|  |
| --- |
| **PROTOCOL TITLE:** Kidney and Pancreas Post Transplant: Leukopenia Management |
| **APPLICABLE FACILITIES:**[ ] EHC [ ] EDH [ ] EHH [ ] EHI [ ] EHN [ ] EJCH [ ] ELTAC [x] ESJH[x] EUH [x] EUHM [ ] EUHS [ ] EUOSH [ ] EWWH [ ] RJV-ERH [ ] RJV-ESOP [x] TEC/ESA |
| **EFFECTIVE DATE:**  | **ORIGINATION DATE:** 05/21/2008 |

**CATEGORY:**  Diagnostic/Therapeutic/Preventive Medication Guidelines

**LEVEL:** Independent

**SCOPE:** All transplant program physicians, practitioners and clinical staff members are responsible for compliance with this clinical protocol.

**PURPOSE:** The purpose of the protocol is to provide guidelines for the management of leukopenia post kidney/pancreas transplantation.

Leukopenia is a common occurrence after renal transplantation and in many cases results from immunosuppressive medications and/or viral infections. The underlying etiology of the leukopenia post-transplantation can include:

1. **Immunosuppressive agents:** mycophenolate mofetil (MMF or Cellcept), mycophenolic acid (MPA or Myfortic), azathioprine, sirolimus, thymoglobulin
2. **Anti-infective agents**: valganciclovir, ganciclovir, trimethoprim-sulfamethoxazole, penicillins
3. **Infections**: CMV or any viral infection
4. **Hypersplenism**: especially in liver-kidney transplant recipients

**TARGET PATIENT POPULATIONS:**

Post kidney/pancreas transplant recipients

**PROTOCOL:**

1. Evaluate concomitant medications, especially thymoglobulin, valganciclovir, mycophenolate, sirolimus, or azathioprine.
2. For all WBC <3,000, check differential
3. Rule out CMV viremia via plasma PCR by quantification
4. If patient is on valganciclovir: **Do Not Hold** valganciclovir or reduce dose for leukopenia
5. For ANC between 500 to 1000:
6. Consider mycophenolate dose reduction by 25%
7. Repeat CBC with differential Q 2 weeks
8. For ANC < 500:
9. Reduce mycophenolate by 25 to 50%
10. Administer filgrastim or biosimilar agent; consider dosing as below or per prescribing provider discretion:

|  |  |
| --- | --- |
| Weight < 78kg | Dose 300mcg |
| Weight > 78 kg | Dose 480 mcg |

1. Repeat CBC with differential in 1 week and as clinically indicated there after
2. If new onset ANC < 500 and patient febrile (>38 C), consider admission for further evaluation
3. Reintroduce and/or increase mycophenolate dose when leukopenia is corrected
4. Individualize care for refractory leukopenia

.

**RELATED POLICIES / PROCEDURES:**

Kidney and Pancreas Post-Transplant Management Care

**DEFINITIONS:** N/A

**REFERENCES AND SOURCES OF EVIDENCE:**

1. Marinella MA. Hematologic abnormalities following renal transplantation. *Int Urol Nephrol*. 2010;42(1):151-164. doi:[10.1007/s11255-009-9558-5](https://doi.org/10.1007/s11255-009-9558-5)
2. Brum S, Nolasco F, Sousa J, et al. Leukopenia in kidney transplant patients with the association of valganciclovir and mycophenolate mofetil. *Transplant Proc*. 2008;40(3):752-754. doi:[10.1016/j.transproceed.2008.02.048](https://doi.org/10.1016/j.transproceed.2008.02.048)
3. Yang Y, Yu B, Chen Y. Blood disorders typically associated with renal transplantation. *Front Cell Dev Biol*. 2015;3. doi:[10.3389/fcell.2015.00018](https://doi.org/10.3389/fcell.2015.00018)
4. Ducloux D, Courivaud C, Bamoulid J, et al. Prolonged CD4 T cell lymphopenia increases morbidity and mortality after renal transplantation. *Journal of the American Society of Nephrology: JASN*. 2010;21(5):868-875. doi:[10.1681/ASN.2009090976](https://doi.org/10.1681/ASN.2009090976)

**KEY WORDS:** Leukopenia