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| --- | --- |
| **PROTOCOL TITLE:**  **Kidney and Pancreas Post-Transplant Management Care** | |
| **APPLICABLE FACILITIES:**  EHC EDH EHH EHI EHN EJCH ELTAC ESJH  EUH EUHM EUHS EUOSH EWWH RJV-ERH RJV-ESOP TEC/ESA | |
| **EFFECTIVE DATE:** 4/21/2021 | **ORIGINATION DATE:** 12/09/2003 |

**CATEGORY:** Diagnostic/Therapeutic/Preventive

**LEVEL:** Interdependent

**SCOPE:**

The Emory Transplant Center Kidney and Pancreas Transplant Programs

**PURPOSE:**

* To ensure a consistent, standardized approach to the follow-up assessment and care of recipients of kidney and/or pancreas allografts to allow for early detection and intervention for post-transplant complications and management of comorbidities.
* To ensure compliance with data collection and reporting to regulatory agencies.
* Post-transplant provider visits and laboratory monitoring are conducted at designated intervals and as needed, based on the patient’s clinical condition.

**PROCEDURE:**

During the first 24 months post-transplant, recipients are followed by the program’s surgeons, transplant nephrologists, transplant fellows, advanced practice providers and transplant coordinators in the Emory outpatient transplant clinic based on the schedules shown in tables 1,2 and 3 below.

**Table 1. Bela Based Immunosuppression Lab and Follow-up Schedule- For patients on standard pathway**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Week | Labs | Visits |  | Month | Labs | Visits |
| M1 | Week 1 | 2x | Surgeon |  | M7 | 1x |  |
| Week 2 | 2x |  |  | M8 | 1x |  |
| Week 3 | 1x |  |  | M9 | 1x | Nephrologist (Tele) |
| Week 4 | 1x | Surgeon, Bela |  | M10 | 2x |  |
| M2 | Week 5 | 1x |  |  | M11 | 2x |  |
| Week 6 | 1x |  |  | M12 | 2x | Nephrologist (In person), Bela |
| Week 7 | 1x |  |  | M13 | 2x |  |
| Week 8 | 1x | Surgeon, Bela |  | M14 | 2x |  |
| M3 | Week 9 |  |  |  | M15 | 2x | Nephrologist (Tele) |
| Week 10 | 1x |  |  | M16 | 2x |  |
| Week 11 |  |  |  | M17 | 1x |  |
| Week 12 | 1x | Nephrologist, Bela |  | M18 | 1x | Nephrologist (In person) |
| M4 | Week 13 |  |  |  | M19 | 1x |  |
| Week 14 |  |  |  | M20 | 1x |  |
| Week 15 |  |  |  | M21 | 1x | Local Nephrologist |
| Week 16 | 1x |  |  | M22 | 1x |  |
| M5 |  | 1x |  |  | M23 | 1x |  |
| M6 |  | 1x | Nephrologist (In person), Bela |  | M24 | 1x | APP (In person) |

**Table 2. TAC Based Immunosuppression Lab and Follow-up Schedule-For patients on Standard Pathway**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Week | Labs | Visits |  | Month | Labs | Visits |
| M1 | Week 1 | 2x | Surgeon |  | M7 | 1x |  |
| Week 2 | 2x |  |  | M8 | 1x |  |
| Week 3 | 1x |  |  | M9 | 1x | Nephrologist (Tele) |
| Week 4 | 1x | Surgeon |  | M10 | 1x |  |
| M2 | Week 5 | 1x |  |  | M11 | 1x |  |
| Week 6 | 1x |  |  | M12 | 1x | Nephrologist (In person) |
| Week 7 | 1x |  |  | M13 | 1x |  |
| Week 8 | 1x | Surgeon |  | M14 | 1x |  |
| M3 | Week 9 |  |  |  | M15 | 1x | Local Nephrologist |
| Week 10 | 1x |  |  | M16 | 1x |  |
| Week 11 |  |  |  | M17 | 1x |  |
| Week 12 | 1x | Nephrologist |  | M18 | 1x | Nephrologist (In person) |
| M4 | Week 13 |  |  |  | M19 | 1x |  |
| Week 14 |  |  |  | M20 | 1x |  |
| Week 15 |  |  |  | M21 | 1x | Local Nephrologist |
| Week 16 | 1x |  |  | M22 | 1x |  |
| M5 |  | 1x |  |  | M23 | 1x |  |
| M6 |  | 1x | Nephrologist (In person) |  | M24 | 1x | APP (In Person) |

**Table 3. High-Risk Patient Follow-up Schedule (such as DGF)**

|  |  |  |  |
| --- | --- | --- | --- |
| Month | Week | Labs | Visits |
| M1 | Week 1 | 2x | Surgeon |
| Week 2 | 2x | Surgeon |
| Week 3 | 2x |  |
| Week 4 | 2x | Surgeon, Bela |
| M2 | Week 5 | 1x |  |
| Week 6 | 1x | If needed - Surgeon (Tele or In Person) |
| Week 7 | 1x |  |
| Week 8 | 1x | Surgeon, Bela |

1. More frequent clinic and laboratory monitoring may be ordered at the discretion of the medical team.
2. By the 24 month post-transplant anniversary, recipients are instructed to be seen at least quarterly by their local community provider with visits at Emory at months 30 and 36.
3. Labs for long term patients (24 months and above) who are on standard pathway on tac and bela based regimen outlined below-

