Amphotercin Washout of Fungal Peritonitis in Liver Transplant Recipient: A Novel Approach

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Invasive fungal infection (IFI) has been shown to have significant prevalence as well as morbidity and mortality among the organ transplant recipient population. From 2001-2006 a prospective surveillance study consisting of 15 US transplant centers was conducted resulting in screening of 18,000 transplant recipients with identification of 1208 patients with invasive fungal infections. The pertinent results of the study showed an increase in fungal infections during the period of the study with an aim at focusing on the incidence, timing and mortality to improve prevention and treatment (1). From 2002-2012 a retrospective study identified 120 liver transplant recipients of which 13.5% were shown to have fungal infections (2). A review paper found a range in the literature of 5.42% of patients having at least one fungal infection post-transplant (3).

Fungal peritonitis is often difficult to diagnosis early due to lack of symptoms or specific clinical findings. Studies have shown that fungal infections usually occur within the first 3 months of liver transplantation. (1,4). The risk factors identified are multiple including, chronic hyponatremia, poor nutrition, and non-Candida fungal infections after liver transplantation. (5, 6, 7, 8).

An intraoperative discussion with the infectious disease team prior to reperfusion of transplanted liver was held. The patient continued to have significant ascites, requiring paracentesis which showed profound PMNs, signifying what was originally thought to be a secondary bacterial peritonitis with staph epidermidis from the cultures as a morbidity of the liver transplant however, further cultures resulted in identification of Candida species. A meta-analysis of 23 papers noted that abdominal washout with antibiotics compared to saline showed a significant decrease in morbidity (12).

Previous studies have also shown some successes with the use of antifungal medications including anti-fungal medication washout in patients with peritoneal dialysis catheters developing fungal peritonitis and also using antifungals for bladder irrigation in candiduria as well as intra-arterial injections for fungal endophthalmitis (13, 14).

An intraoperative discussion with the infectious disease team lead to the decision to use an amphotericin dwell during abdominal washout.

**Operative Interventions**

**Index Operation: Orthotopic liver transplant with roux en y cholecdojujeunostomy biliary reconstruction and placement of gastrojejunostomy tube-Transfused 2UPRBC, 6FPP, 2 Platelets, 1 Cryo**

**POD 9 Dx Hand assisted laparoscopy for peritonitis, enteroctomy with primary repair, revision reinforcement of jejunoojujeunostomy anastomosis**

**POD 22 Exploratory Laparotomy, saline washout, small bowel resection, removal of gastrojejunostomy tube, liver biopsy, placement of Athera Vac**

**POD 24 Exploratory Laparotomy, saline washout, creation of end ileostomy, Dobhoff tube, Amphotericin B (Dw 30 min), Athera Vac**

**POD 26 Exploratory Laparotomy, Saline washout, Right hemicolectomy, Amphotericin B (Dw 30 min), Abdominal wall closure with Wound Vac placement**

**POD 41 Sacral Wound Debridment**

**POD 103 Diagnostic Laparoscopy, Stamm Gastrojejunostomy feeding tube, EGD**

**POD 174 Exploratory Laparotomy, Ileostomy Takedown with Candida Anatomosis**

**Response to Treatment**

The patient progressed well after resolution of fungal infection and was at acute rejection point. However, now has returned to inpatient status. Invasive fungal infection still carries high morbidity and mortality among organ transplant recipients. Despite advances in techniques, medical care and immunosuppression it is reasonable based on prior studies showing success with abdominal washout and multiple uses of topical antifungal medications to use a multimodal approach with both intravenous medication and topical application of amphotericin B. The transplant patient is at higher of risk of complications due to immunosuppression and often multiple co-morbidities and/or malnutrition. This patient population should be considered for aggressive treatment measures with any complication.

**References**

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