

Chemical Review
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SUBMISSION FROM THE AUSTRALIAN VETERINARY ASSOCIATION

Neomycin – Critical Usage

Veterinarians who are members of the Australian Veterinary Association (AVA) were consulted on usage patterns for Neomycin, and responses are outlined below. It should be noted that the Australian Pig Veterinarians (a special interest group of the AVA) have also provided a detailed response to this request, submitted separately to APVMA.

Use of Neomycin in Companion Animal Practice:

Neomycin is on the World Small Animal Veterinary Association (WSAVA) list of essential medications. It has an important role in a number of topical preparations (eg skin, ear and eye preparations) commonly used by veterinarians in companion animal practice.

We have not received any negative reports of adverse outcomes associated with neomycin use in the range of preparations in which it is available for companion animal practice.

Neomycin is commonly combined with other drugs (eg antifungals, corticosteroids) in topical preparations. In many cases this is appropriate, when neomycin-sensitive organisms are present. However some veterinarians suggest that this “polypharmacy” approach can at times lead to unnecessary neomycin use (eg treatment of ears for a fungal infection with a combined preparation, where use of an antibacterial is not necessary). There may be merit in investigating opportunities to separate the actives into registered stand-alone products, in the interests of better antimicrobial stewardship.

Use of Neomycin in Sheep and Cattle Practice:

Neomycin remains an important antimicrobial for specific purposes in ruminants - mainly oral use.

It is almost the only gram-negative antibiotic that livestock practitioners have available, and has benefits in calf scours due to its local effectiveness with minimal absorption. It is also included in some important intramammary treatments.

Some key points:

1. As an aminoglycoside, it has minimal effect on obligate anaerobic organisms of the rumen (or large intestine in non-ruminants) or other desirable microflora.
2. It is not on the ASTAG or WHO critical lists of human antimicrobials.
3. Many strains of enterobacteria-causing disease in extensive ruminant populations remain susceptible.
4. Its pharmacokinetic /pharmacodynamic properties include that it is dose rather than time-dependent, thus facilitating minimisation of exposure of bacterial populations to the drug during treatment.

5. Experience of clinical efficacy in stopping losses from salmonellosis on the basis of a single high or short duration oral dosing.
6. There is very good evidence in some species that oral treatment can reduce (rather than enhance) the carrier state in salmonellosis.
7. Very low-level absorption from the gut.
8. It represents risk as a residue, particularly from parenteral use, including that it is extremely heat stable.

Please see separate pig usage submission from the Australian Pig Veterinarians.

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