CRIT: Children Receiving Immunosuppressive Therapy

A cross-specialty review of practice at a tertiary children's hospital

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Introduction

- Immunosuppression has become integral to the management of a wide range of childhood illnesses
- Although total numbers of children and young people (CYP) on immunosuppression is unknown, they are thought to be increasing
- Multiple paediatric sub-specialities initiate and monitor different immunosuppressive therapies with anecdotal variation in prescribing and monitoring practices
- Presentations to emergency services for fever or infection-related illness in this cohort locally was also felt to be increasing

Methods

- We undertook a cross-speciality retrospective review of case notes of CYP on immunosuppressive agents
- Data were collected on a representative sample of patients (n=77, total CYP identified = 416)
- Existing speciality/departmental guidance on prescribing, monitoring and surveillance was collected

Results

- 47/77 CYP (61%) are currently prescribed ≥2 agents
- 46 CYP (60%) were not prescribed prophylaxis at any point; for those who were, cotrimoxazole was the most common antimicrobial (n = 28; 90%)
- All CYP had FBC checked with varying frequency (once only – weekly); 14 CYP developed lymphopaenia
- 54 CYP (70%) had past VZV exposure documented or tested
- 7 CYP (9%) attended our centre after chickenpox exposure; 2 required admission for treatment
- 10 CYP (13%) were hospitalized and treated for bacterial infection; none had proven bacteraemia but 2 developed cryptosporidiosis
- Two specialties were able to provide departmental guidance for management of intercurrent infection

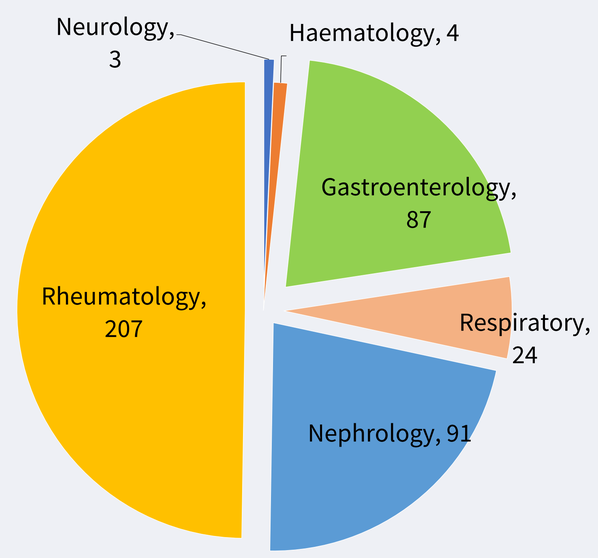
Conclusion

- CYP are prescribed a wide range of immunosuppression with inter-specialty variation in monitoring and prophylaxis
- Departmental protocols are uncommon and hard to find, making out of hours decisions about risk challenging
- Regional immunosuppression guidance may improve the quality of care offered to immunosuppressed children in our region

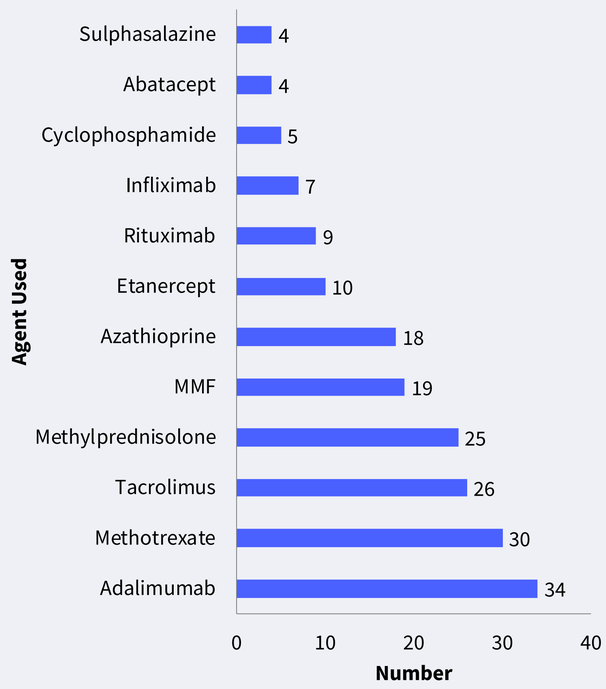
Our definition of *immunosuppressive agents*

- cytotoxic drugs
- biologics / monoclonal antibodies
- *we included CYP on high-dose steroids (e.g.: prednisolone >1mg/kg/week) when on other agents*

Total number of patients identified by parent specialty



Total use of agents, independent of specialty or indication



Summary of case notes reviewed

Parent Speciality	Indication	Agents used	Prophylaxis	Monitoring	Serious infective episodes
Neurology	NMDA-receptor encephalitis	Rituximab + methylprednisolone	Cotrimoxazole in all cases	Frequent FBC and subsets	Nil
	Transverse myelitis	Rituximab + methylprednisolone			
	Opsoclonus-myoclonus	Dexamethasone, cyclophosphamide + azathioprine			
Haematology	Immune thrombocytopenia purpura	Rituximab ± MMF	Nil	Frequent FBC; one patient had B cells checked once	Nil
Gastroenterology	Crohn's disease	Methotrexate/azathioprine ± infliximab/adalimumab	Cotrimoxazole in one patient; infective risk clearly documented	Frequent FBC	One patient with delayed clearance of HHV-6 (under joint care with immunology)
Respiratory	Asthma	Omalimumab	Nil	Nil	Nil
Nephrology	Renal transplant	2 of MMF/tacrolimus/azathioprine + prednisolone; 1 use of alemtuzumab	Cotrimoxazole + acyclovir/valganciclovir (dependant on CMV status)	Frequent FBC; one patient on alemtuzumab had weekly subsets	One patient had hospitalisation and PN requirement due to cryptosporidium infection; three patients are on replacement Ig
	Nephrotic syndrome	Prednisolone + rituximab/MMF/cyclophosphamide	Cotrimoxazole whilst on cyclophosphamide	Regular subsets and Ig profile	One admission with chickenpox needing IV aciclovir
Rheumatology	Juvenile idiopathic arthritis	Adalimumab/infliximab ± methotrexate/MMF/sulphasalazine; all with pulses of methylprednisolone	One patient had isoniazid for 6 months after a positive Quantiferon; nil regular	Frequent FBC and intermittent Ig profiles	Five patients had attendances with chickenpox; two required admission and IV aciclovir