Oncology SOP
Systemic antimicrobial prescribing at the Hospital for Small Animal (HfSA)

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Veterinary Surgeons working within the Easter Bush Campus must prescribe antimicrobials responsibly to ensure their safe, effective use and minimise antimicrobial resistance as required by the Royal College of Veterinary Surgeons (RCVS) Guide to Professional Conduct and Practice Standards Scheme.

The Veterinary Medicines Directorate (VMD) states that "Responsible antibiotic use under the cascade requires vets to take into consideration not only the most appropriate active substance(s) but also the most appropriate formulation, the posology (i.e. determining the most appropriate dose), the current pattern of resistance in their locality, an awareness of how to reduce selection pressure, and related factors (e.g. good biosecurity and husbandry/hygiene, avoiding surgical sepsis etc.). If a vet can demonstrate that these steps have been taken, then cascade use of antibiotics is supported."

Pharmacy SOP 3.2 Systemic antimicrobial prescribing at the Hospital for Small Animals covers the general guidance for systemic antimicrobial use in the HfSA. This SOP covers additional guidelines for systemic prophylactic antimicrobial treatment in oncology patients.

<u>Neutropenic Chemotherapy Patients:</u>

Neutrophils ≥ 0.75 x 10^9/L	**NO THERAPY**
Neutrophils < 0.75 x 10^9/L	**TMPS** 15 mg/kg PO q12h or 30 mg/kg PO q24h x 3 days
Febrile neutropenic ≥ 1.0 x 10^9/L	Investigate chest radiograph (CXR) + Urine culture/sensitivity; treat accordingly
Febrile neutropenic ≥ 0.75 but < 1.0 x 10^9/L	• If eating: **TMPS** PO (total 3-5d) • If not eating: **Marbofloxacin** 2 mg/kg IV q24h; switch to PO as soon as possible
*IF no improvement clinically (fever) within 12-24h, add anaerobic coverage (**metronidazole** 10-15 mg/kg IV q12h**; ampicillin** 22 mg/kg IV q8h or cefuroxime 20-30mg/kg IV q8h can be considered in severe cases following discussion with Tim Nuttall and the senior oncology clinician for the case)*	
Febrile sick neutropenic < 0.75 x 10^9/L	• Hospitalize, IV fluids & antiemetics. • Consider PO or IV antibiotics to give 4-quadrant coverage (see table at end). • The choice of treatment will depend on the likely risk and patient factors – if necessary discuss with Tim Nuttall or the Senior Oncologist on clinic.
*IF hypersensitivity to TMPS (hepatic disease, history or concurrent immune mediated disease, existing KCS, previous sulfa toxicity): utilize **enrofloxacin** 5-10 mg/kg PO q24h x 3 days* *NICE guidelines recommend stopping antibiotics at resolution of fever*	

TMPS – trimethoprim-sulphonamide

At discharge: Recheck CBC for documentation purposes and to determine if discharge WITH antibiotics

• neutrophil count recovered	discontinue antibiotics
• neutropenic < 1.0 x 10^9/L but afebrile	continue 2d post resolution of fever

Note these are guidelines and if the clinical presentation and medication history is altered, altered medication choices can be justified. The goal is to avoid unnecessary antibiotics and to ensure appropriate coverage.

Radiation Therapy Patients:

The goal is to treat immediately prior to onset of acute radiation side effects as the skin/mucous membrane barrier is disrupted prior to obvious erythema, mucositis & desquamation etc. Utilize antibiotics that are appropriate for the site and for a duration suitable for resolution of side effects (will vary per case). Localised lesions may only require topical antiseptics/antibiotics.

• Oral cavity: **clindamycin** 5-11 mg/kg PO q12h
• Oral cavity + skin/nasal mucosa: **clavulanate-amoxicillin** 25 mg/kg PO q12h
• Skin: **clindamycin** 5-11 mg/kg PO q12h (narrow spectrum) or **clavulanate-amoxicillin** 25 mg/kg PO q12h (broad spectrum)
*Only consider **enrofloxacin** if no tolerance to beta-lactams; consider **TMPS** if treatment duration is <3 weeks*

Concerns about tolerability/suitability should be discussed with microbiology.

Common antimicrobial combinations	
Fluoroquinolone & metronidazole	High tissue penetration Effective against Gram- aerobes, anaerobes, staphylococci and most Gram+ aerobes (except most enterococci & some streptococci)
Aminoglycoside & amoxicillin-clavulanate*	Low tissue penetration Gram- aerobes, most anaerobes and Gram+ aerobes
Aminoglycoside & lincosamides	Mixed tissue penetration Gram- aerobes, most anaerobes and Gram+ aerobes
Fluoroquinolone & amoxicillin-clavulanate*	Mixed tissue penetration Gram- aerobes, most anaerobes and Gram+ aerobes High potential for AMR

*The current IV amoxicillin-clavulanate solution (Augmentin®) should not be used due to the risks of anaphylaxis. Cefuroxime can be used if IV (20-30mg/kg q8-12h) can be used if an IV beta-lactam is

required. However, this is less effective against some enterococci and anaerobes. Metronidazole can be added if anaerobes are likely.