

# Importance of Lignocaine in farm-animal practice

**Brendan Smyth, chair of Veterinary Ireland's animal welfare committee, discusses Lignocaine, its importance in farm-animal practice, and Veterinary Ireland's efforts to ensure that it is made available again to the farm-animal practitioner**

Lignocaine, also known as lidocaine, has been the local anaesthetic of choice in Irish and European farm-animal practice for more than 50 years.

Previous to this, Irish veterinary practitioners used procaine, a local anaesthetic which is still marketed in Ireland for minor surgical procedures such as disbudding of calves. Procaine has a slow onset of action and duration of anaesthesia is short, ie. approximately 30 minutes.

Lignocaine rapidly replaced procaine in the 1960s because of its ability to induce anaesthesia of the treated area far more rapidly, its more intense action and its longer duration of action, ie. two to three hours. The advent of lignocaine allowed veterinary practitioners to carry out more complex surgical procedures, eg. Caesareans, that previously were far more difficult, if not impossible, in field situations. It provided for significantly improved pain relief for mutilations performed on farm animals, eg. castration, dehorning. The use of lignocaine for pain relief also significantly reduced the risk of injury to both vets and farmers handling these farm animals.

## DRUG CONCERNS

In 1990, the US National Toxicology Program conducted experiments on the chemical, 2,6 – xylidine. 2,6 – xylidine is found in tobacco smoke and some pesticides. It is also a metabolite of lignocaine. It was concluded that 2,6 – xylidine was both carcinogenic and genotoxic when fed to rats at high-dose levels over prolonged periods.

In 1999, the Committee for Veterinary Medicinal Products (CVMP) of the European Medicines Agency issued its summary report on lidocaine (lignocaine). Concerns for 2,6 – xylidine, were noted. The CVMP concluded that because 'lidocaine is used in a small number of individual animals only, for infrequent and non-regular treatments, that "there was no need to establish a maximum residue limit"; and recommended that it be allowed for use in equidae only, because of scientific evidence of the rapid breakdown and excretion of lignocaine and its metabolites in the horse. Because no maximum residue limit was established, no withdrawal periods could be identified for lignocaine, hence, it could not be licensed for use in food animals. The use of lignocaine in farm animals has only been allowed under the cascade system since then, and only by veterinary practitioners. In 2015, a further CVMP Assessment Report on the use of lidocaine (lignocaine) in food-producing species, confirmed that certain metabolites of lignocaine presented a potential risk of genotoxic and carcinogenic effects for the consumer, but that the residues of these metabolites in cattle would be reduced to negligible levels

when withdrawal periods of 28 days for meat and 15 days for milk are observed. This report has, in effect, established maximum residue limits for lignocaine, but there does not appear to be any allowance for pharmaceutical companies to market lignocaine as a prescription-only medicine (POM) with the relevant withdrawal periods. This severely limits its potential profitability.

## LACK OF SUPPLY WITH MORE DEMAND

Currently, no pharmaceutical company is producing lignocaine for the Irish veterinary market. Norbrook, the last company to cease production, has stated that it has ceased production based on its analysis of the costs involved in licensing and producing the medicine versus the expected profits to be made on its sale. In discussions with Veterinary Ireland, Norbrook stated that it was advised that its procaine product, Adrenacaine, would do the same job. This is remarkable in that the main use of procaine for the last 40 years has been in combination with penicillin, to reduce the pain and swelling caused by penicillin when it is injected intramuscularly. As stated already, procaine produces anaesthesia more slowly, less effectively and for a much shorter duration than lignocaine. Meanwhile, lignocaine remains the local anaesthetic of choice in general medical and dental practice throughout the world, as it has been since it first became commercially available in 1948. Indeed, the World Health Organization (WHO) has seen fit to include lignocaine on its Model List of Essential Medicines. This is a list of the medications considered by the WHO to be the most effective and safe to meet the needs of a country's health system.

Veterinary Ireland is of the opinion that lignocaine is an essential medicine for modern veterinary farm-animal practice. The current situation, whereby veterinary practitioners have no choice but to revert to using procaine, is adversely affecting animal welfare, by increasing the likelihood that animals will experience greater pain while undergoing and following surgery, and by limiting the surgical options available to the practitioner. It is putting the health and safety of both the practitioner and the farmer at risk. Veterinary Ireland has written to the Minister for Agriculture, Food and the Marine Michael Creed, to highlight these issues and has written to, and met with, the management of Norbrook to request that lignocaine be put back in production. Veterinary Ireland is also working with the Federation of Veterinarians in Europe (FVE) to highlight the importance of lignocaine in farm-animal veterinary practice and to lobby European institutions to take steps to provide access to this medicine for all European vets.