



Intestinal Ischemia after the Use of Terlipressin for Variceal Bleeding in a Patient with Primary Biliary Cirrhosis: A Case Report

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Abstract

Primary biliary cirrhosis is a chronic cholestatic liver disease characterized by destruction of small intrahepatic bile ducts, leading to fibrosis and potential cirrhosis through resulting complications. Approximately half of the patients with cirrhosis have gastroesophageal varices and one-third of all patients with varices will develop acute variceal hemorrhage. Vasopressin is a potent vasoconstrictor of both systemic and splanchnic circulation, one of the only vasoactive compounds, which have been approved by regulatory agencies for the treatment of bleeding esophageal varices. Only 3 cases of intestinal ischemia have been reported, with this paper we report a fourth.

Keywords: Primary biliary cirrhosis; Terlipressin; Intestinal ischaemia; Variceal bleeding; Vasopressin

Core Tip

In this paper we present a case of intestinal ischemia after the use of terlipressin in a patient with variceal bleeding secondary to primary biliary cirrhosis. Only 3 cases have been reported previously in the literature

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Introduction

Primary biliary cirrhosis is a chronic cholestatic liver disease characterised by destruction of small intrahepatic bile ducts, leading to fibrosis and potential cirrhosis through resulting complications. The serological hallmark of primary biliary cirrhosis is the antimitochondrial antibody, a highly disease-specific antibody identified in about 95% of patients with primary biliary cirrhosis [1].

Approximately half of the patients with cirrhosis have gastroesophageal varices and one-third of all patients with varices will develop acute variceal hemorrhage, a complication that still carries a mortality of up to 15% to 20% [2].

Vasopressin is a potent vasoconstrictor of both systemic and splanchnic circulation [2], one of the only vasoactive compounds, which have been approved by regulatory agencies for the treatment of bleeding esophageal varices [3]. Terlipressin is a synthetic analogue of vasopressin, which causes vasoconstriction of splanchnic vessels and improves impaired renal function. Terlipressin is associated with a much lower incidence of ischemic complications compared with vasopressin, but it may still cause such problems [4]. The most common side effect is abdominal pain. The overall efficacy of terlipressin in controlling acute variceal hemorrhage is 75% to 80% at 48 hours and of 67% at 5 days [2].

In a review by Krag et al. [5] of several clinical trials which included 1079 patients treated with terlipressin for variceal bleeding (798 patients) or hepatorenal syndrome (281 patients), there were only 2 cases of nonfatal myocardial infarction during treatment with terlipressin in patients with variceal bleeding. Seven patients developed skin reactions. In this review there were only 3 case reports on intestinal ischemia. However we found another by Kim et al which describes severe ischemic bowel necrosis caused by terlipressin in a 46 year old man.

Case Report

Patient is a 37-year-old female with a previous history of primary biliary cirrhosis, diagnosed two years ago (acute upper gastrointestinal bleeding, elevated alkaline phosphatase and antimitochondrial antibodies, no liver biopsy required). After that first episode of variceal bleeding, she presented



Figure 1: Plain abdominal radiography showing an image of stack of coin.



Figure 2: Contrasted CT scan showing irregular and dilated bowel loops.

another three episodes, all treated with variceal banding. She was also treated with beta blocker (propranolol), ursodeoxycholic acid, spironolactone and folic acid.

She complained of fatigue 48 hours prior to admission, and 24 hours later, she presented melena and hematochezia in multiple occasions. She was admitted to our hospital under the care of the gastroenterology department where treatment with terlipressin (2 mg every 4 hours) was initiated. The second day after her arrival, she presented abdominal pain, immediately after her last dose of terlipressin. A consultation to our department was made. Upon examination, she presented with signs of acute abdomen and tachycardia, abdominal radiography revealed a stack of coin image (Figure 1), CT scan revealed bowel loop dilation (Figure 2), and her hemoglobine levels went from 9.8 mg/dL to 6.1 mg/dL in less than 24 hours, she also presented hypoalbuminemia (1.7 g/dL) and hyperbilirubinemia (Total, 3.74 mg/dL; direct 2.57 /dL).

Under the suspicion of acute mesenteric ischemia we decided to perform an exploratory laparotomy, finding small intestine ischemia, with mesenteric pulse and peristalsis and no signs of intestinal necrosis observed (Figure 3). Because of these findings, we decided to close up the abdomen and perform a second look surgery 48 hours later. In the meantime the terlipressin was suspended and she was treated with IV fluids. During those 48 hours endoscopic banding of varices was performed and treatment with a low molecular weight heparin was initiated. Second look surgery was performed, observing a complete remission of intestinal ischemia, she still presented adequate mesenteric pulse and peristalsis (Figure 4). No small bowel resection was necessary.



Figure 3: Small bowel loops with ischemic areas.

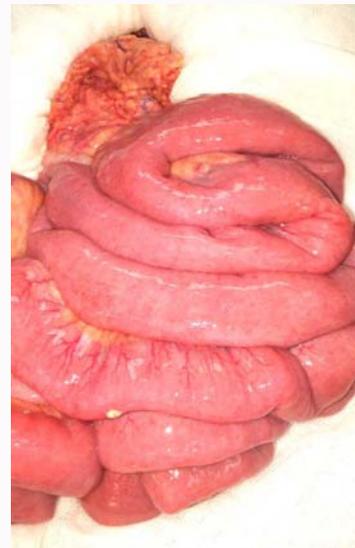


Figure 4: Small bowel at second look surgery.

Discussion

In this case report we present a new case of intestinal ischemia associated with the use of terlipressin, which serves to prove that although it is the initial drug of choice for variceal bleeding whenever available, ischemic complications can still present. The most common ones being skin complications [5] However complications in the gastrointestinal system can prove to be fatal [4]. Whenever a patient is treated with this medication close monitoring is necessary and its use must be suspended immediately if the patient complains of abdominal pain.

According to a study conducted between 2007 and 2008 which included 122 patients with variceal bleeding the combination of variceal banding in the first 12 hours and the use of terlipressin are the best treatment with better hemodynamic stability, less transfusions and no difference in mortality at 48 hours and 30 days [6].

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