\*Tac -q 3 months

\*Bela q month- q 3 months

\*Bela q 2 months- q 2 months

1. Patients are advised to have interval laboratory reports faxed to The Emory Transplant Program when performed by a laboratory facility in the local community. The program reviews outside reports and any adjustments made are conveyed to the patient and the local community provider as indicated.
2. At 3 years post-transplant, patients should be transitioned to routine follow-up with their local nephrologist or primary care provider and all laboratory management is performed by the local provider. Annual transplant anniversary visits are conducted at Emory.
3. Health Maintenance Testing**:** Routine health maintenance and cancer screenings should be obtained based on age, sex and medical guidelines. Patients are educated to coordinate this care with their local primary care provider.
   * 1. **Colonoscopy:** We recommend that patients have a screening colonoscopy per American Gastroenterological Association guidelines
     2. **Mammogram**: We recommend that women have a bilateral mammogram per the American College of Obstetricians and Gynecologists (ACOG) guidelines.
     3. **GYN/PAP**: We recommend that women undergo a gynecologic exam and Pap smear per the ACOG guidelines.
     4. **Dental exam**: Patients are encouraged to have regular follow up with their dentist. Patients found to have high risk for active dental infection will be required to have dental evaluation.
     5. **PSA** should be checked in males per American Urological Association screening guidelines.
     6. **Dermatologic screening:** Patients should have annual skin exam completed by primary care provider or dermatology. Patients with a history of skin cancers should establish with a dermatologist for additional assessment and follow-up.

**Rationale:**

During the first six months following transplantation, kidney and pancreas graft function may be quite labile. Complications resulting from mechanical factors, infections, toxic injuries, or immune mechanisms may occur, though timely intervention will often reverse or ameliorate the injurious effects of these hazards. Approximately 20% of patients will experience an episode of transient dysfunction. Contributing causes may include acute rejection, calcineurin inhibitor nephrotoxicity, or anatomical problems with the transplant.   
  
The majority of rejection episodes occur within the first six months post-transplant. Therefore, the risk of a rejection episode is greatest in the early post-transplant course. After the six month milestone is reached, acute rejection is less common and most often precipitated by infection or inadequate immunosuppression.

Several principles of effective patient management are apparent: 1) immunosuppression should be greatest during the first six months, 2) clinic visits are more frequent to optimize therapeutic interventions, 3) relevant patient data is collected to facilitate clinical decision-making and reporting to regulatory agencies, and 4) therapeutic intervention proceeds in a timely and logical manner.   
  
The achievement of six months of uncomplicated and favorable allograft function represents an important milestone for the transplant recipient. Most patients with kidney and/or pancreas allografts lost to irreversible acute rejection will have incurred a severe rejection episode within this period, and conversely, most recipients who have not experienced an episode of rejection can be expected to have a favorable prognosis.

The management strategy for the period between 6 -12 months is continued vigilance for the occurrence of rejection, with a greater emphasis placed on the long-term consequences of immunosuppression and toxicities related to these therapies. Infection, liver disease, malignancy (especially skin, cervical, and lymphoid neoplasms) and steroid induced complications are all potential hazards. Long term, cardiovascular disease supersedes infection, malignancy, and liver disease as the leading cause of mortality in patients with extended kidney and pancreas allograft function.

**Patient communication with the Kidney and Pancreas Transplant Programs:**

Kidney and pancreas transplant patients are educated extensively during pre-transplant and post-transplant teaching on how and when to communicate with the transplant team. Transplant coordinators are available by phone during office hours. A designated transplant team member is on-call after regular business hours, weekends and holidays.

**Communication with community provider(s):**

Clinic visit notes from provider visits are sent to the community physician/provider of record via the Emory referral management team.

**RELATED POLICIES / PROCEDURES:**

1. Journey to Transplantation: After Your Transplant  
2. Kidney/Pancreas Post Transplant: Immunosuppression Protocol  
3. Kidney/Pancreas Post Transplant: BK Polyoma Protocol  
4. Kidney/Pancreas Post Transplant: Bone Disease Management Protocol  
5. Kidney/Pancreas Post Transplant: Management of Anemia Protocol   
6. Emory Renal Transplant Program Post-transplant Management Protocol (schematic)

**DEFINITIONS:** N/A

**REFERENCES AND SOURCES OF EVIDENCE:**

1. Cohen, D. & Galbraith, C. (2001). General Health Management and Long-Term Care of the Renal Transplant Recipient, *American Journal of Kidney Diseases*, 38 (6), pp S10 - S24.
2. Emory University Hospital Renal and Pancreas Transplant Services Resident’s Manual, 2002-2003.
3. Randhawa, P. (2003). Polyomavirus Infection. In *Immunosuppression and Infection: Opposing Challenges in Solid Organ Transplantation*, American Transplant Congress 2003: The Fourth Joint American Transplant Meeting. CME, [www.webmd.com](http://www.webmd.com).
4. [http://www.gastrojournal.org/article/S0016-5085(08)00232-1/pdf](http://www.gastrojournal.org/article/S0016-5085(08)00232-1/pdf%5Ch)
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**KEY WORDS:**

Kidney and pancreas transplant

Post-transplant management