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Two More Cases of Chemical Peritonitis After Intraperitoneal Vancomycin

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- RC: Conception and drafting of the article.
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Dear editor,

In June 2021, Silvano *et al* published at your journal four cases of chemical peritonitis associated with intraperitoneal vancomycin (IPV) that occurred between May and June 2019.[1] We would like to report two more cases of chemical peritonitis associated to IPV from the same label, which occurred simultaneously at our peritoneal dialysis (PD) unit in April 2019. Table 1 shows effluent characteristics evolution after peritonitis diagnosis.

Case 1: 68-year-old woman, with autosomal dominant polycystic disease, on PD for the last 5 months (without icodextrin). She had a history of cloudy effluent secondary to lercanidipine a few months before and developed a peritonitis secondary to *Streptococcus mitis* a month before. On day 1, she presented with abdominal pain and cloudy effluent, that met peritonitis criteria. IPV (2 g), intraperitoneal ceftazidime and oral fluconazole were started. *Streptococcus gordonii* was isolated in dialysis fluid and therefore ceftazidime was stopped. Due to some loss of ultrafiltration (UF), her PD prescription went from three 1.5% glucose exchanges to two 1.5% and one 2.3% glucose, with antibiotics given in the first 1.5% exchange. In the next days, she significantly improved, and dialysis fluid became clear with only a few cells. On day 12, four hours after the administration of IPV, she developed abdominal pain and diarrhea. She returned to PD department where we found a cloudy effluent. Cell count had 1804 cells/ul with 52% polymorphonuclear neutrophils (PMN) and 1% eosinophils (Eo). She stopped vancomycin, symptoms ceased and the effluent became clear. She returned to her previous PD prescription.

Case 2: 75-year-old male patient with hypertension-related kidney failure, on PD for the last 9 months (including icodextrin). He was on IPV (same brand and lot) to treat a peritonitis (no agent found) with a very good clinical evolution. At day 12, effluent became cloudy a few hours after IPV administration. The effluent had 3468 cells/ul with 80% PMN and 1% Eo but three days after cessation of vancomycin, there were 70 cells, with 2% PMN, 80% monocytes and 3% Eo. An exhaustive investigation was conducted to exclude other peritonitis and abdominal causes. After cessation of vancomycin, the effluent became clear and the patient remained without symptoms.

UF was preserved during IPV-associated peritonitis and after stopping vancomycin.

Discussion: Vancomycin formulations can include about 5%-11% of impurities and the varying quantity of impurities in a certain lot may determine whether inflammatory reaction occurs.[2] IPV-associated peritonitis is rare, but the incidence was described as high as 23%.[3] The main drawback of IPV-associated peritonitis is when this diagnosis is missed, leading to unnecessary antibiotic

Table 1

Effluent characteristics evolution after peritonitis diagnosis.

Patient	First effluent cells count (Day 1)	First effluent cultures (Day 1)	Second effluent cells count (Day 3)	Third effluent cells count (Day 12)	Second effluent cultures (Day 12)	Effluent cells count after stopping vancomycin (Day 15)
1	1242 cells (PMN 59%)	*Streptococcus gordinni*	49 cells (PMN 5%)	1804 cells (PMN 52%)	Negative	46 cells (PMN 1%)
2	1068 cells (PMN 55%)	Negative	83 cells (PMN 6%)	3468 cells (PMN 80%)	Negative	70 cells (PMN 2%)

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administration and inappropriate PD catheter removal.[4,5] In fact, IPV-associated peritonitis is a very challenging diagnosis. A high degree of suspicion is needed, and other peritoneal inflammatory causes should be excluded. The temporal relation between IPV administration and symptoms in a patient who was recovering well from a peritonitis are important clues for diagnosis, and in our circumstance the occurrence of two simultaneous cases highly strengthened the evidence. The two cases were reported to INFARMED. We would like to suggest an open channel between all PD units in order to communicate these cases more easily to avoid potential cases in other units by reporting suspicious lots and therefore improve patient care.

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