

Neutropenia following Kidney Transplant

I. PURPOSE

Identification and treatment plan for neutropenia after receiving a kidney transplant.

II. SETTING

Both inpatient and outpatient

III. POLICY

DEFINITIONS:

Neutropenia based on ANC count/mm³:

Mild: 1000-1500

Moderate: 500-1499

Severe: ANC < 500

Agranulocytosis: < 100

Leukopenia and neutropenia are common after kidney transplant.

Causes:

- Medications: MMF, tacrolimus, SMX, Ganciclovir, valganciclovir, acyclovir, azathioprine, Rituximab.
- Thymoglobulin in the first 2 weeks.
- Other medications: Cephalosporins, vancomycin, Oseltamivir, Semisynthetic penicillin, leflunomide, furosemide, propranolol, ACEI, Dapsone
- Infections: particular attention CMV, and EBV.
- Nutritional deficiency (short gut and malabsorption): vitamin B12, folic acid, copper, ceruloplasmin, methylmalonic acid and homocysteine
 - o In the first 2 weeks after transplant leukopenia is most likely secondary to induction with thymoglobulin and is expected to improve without intervention.
 - o Dapsone can cause severe neutropenia.

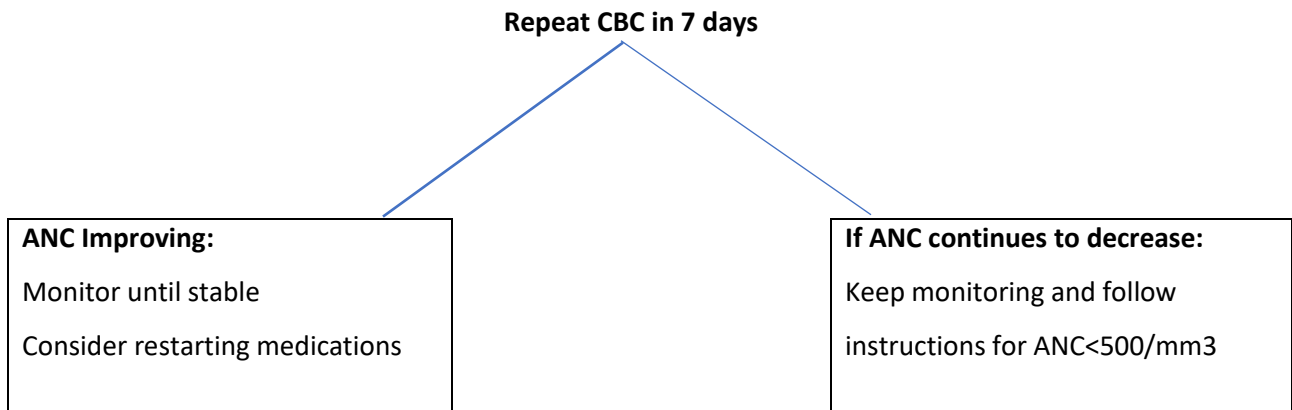
Procedure/Management:

- Admit if unwell or febrile with severe (ANC <500) and moderate neutropenia.
- Screen for viral infections: CMV, EBV viral loads and others based on clinical presentation.
- For patients at high risk of nutritional deficiencies consider checking the above vitamin and trace element levels if neutropenia persists
- ANC <500/mm³
- Check CMV viral load
- GCSF 5mcg/kg SQ for 3-5 days

- If response but neutropenia recurs, or if no response, stop/hold TMP-SMX (consider substituting with alternative in first 6 months: Dapsone or Atovaquone)
- If no response, reduce MMF, Azathioprine dose by 25%-50%
Hold mTORI containing regimens
- Hold valcyte unless CMV viral load positive or if high risk CMV status, monitor CMV viral load
- Repeat CBC 1-2 days after GCSF completion and then 1 week later to assess
For ANC >500/mm³: monitor CBC weekly until neutropenia stabilizes

ANC 500-1000/mm³

- CMV viral load negative:
 - o First 6 months after transplant: replace SMX with: pentamidine, atovaquone, Dapsone if not G6PD deficient.
 - o More than 6 months after transplant: Hold SMX
- Hold valcyte, monitor CMV viral load



If immunosuppressive doses are reduced, monitor DSA and AlloSure closely.

IV. RESPONSIBILITY

Maha Haddad, MD
Pediatric Nephrology

V. REFERENCES

See below

VI. REVIEWED BY

- Lavjay Butani, MD
- Arun Kale, MD
- Stephanie Nguyen, MD
- Gia Oh, MD

- Machi Kaneko, MD

VII. REVIEWED DATE and REVIEW CYCLE:

6/24/2024

References:

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