Medication Safety Series: MSS 3
Disease-modifying Anti-Rheumatic Drugs and Immunosuppressants

On Admission:

- Identify any new admissions to the ward that are prescribed a disease-modifying anti-rheumatic drug (DMARD), cytokine modulator or immunosuppressant.

See box opposite for commonly prescribed medications within these classes (not exhaustive).

- Confirm & document on electronic patient record (EPR) the dose, frequency, how long the current medication has been prescribed and the indication.
- Ensure it is prescribed correctly on EPMA system.
- Access and print the relevant shared care guidelines and file in the EPMA patient information file on the ward as a reminder of required monitoring.

!! For methotrexate - add a "significant medication alert" to the EPR.

!! Clarify where patient normally obtains medication & determine where further supplies can be obtained from; document as part of medicines reconciliation on the EPR and as a comment on EPMA. (Some DMARDs such as methotrexate injection and unlicensed products are obtained through third-party suppliers, e.g. Healthcare at Home).

!! For methotrexate - endorse the EPMA prescription "cytotoxic, handle with care"

Methotrexate is ALWAYS given once a week and NEVER given daily. Ensure this is prescribed correctly on the electronic prescribing system and always report prescribing errors via In-phase. Dosage errors can result in serious adverse reactions, including death.

Disease Modifying Anti-rheumatic Drugs (DMARDs)

Sodium Aurothiomalate (GOLD)
Penicillamine
Chloroquine

Conventional DMARDS (cDMARDs, NICE)

Methotrexate
Leflunomide
Hydroxychloroquine
Sulfasalazine

Biological and targeted synthetic DMARDs (aka "Mabs"), e.g.

Abatacept
Adalimumab
Baricitinib
Certolizumab
Denosumab
Etanercept
Filgotinib
Fostamatinib
Golimumab
Infliximab
Rituximab
Sarilumab
Secukinumab
Tocilizumab
Tofacitinib
Ustekinumab
Upadacitinib

(New products regularly approved by NICE)

Immunosuppressants

Azathioprine
Ciclosporin
Tacrolimus
Sirolimus
Mycophenolate

(NB some of these medications can used as part of transplant anti-rejection regime or for disease suppression e.g. for psoriasis, Crohn's or rheumatoid arthritis)

Useful Links

North-East and North Cumbria (DTVF) Guidelines:

https://www.northeastnorthcumbriaformulary.nhs.uk/default.asp

Includes links to shared care for transplants, DMARDs etc.

North Yorkshire & York:

Yorkshire DMARD guidance:
https://www.yorkhospitals.nhs.uk/seecmsfile/?id=1442

(For transplant shared care – access via formulary website of managing Trust)

NEVER prescribe or administer methotrexate daily – it should ALWAYS be a weekly dose.

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During Admission:

- Ensure that any required monitoring tests (e.g. FBC, U+Es, LFTs) that are due are carried out.
- **Medical staff** - review test results against relevant local guidance on DMARD / cytokine modulator / immunosuppressant therapy monitoring (see links above), any necessary actions should be taken and documented on the EPR.
- Inform the GP / usual prescriber / clinic of results.
- Monitor for any adverse side effects or potential interactions with DMARD / cytokine modulators / immunosuppressant & review (medical staff) as necessary.
- If patient develops an infection requiring antibiotics, contact specialist for advice on continuing or withholding the immunosuppressant.
- **Nursing staff** - ensure safe handling of methotrexate.

On Discharge / prolonged leave (once a discharge date is agreed):

- Ensure that any handheld monitoring booklets have been updated to reflect any tests or actions undertaken during admission - or contact relevant monitoring clinic directly.
- Ensure that appointments have been made for future monitoring (where applicable).
- Ensure that monitoring booklet is returned to patient on discharge (where applicable).
- Ensure that GP is informed of any dose changes made during admission.

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Possible Psychiatric Adverse effects (see BNF or SPC for more information / other drugs):

Drug	Potential Side Effects	Drug	Potential Side Effects
Abatacept	Depression, anxiety, sleep disorder including insomnia (uncommon)	Certolizumab	Anxiety, mood disorders (uncommon); suicide attempt, delirium, mental impairment (rare).
Adalimumab	Sleep disturbances, anxiety, mood alterations including depression (common)	Belimumab	Depression, insomnia (common)
Golimumab	Insomnia, depression (common)	Infliximab	Depression, insomnia (common); amnesia, agitation, confusion, somnolence, nervousness (uncommon); apathy (rare).
Rituximab	Agitation, insomnia, anxiety (common); depression, nervousness (uncommon).	Ustekinumab	Depression (uncommon)
Corticosteroids	Insomnia, affective disorders – irritable, euphoric, depression, labile mood, suicidal thoughts. Psychotic reactions – mania, delusions, hallucinations, aggravation of schizophrenia.	Methotrexate	Mood changes. Patients MUST be warned to report immediately the onset of any feature of blood disorders (e.g. sore throat, bruising, mouth ulcers), liver toxicity (e.g. nausea, vomiting, abdominal discomfort, dark urine) and respiratory effects (e.g. shortness of breath)'
Tacrolimus	Insomnia (very common); anxiety symptoms, confusion, disorientation, depression, mood disorders, nightmares, hallucinations (common); psychotic disorder (uncommon)	Sulfasalazine	Insomnia, depression, hallucinations
		Hydroxychloroquine	Nervousness, emotional lability, psychosis
Chloroquine	Emotional disturbances, psychosis, hallucinations, anxiety, personality changes.	Leflunomide	Anxiety (uncommon)