Outcomes of Weekly Fluconazole Antifungal Prophylaxis in Pancreas Transplant Recipients

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INTRODUCTION

- Fungal infections following pancreas transplantation carry significant morbidity and mortality with an estimated incidence of 3-28%.
- The American Society of Transplantation (AST) suggests considering fluconazole prophylaxis in pancreas transplant recipients (PTR) at high-risk of invasive candidiasis (IC).
- However, optimal dosage and duration of prophylaxis is unclear. Weekly fluconazole for prevention of IC has been previously reported in liver and bone marrow transplant recipients. We analyzed outcomes of once weekly fluconazole prophylaxis in PTR.

METHODS

- We retrospectively reviewed all pancreas transplants performed at our institution from January 2017 through September 2021.
- PTR at high-risk for IC were defined per AST criteria as those with enteric drainage, vascular thrombosis, and post-perfusion pancreatitis.
- Patients received weekly oral fluconazole 200 mg for 12 weeks post-transplant for IC prophylaxis.
- We analyzed incidence of breakthrough IC within the first 6 months post-transplant.

Table 1. Antifungal Prophylaxis and Outcomes

Patient number	Post-transplant antifungal prophylaxis	Positive fungal cultures up to 6 months post transplant (from surgical site, intra-abdominal, or blood)	Hospitalizations up to 6 months post transplant (discharge diagnosis)	Post transplant pancreatitis or pancreas allograft thrombosis?	Side effects potentially attributable to fluconazole (elevation of liver enzymes; QTc prolongation)
Patient 1	Fluconazole 200 mg once weekly x12 weeks	None	1 - Allograft pyelonephritis	No	No
Patient 2	Fluconazole 200 mg once weekly x24 weeks**	None	None	No	No
Patient 3	Fluconazole 200 mg once weekly x12 weeks	None	1 - Hematuria, unspecified	No	No
Patient 4	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 5	Fluconazole 200 mg once weekly x12 weeks	None	6 - CMV viremia (Admitted x6 for scheduled cytogam infusions)	No	No
Patient 6	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 7	Fluconazole 200 mg once weekly x12 weeks	None	8 - Intra-abdominal bacterial infection/abscess - Bacterial surgical site wound infection - N/V, diarrhea, intra abdominal fluid collection - N/V, decreased PO intake - N/V, UTI - Nausea, abdominal pain, possible intra abdominal fluid collection - Anemia - N/V	No***	No
Patient 8	Fluconazole 200 mg once weekly x12 weeks.	None	None	No	No
Patient 9	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 10	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 11	Fluconazole 200 mg once weekly x12 weeks	None	2 - Fever of unknown origin - Fever, transplant stent displacement	No	No
Patient 12	Fluconazole 200 mg once weekly X12 weeks	None	3 - Fever, stent displacement, possible UTI - Symptomatic anemia - Acute pancreatitis	Yes, pancreatitis	No
Patient 13	Fluconazole 200 mg once weekly x12 weeks	None	1 - Abdominal pain, unspecified	No	No
Patient 14	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 15	Fluconazole 200 mg weekly x12 weeks	None	1 - Flu	No	No
Patient 16	Fluconazole 200 mg once weekly x6 weeks**	None	None	Yes, pancreatic allograft (SMA) thrombosis	No
Patient 17	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 18	Fluconazole 200 mg once weekly x12 weeks	None	2 - Symptomatic hypotension - Hyperglycemia	No	No
Patient 19	Fluconazole 200 mg once weekly x12 weeks	None	None	No	No
Patient 20	Fluconazole 200 mg once weekly x12 weeks	None	1 - Fever	No	No
Patient 21	Fluconazole 200 mg once weekly x 12 weeks	None	3 - N/V, bacterial intra abdominal abscess/fluid collection. Hypotension d/t polypharmacy - N/V, abdominal pain, AKI, hydronephrosis, SBO - AKI w/u	No	No
Patient 22	Fluconazole 200 mg once weekly x 12 weeks	None	1 - Hyperglycemia,, abdominal pain, hypotension	No	No

**Per review of the medication list and prescription, patients appeared to have received different duration of therapy than the one recommended per protocol
*** Developed thrombosis of transplant renal artery

RESULTS

- We identified a total of 22 PTR, all of whom received simultaneous kidney transplantation from deceased donors.
- Of these, 12/22 (55%) were male and 11/22 (50%) were African American.
- Median age at the time of transplantation was 39 (IQR 34-46).
- The most common indication for transplantation was type 1 diabetes mellitus (17/22, 21%) with associated nephropathy.
- No donor organ cultures were positive for fungi and all pancreas transplants were performed using enteric drainage.
- Notably, one patient developed pancreas allograft thrombosis while another developed pancreatitis.
- No patients required early discontinuation of fluconazole due to intolerance or side effects and none developed breakthrough IC within 6 months post-transplant (Table 1).

CONCLUSIONS

- Weekly fluconazole prophylaxis has not been previously studied in PTR.
- In our cohort, this approach was well tolerated, with no cases of IC at 6 months post-transplantation in patients at high-risk.
- Randomized controlled clinical trials are needed to define the optimal strategy in this population.