Resisting the urge to prescribe vancomycin

This series gives readers the opportunity to consider and contribute to discussion of some of the ethical dilemmas that can arise in veterinary practice. Each month, a case scenario is presented, followed by discussion of some of the issues involved.

In addition, a possible way forward is suggested; however, there is rarely a cut-and-dried answer in such cases, and readers may wish to suggest an alternative approach.

This month's dilemma, 'Resisting the urge to prescribe vancomycin', was submitted and is discussed by Manuel Magalhães-Sant'Ana. Readers with comments to contribute are invited to send them as soon as possible, so that they can be considered for publication in the next issue.

The series is being coordinated by Steven McCulloch, a practising vet with a PhD in the ethics of veterinary policy. It aims to provide a framework that will help practitioners find solutions when facing similar dilemmas.

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Everyday Ethics

Resisting the urge to prescribe vancomycin

You are treating pyoderma in a dog. You have advised topical antibiotic therapy but after one week of poor clinical results you decide to perform a bacterial culture and find meticillin-resistant *Staphylococcus pseudintermedius* (which is sensitive to several antibiotics, including vancomycin). You prescribe oral doxycycline but the client asks why vancomycin has not been prescribed, based on what they have read on the internet. Should the veterinarian use vancomycin, a critically important antibiotic for human medicine, to treat the dog?

Issues to consider

The case against antibiotic resistance has emerged in recent years as an unavoidable One Health topic. Guidelines for the responsible use of antibiotics in companion animals have been described before in this journal (Battersby 2014), but why would a small animal practitioner worry about the wider concerns of antibiotic resistance? Isn’t the vet, in the first instance, supposed to attend to the best interests of their patients? The literature on the ethical implications of antimicrobial resistance has seldom focused on the use of antibiotics in companion animals (Rollin 2001, Litmann and Viens 2015), although a recently published textbook in veterinary ethics features a scenario on antibiotic resistance in companion animals (Fawcett and Mullan 2017). Multiple ethical frameworks can be used to justify the prudent prescribing of antimicrobials. The concept of antibiotic stewardship has been gaining momentum, partially inspired by Garrett Hardin’s tragedy of the commons (Hardin 1968), and by Hans Jonas’s imperative of responsibility (Jonas 1984). According to Hardin, when sharing a non-renewable common resource, rational people will tend to maximise the utility of their gain at the expense of a hypothetical common good. Using farmers sharing a common pasture as example, Hardin wisely concludes that ‘freedom in a commons brings ruin to all’ (Hardin 1968).

Likewise, antimicrobials (and antibiotics, in particular) fall within the category of non-renewable common goods, which must be stewarded responsibly. Moreover, canine pyoderma has been recognised as the main cause of antibiotic use in companion animals (Hillier and others 2014). In effect, prescribing vancomycin to a dog based on the assumption that it will have a negligible effect on global antimicrobial resistance patterns constitutes a form of tragedy of the commons: I aim to maximise my gains (by providing client and patient with ‘the best possible treatment’) instead of considering the wider consequences of its use. But using vancomycin is not necessarily the best possible treatment since viable alternatives are often available. In the words of Scott Weese, ‘Don’t confuse “big-gun” antibiotics with the best treatment’ (Weese 2009).

Possible way forward

The level of threat posed by meticillin-resistant *Staphylococcus pseudintermedius* (MRSP) should also be part of the equation. The European Medicines Agency (EMA) has raised awareness on the risk of antimicrobial resistance transfer from companion animals. From a One Health approach, the EMA report argues that the ‘use of antimicrobials that are critically important for human health in companion animals is an additional risk factor for emergence and transmission of antimicrobial resistance’ (EMA 2015).

Although MRSP is potentially zoonotic, it is usually asymptomatic and does not pose a threat to healthy people. Only if immunosuppressed
Everyday Ethics

One can be tempted to appease the client by agreeing on the request to prescribe vancomycin to treat a bacterial skin infection in a dog. However, the veterinary practitioner has a moral duty not to, and equally valid alternatives should be sought. In a scenario where topical antibiotic therapy proves insufficient, establishing efficient systemic therapy is paramount. In this regard, vancomycin is poorly absorbed by the intestinal tract and intravenous injections may be inappropriate for most (if not all) patients. Depending on results from sensitivity tests, first-tier antibiotics (such as trimethoprim-sulfonamides) or second-tier antibiotics (such as doxycycline or quinolones) can resolve the pyoderma. The veterinarian is also bound to educate the client on MRSP and prudent antibiotic use. Meticillin-resistant bacteria can cause fear of contagion and anxiety regarding clinical outcomes. Clients should be educated on handling infected animals and environmental decontamination to minimise the risk of contagion.

Clients should also informed that most pyoderma can be treated successfully, regardless of meticillin susceptibility (Bryan and others 2012).

References

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