent culture.

Based on the criteria, this patient meets the criteria of PD catheter-associated peritonitis. In patients on automated peritoneal dialysis (APD), a presumptive diagnosis may be made in the presence of greater than 50 percent polymorphonuclear cells (PMNs), independent of the absolute white cell count. The total white cell count is often low in APD patients with peritonitis because of the rapid exchanges and short dwell times.

Treatment involves the use of broad-spectrum antibiotics to cover gram-positive and gram-negative pathogens. The antibiotic regimen is adjusted as per culture data. In the absence of clinical features of sepsis, intraperitoneal antibiotics are preferred to systemic antibiotics. The duration of treatment is 2-3 weeks. The routine addition of antifungal prophylaxis to the antibiotic regimen is variable. Indications for removal of PD catheter included lack of clinical response after 48 hours of treatment, recurrent episodes, fungal peritonitis, mycobacterial peritonitis, and peritonitis in the setting of other intraabdominal infections.[2,3]

QUESTION 2: SHOULD YOU TEST PATIENTS FOR HEPATITIS B PRIOR TO GIVING INTRAVENOUS IMMUNOGLOBULIN (IVIG)?

A 42-year-old man with a history of recently diagnosed autoimmune hemolytic anemia (AIHA) presented for evaluation on account of worsening fatigue, shortness of breath. Laboratory data indicated recurrence of hemolysis –hemoglobin of 4.1mg%, low haptoglobin level, increased reticulocyte index, and LDH levels. During his most recent episode of hemolysis, which occurred two months prior to his presentation, he was given doses of IVIG. He is transfused and started again on IVIG. There is consideration for the use of Rituximab. His QuantiFERON gold is negative, but his hepatitis B screen showed evidence of anti-HBc. The patient denied prior history of hepatitis B or any high-risk behaviors. His recent blood products were appropriately screened for HIV and Hepatitis. What are the next steps?

A: Rituximab may cause reactivation of hepatitis B virus (HBV). The presence of hepatitis core antibodies (anti-HBc) is a contraindication to its use in the absence of anti-virals for managing chronic hepatitis. IVIG infusions have been associated with the passive transfer of hepatitis B antibodies to recipients. This passive transfer has led to misinterpretation of results and denial of some much needed immunomodulating medications or inappropriate use of anti-viral therapy.[4,5]

Studies have shown that in such cases of passive transfer hepatitis B antibodies the positive serologies may last for about 11 weeks after the last dose of IVIG.[6] In this case, a negative Hepatitis B DNA (viral load) and normal transaminases, although assuring, do not exclude chronic hepatitis. In this case, the results should be repeated three months

after the last dose of IVIG to exclude a passive transfer. In cases where samples of IVIG product given are available, these should be tested for hepatitis B serologies. Ideally, all patients should have a hepatitis panel done before receiving the initial dose of IVIG.

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DISCLOSURES/CONFLICTS OF INTEREST

The author has no conflicts of interest to disclose.

Submitted: April 18, 2023 EDT, Accepted: May 16, 2023 EDT

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