NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

eGFRsupport: Renal Support : Renal transplant recipients

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Lead Author:	Mark Findlay
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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Electronic Guidelines for Renal Support (eGFRsupport): Renal transplant recipients

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Introduction

Renal transplant recipients are at increased risk of infection, cardiovascular disease, drug interaction, various degrees of renal impairment and transplant rejection. Early discussion with the renal on-call will allow tailored advice and expedite investigation in case of potential rejection.

Assessment / Monitoring

- Clinical history:
  - Ask about adherence to medication, additional new drugs, transplant pain, urine output and weight changes.
- Clinical examination:
  - Review patient observations. Remember pyrexia may be masked.
  - Examine for evidence of infection, transplant pain and assess fluid status
- Investigations:
  - UEs, LFTS, Bone, FBC, CRP
  - If relevant check trough level of ciclosporin or tacrolimus (EDTA tube in the morning before morning medication).
  - Send at least one urine sample for culture, even in the absence of dipstick nitrites or leucocytes

Management

General principles

- Transplant patients should not miss doses of immune suppression unless a decision has been made to withhold drugs e.g. due to sepsis.
- Be aware there are multiple interactions between common acute prescriptions (e.g. antibiotics) and immunosuppression. Check for interaction risk in *all* new prescriptions.

Infection

- Common infections may present atypically in on immunosuppressed patients. All transplant recipients presenting with a fever, nausea or general decline should be screened for infection with a urine dip and MSU, blood culture and CMV/EBV PCR as baseline tests. Further investigations should be guided by the clinical presentation.
- Although community acquired organisms remain more common, Pneumocystis pneumonia may present, even several years, following a transplant. Clinical suspicion should be raised by hypoxia (more marked following exertion), a relatively normal respiratory examination and bilateral infiltrates on CXR. Diagnosis requires induced sputum or BAL and all suspected cases should be discussed with the renal unit
- Urinary infection is common and may present with transplant dysfunction. Urinalysis is not always informative. Send a mid-stream urine for culture in all suspected of UTI.
- In severe sepsis it is usually advisable to increase their steroid, withhold the anti proliferative (MMF/Azathioprine) and monitor, reduce or stop their tacrolimus or ciclosporin.
- Where reduction of immunosuppression is being considered in sepsis all cases must be discussed with the renal unit.

Renal dysfunction

- Acute renal dysfunction in transplant recipients can occur for all the same reasons as those without a transplant. Refer to AKI section.
- Unique considerations include: increased risk of infection, transplant drug toxicity, transplant obstruction, vascular abnormalities and rejection.
- We advise all case of transplant function are assessed as per AKI advice above with the addition of: transplant ultrasound, ideally with vascular doppler, in those with significant (doubling in baseline SCr) or slow to resolve AKI (no improvement within 24 of treatment) and trough drug levels (ciclosporin or tacrolimus)
- We advise all cases of AKI in transplant recipients are discussed with renal to allow rapid organisation of biopsy, if necessary.

Drug therapy/treatment options

Immunosuppression

- With the exception of severe sepsis, immunosuppression should continue uninterrupted during hospitalisation. Reductions must be discussed with the renal on-call.
- If nil by mouth, we advise insertion of an NG tube and continuing enteral dosing unless otherwise contra-indicated.
- If conversion to IV is required discuss the case with a renal pharmacist for advice on dosing and monitoring

Drug	Monitoring	Notes
Prednisolone	Not required	In those on long term steroid there is a risk of hypoadrenalism during cases of physiological stress (e.g. sepsis or surgery). A transient increase in steroid dose (doubling) can limit this, although is rarely required in those on ≥20mg daily.

Tacrolimus	*Monitor trough serum concentration.	Multiple drug interactions exist, most commonly noted following use of macrolide antibiotic (e.g. clarithromycin for LRTI) and antifungals leading to toxic levels. Consider withholding in severe sepsis NBM: when converting to IV give one fifth of total daily dose over 24 hours and monitor levels
Ciclosporin	*Monitor trough serum concentration.	Multiple drug interactions. Consider withholding in severe sepsis NBM: when converting to IV give one third to one half of oral dose as a bolus infusion
Mycophenolate	May cause neutropenia, monitor FBC	An 'antiproliferative'. Withhold in cases of sepsis, review daily. Restart once sepsis improving. Major side effect is GI upset which may necessitate a dose reduction.
Azathioprine	May cause neutropenia, monitor FBC	An 'antiproliferative'. Withhold in cases of sepsis, review daily. Restart once sepsis improving. Risk of severe pancytopenia (and agranulocytosis) if concurrently prescribed with Allopurinol. Avoid this combination completely
Co-trimoxazole	Monitor U&Es	Used prophylactically in first 6 months following acute transplant and in treatment of PJP pneumonia. Risk of hyperkalaemia, hyponatraemia and renal dysfunction. Monitor daily U&Es when on treatment doses.

Box 1 – Common transplant medication considerations

*trough serum concentrations are best checked on a morning sample. The patient must know to withhold their dose of tacrolimus or cyclosporine until their blood sample is taken, then take their usual dose. Results are usually available by late afternoon and dose adjustments made after reviewing the level. Contact the renal-on call for advice on levels.

Other information

Discharge planning

Contact the renal-on call on discharge to ensure appropriately timed follow-up is in place and a clear plan is made to re-instate immune-suppression if alterations were made.