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LERCANIDIPIN CHYLOUS PERITONITIS

(Peritonite chyleuse secondaire a lercanidipine)

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Résumé

Nous rapportons un cas de péritonite chyleuse (PC) médicamenteuse secondaire à la lercanidipine survenant chez un patient en dialyse péritonéale continue ambulatoire (DPCA). Il s'agit d'un homme de 22 ans ayant une insuffisance rénale chronique sur néphropathie indéterminée traitée par DPCA. Le patient a présenté un liquide de drainage trouble au démarrage de la dialyse péritonéale (DP). L'arrêt de la lercanidipine a permis un éclaircissement du dialysat effluent sans récidive.

La PC médicamenteuse secondaire à la lercanidipine est une complication rare en DP. C'est une forme bénigne de péritonite non infectieuse qui prête souvent à confusion avec les péritonites infectieuses. Les causes les plus fréquentes des PC sont infectieuses, obstructives et les néoplasies abdominales.

Dans cet article nous discutons les étiologies des PC, de la physiopathologie et de la conduite diagnostique à tenir devant une PC secondaire à la lercanidipine.

Mots clés : lercanidipine, inhibiteur calcique, péritonite chyleuse

Abstract

We report a case of lercanidipin-induced chylous peritonitis (CP) occurring in a patient undergoing continuous ambulatory peritoneal dialysis (CAPD), a 22-year-old male with chronic renal failure with indeterminate nephropathy.. The patient presented a turbid drainage fluid at the start of peritoneal dialysis (PD). The chyloperitoneum resolved after stopping lercanidipin without recurrence.

Lercanidipin induced-chyloperitoneum is a rare complication in PD. It is a benign form of non-infectious peritonitis that can be confused with an infectious peritonitis. The most common causes of CP are infectious, obstructive and abdominal malignancy.

This paper discusses the possible causes of CP, the physiopathology and the management of lercanidipin-induced chyloperitoneum.

Keywords : Lercanidipin, chylous peritonitis, calcium inhibitor

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INTRODUCTION

Chylous peritonitis (CP) is a complication rarely seen in peritoneal dialysis (PD) patients [1,2]. It can be infectious or non-infectious. Medicated CP is a mild form of non-infectious peritonitis. It is often confused with infectious peritonitis. The most incriminated drugs are cefalotin, cefazolin, gentamycin, chloramphenicol, thrombotic agents, vancomycin and calcium channel blockers, mainly dihydropyridine and more rarely non-dihydropyridine [3,4]. Secondary CP with calcium channel blockers was first described in 1993 by Yoshimoto who reported 5 cases in patients treated with manidipine [5]. For third-generation lipophilic dihydropiridine calcic inhibitors, including lercanidipine, the occurrence of CP has been less described.
This article reports on a clinical case of CP in a patient treated with lercanidipine.

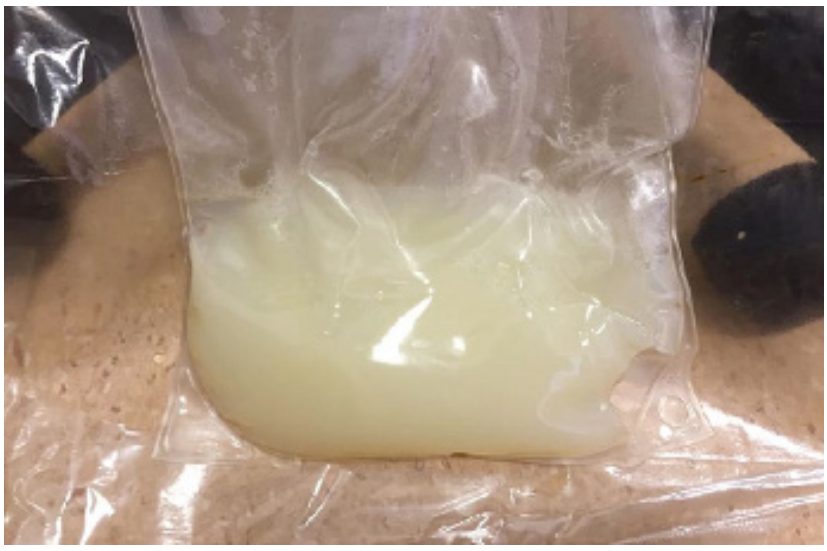
CLINICAL CASE FEPORT

Mr JA, was 22 years old, with arterial hypertension treated with bisoprolol 1.25 mg / day, Urapidil 60 mg / day, lercanidipine 30 mg / day and rilmenidine 2 mg / day. It was addressed to nephrology department for stage 5 chronic renal disease due to indeterminate nephropathy. Initially he was on hemodialysis and had a non-traumatic laparoscopic impantation of a Tenckhoff-type PD catheter on January 28, 2016. He started continuous ambulatory dialysis (CAPD) on February 25, 2016. The first drainage fluid was lactescent without other clinical signs. The patient was apyretic. He had no abdominal pain and the cytobacteriological examination of the fluid (CBE) was negative. The evolution was spontaneously favorable with a lightening of the liquid (Fig 1). One month later, the patient recurs the same aspect of the liquid without other accompanying signs. An etiological survey was started. On clinical examination the patient had no fever or abdominal pain. The general health status was preserved. In biology: There was no inflammatory syndrome, liver function was normal, lipase was three times normal, Quantiferon tb Gold was negative. Hypertriglyceridemia at 3.18 mmol / l was found. The CBE of the effluent dialysate liquid was negative. Triglyceride level in the effluent dialysate was 1.42 mmol / l. A thoraco abdominal pelvic CT did not show any particular abnormalities including normal liver and pancreas. A drug etiology seemed the most likely. Lercanidipine was stopped with lightening of the liquid without recurrence.

