Preserving antibiotics for the future by reducing use in lambing sheds

By Emily Gascoigne, vet

Antimicrobial use in agriculture, particularly blanket use of preventative antibiotics (prophylactics) in healthy animals, has come under the spotlight. At the same time there have been documented cases of antibiotic resistance in lamb scour and joint ill bacteria, so now is a good time to work with your vet to look at on-farm practices.

Joint ill and scour are the most common reasons for antibiotic usage in neonatal lambs but we can reduce reliance if we consider infection risks and implement management changes. E.coli infection typically presents in neonatal lambs with constipation followed by scouring, dehydration, collapse and mortality. So called ‘rattle belly’ or ‘watery mouth’ can be a significant cause of poor thrift and lamb losses. Although there are some strains (K99) that are especially aggressive, lambs typically become vulnerable to E.coli when necessary criteria are not met. The bacteria are shed in faeces and any contaminated object is potentially a source of infection, including stomach feeding tubes, bottles, feeding equipment and milk (which itself can become contaminated). This means hygiene is very important.

Diagnosis

Because other pathogens and poor nutrition can cause scour, it is important to present cases to your vet and confirm with a diagnosis using faecal sampling. While this may not sound cost effective for an individual neonatal lamb, applying a correct diagnosis, treatment and management practices to the remaining lambs may have significant impacts for health and welfare.

Joint ill can be cause by a mixed flora of bacteria (gram positives and gram negatives) which, once in the bloodstream, deposit in multiple joints to cause infection, stiffness and swelling. Lambs typically become infected via their navel but, crucially, also by oral infection. This is usually linked to bacterial load in the environment, so hygiene is critical here too.

Oral ‘pump’ antibiotics are one of the most common antibiotics used in sheep enterprises. The two licensed products are Spectam (Ceva Animal Health) and Oroject (Zoetis Animal Health). There can be some misconceptions about these products but they are antibiotics and are licensed for prophylactic usage for watery mouth in the face of an outbreak – i.e. in clinically healthy animals to prevent development of disease. Both contain aminoglycosides, which work locally in the gut by killing gram negative bacteria such as E.coli.

If you are treating every lamb there are four questions to consider:

1. What are the risk factors for the disease?
2. Can we use any other strategies to reduce our dependency on antibiotics?
3. Have I got the correct diagnosis?
4. How can we use antibiotics sensibly and keep them working?

Lambs have no effective immune system immediately after birth and rely on antibodies from the ewe provided by colostrum. These antibodies bind bacteria in the guts or, once absorbed, act centrally in the blood stream. They cross the intestinal wall via pores in the intestinal walls but these pores close within six hours of birth, so failure to obtain colostrum within this time leaves lambs compromised. Colostrum is liquid gold so, if faced by a watery mouth outbreak, work with your vet to assess the three Qs.

Quality: Colostrum quality can vary between ewes and factors such as breed, age, mastitis, nutrition and body condition score. Thin ewes will produce less volume and poorer quality so consider factors such as chronic liver fluke, chronic lameness, poor nutrition, feeding practices and suboptimal condition at tupping. Colostrum quality can be assessed using a refractometer.

Quantity: New born lambs need 10% of their body weight in milk. For a 4kg lamb that’s 400ml in its first 24 hours including 200ml in the first six to eight hours. In addition to the ewe’s production, consider reduced willingness or ability of the lamb to feed. Are lambs sore and weak after difficult lambings? Are they being out-competed by their sibling(s)? Are ewes reluctant to allow lambs to feed due to mastitis or post-lambing pain? Focusing on ewe care and condition from weaning to pre-lambing can improve lamb size, vigour, ease of lambing and milk availability.

Quickly: Sufficient colostrum within six hours of birth ensures lambs have energy and protein before their infection-fighting energy from brown fat reserves runs out. It also ensures they have protective antibodies before the gut closes. Can your lambs feed quickly? Are they losing their mothers in big maternity units? Are low slung udders making sucking a challenge? Could lambing support staff be more focused on the three Qs?

We can assess the three Qs by blood sampling lambs when less than seven days old, to check there has been sufficient transfer. But remember, we
invest in colostrum quality throughout the productive year. Our weaning and flushing management, culling, lameness reduction strategies, fluke control plan and nutritional rationing are just some examples of how we prepare ewes for the point of lambing.

Do we have strategies in place to reduce the course needed, such as navel dipping and disinfection policy? And do we actually need to use them or are they an unnecessary cost?

**Ewe health**

Flock health and management planning is the ideal vehicle for this discussion, as it focuses on having a ewe in prime reproductive health and condition, managing her body condition score, creating a clean environment and minimising endemic disease. All these principles optimise ewe performance, reduce lamb mortality and reduce antibiotic usage.

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