



Good Practice Recommendations for Antifungal Stewardship in Haemato-oncology

Background

Antifungal stewardship (AFS) is an important component of a comprehensive antimicrobial stewardship programme. Good practice recommendations for the treatment of Candidaemia (in non-solid organ transplant recipients, non-neutropenic, non-haemato-oncology adult patients) have previously been developed by SAPG <https://www.sapg.scot/media/5442/20220110-gprs-for-treatment-of-candidaemia-and-use-of-antifungal-agents.pdf>

Invasive fungal infection (IFI) remains an important diagnostic and therapeutic challenge in haemato-oncology and is associated with significant morbidity and mortality. Utilisation of antifungal agents in the prevention and treatment of IFI represents a significant health and financial burden. Antifungal usage trends mirror the number of patients 'at-risk' for IFI. These 'at risk' populations and clinical specialties associated with higher rates of antifungal usage include:

- Haemato-oncology patients receiving myeloablative chemotherapy
- Bone marrow transplant patients (due to significant immunosuppression secondary to conditioning and anti-rejection drugs)
- Solid organ transplant patients (due to suppressed immune system from post-transplant drugs)

The principal goals of AFS are to optimise the utilisation of antifungal agents to improve clinical outcome and to minimise unnecessary use to limit emergence of resistance and reduce antifungal-related toxicity.

Key components of AFS include: guidelines and education; surveillance of antifungal use and resistance; quality improvement interventions.

Antifungal guidelines are underpinned by surveillance of local epidemiology (including IFI resistance) and surveillance of systemic anti-fungal use. Surveillance also provides both evidence of the impact and efficacy of stewardship strategies and interventions and informs opportunities for quality improvement.

These good practice recommendations for AFS in haemato-oncology in NHS Scotland have been developed by a multi-professional AFS group which includes clinical experts from the regional cancer networks to provide practical advice for Antimicrobial Management Teams and infection specialists.

The aims of the Good Practice Recommendations are to:

- **Support** clinical management of IFI
- **Reduce** emergence/ development of antifungal resistance
- **Minimise** antifungal-associated toxicity through optimising dosage and duration
- **Promote** appropriate and judicious use of antifungal agents
- **Protect** and preserve antifungal agents for the future

Good Practice Recommendations for antifungal stewardship in haemato-oncology

1. Antifungal Stewardship in the context of the wider AMS programme

- a. **Antifungal stewardship (AFS) is a component of a comprehensive antimicrobial stewardship programme** and should feature the work plans of Antimicrobial Management Teams
- b. **Where there is significant haemato-oncology practice** e.g. Regional haemato-oncology service, it is recommended that a dedicated team with AFS responsibility should be identified. As a minimum the AFS team should include a medical infection specialist with expertise in antifungal therapy and diagnostics and a specialist antimicrobial pharmacist.

2. Antifungal clinical guidelines and education

- a. **A process should be in place to develop and implement evidence-based guidelines and care pathways** with review every 3 years or more rapid review in the context of emergent evidence
- b. **Implementation should be supported by appropriate communications and education** targeted at key personnel
- c. **Local guidelines for prophylaxis of IFI and directed treatment of proven IFI** informed by international guidance
- d. **Local guidelines for empirical treatment of possible or probable IFI** including the following:
 - i. Local/national IFI prevalence and susceptibilities
 - ii. Optimal diagnostic investigation – note that a [Scottish Health Technologies Group](#) review acknowledges the uncertainties in this patient group
 - iii. First and second line antifungal agent choices with reference to drug interactions, contraindications and therapeutic monitoring
 - iv. Recommendation for clinical teams to review patients daily to support timely IV to oral switch, de-escalation or discontinuation of treatment
 - v. Clear recommendations on duration of therapy

3. Antifungal use surveillance

- a. **Review and feed back** to clinical leads on trends and expenditure for systemic antifungal use (in Defined Daily Dose/1000 occupied bed days), on at least an annual basis board wide and in specific high use areas.
- b. **A coordinated approach to link data on laboratory detection and diagnostics with antifungal use** in boards where there is a significant haemato-oncology practice.

4. Quality improvement interventions

- a. **Surveillance data should be used to support and encourage clinician-led audit** and quality improvement in antifungal use in high use clinical areas. To support this Antifungals should be included in regular antimicrobial audits and point prevalence surveys.
- b. **Key targets for quality improvement** include (but are not limited to):
 - i. Adherence to local guidance on choice of agent and use of diagnostic tests
 - ii. Appropriate de-escalation and intravenous to oral switch guidance
 - iii. Timely cessation of inappropriate and/or suboptimal treatment.

References

Worldwide emergence of resistance to antifungal drugs challenges human health and food security; Mathew C Fisher et al. 2018

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