DISCUSSION

Chylous peritonitie is secondary to an alteration or obstruction of the abdominal lymphatic system causing a passage of lymph into the abdominal cavity. The most common causes are abdominal neoplasia, cirrhosis of the liver, constrictive pancreatitis, pericarditis, sarcoidosis. The predominant infectious causes are tuberculosis and filariasis, especially in developing countries [6]. Traumatic causes including the traumatic insertion of the PD catheter, which can lead to an alteration of the lymphatic canal or one of its collaterals, remains a rare etiology and can complicate 0.5% of the catheter implantation [7]. Nephrotic syndrome can also be associated with CP and even chylothorax [6, 8].

Medicated PC is a rare entity. It was described for the first time in 1993 with manidipine, then in 1998 in a second study. The latter identified 251 patients with CAPD, of which 0.6% developed a secondary CP with nisoldipine, 42% secondary to manidipine and in 100%



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of cases with benidipine. [9].

ICs are calcium channel blockers used since 1980 as antihypertensive agents. These molecules modify peritoneal function by increasing the clearance of the peritoneal membrane [10], decreasing glucose uptake [11,12] and decreasing ultrafiltration [5,11]. The CIs that have been most described for having this effect are diltiazem and verapamil. In addition, ICs also have a specific effect on the lymphatic and gastroenterological vascular system that may explain the occurrence of CPs with these molecules [13].
Lercanidipine is a new, vasoselective lipophilic IC. It is used more and more because of its better tolerance including a lower frequency of edema of the lower limbs. It is responsible for systemic vasodilatation by selectively blocking the L-type calcium channels located at the cell membranes. This action would be exerted on the smooth muscle cells of the gastrointestinal system which could explain the diarrhea as undesirable effect of this molecule, on the smooth muscle cells of the blood vessels causing an increase of ultrafiltration and 'a drop in blood pressure and smooth muscle cells of the lymphatic vessels explaining the occurrence of PC [14]. The ratio of CP occurrence in patients taking lercanidipine varies from 13 to 57% [13,15].

The cloudy «milky» appearance of the effluent liquid would be related to an increase in TG in the effluent dialysate. This finding has not been confirmed in all studies. The mechanism of this increase remains incompletely understood. The TG level defining CP in the effluent dialysate was set at 110 mg / dl for some authors (1.24 mmol / l) [16] and 200 mg / dl (2.26 mmol / l) for others [17]. In our observation, the patient had a TG level in the effluent dialysate at 1.42 mmol / l.
Some authors have found that patients with PC secondary to lercanidipine have a peritoneal membrane hyperpermeable type which could lead to the accumulation of lercanidipine in the peritoneal cavity and decrease lymphatic reabsorption [18, 19].
In addition, the presence of hypertriglyceridemia seems to favor the occurrence of CP in these patients. This hypertriglyceridemia may interact with the pharmacokinetics of lercanidipine [14]. This is the case of our patient who had a hypertryglyceridemia at 3.18 mmol. However the dose of lercanidipine was not incriminated in the occurrence of CP in the studies. Our patient was under 30 mg of lercanidipine, which is a significant dose.
The incidence of secondary CPs with lercanidipine increased from 22.5% in Japan to 13% in Turkey, suggesting that there is indeed a genetic factor that would influence its occurrence [13,20]. This difference in incidence is even seen in patients of the same ethnicity. This could be explained by the polymorphism of the genes encoding the calcium channels.

The clinical picture is most often dominated by a turbid appearance of the peritoneal fluid without other clinical signs, especially those suggestive of infectious peritonitis or intra-abdominal neoplasia. However, the diagnosis of medical CP remains a diagnosis of retrospective elimination. In our clinical case, the patient had an exploration by abdominopelvic tomography to eliminate an obstructive or neoplastic cause before incriminating lercanidipine. Stopping lercanidipine allows rapid lightening of the drainage fluid and this has been the case in our patient.

CONCLUSION

Aseptic chylous peritonitis secondary to lercanidipine is a non-infectious cause of peritoneal fluid abnormality. Its occurrence seems to be favored by hypertriglyceridemia, a genetic predisposition and by the pharmacological properties of lercanidipine. Its recognition makes it possible to adapt a particular therapeutic behavior and to avoid an abusive antibotherapy prescription. In view of the other more serious etiologies of chylous peritonitis, before linking chylous peritonitis to a drug cause, it is important to eliminate an abdominal neoplastic pathology. An abdominal morphological exploration, in this case an abdominal CT scan,is important to perform.

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