

The Evaluation of Superiority of Foot Local Anesthesia Method in Dairy Cows

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Abstract : Background: Nowadays, bovine limb interventions, especially any claw surgeries, raises selection of the most qualified and appropriate local anesthesia technique applicable for any superficial or deep interventions of the limbs. Currently, two local anesthesia methods of Intravenous Regional Anesthesia (IVRA), as well as Nerve Blocks, have been routine to apply. However, the lack of studies investigating the quality and duration as well as quantity and onset of full (complete) local anesthesia, is noticeable. Therefore, the aim of our study was comparing the onset and quality of both IVRA and our modified NBA at the hind limb of dairy cows. For this abstract, only the onset of full local anesthesia would be consider. Materials and Methods: For that reason, we used six healthy non pregnant non lactating Holeystein Frisian cows in a cross-over study design. Those cows divided into two groups to receive IVRA and our modified four-point NBA. For IVRA, 20 ml procaine without epinephrine was injected into the vein digitalis dorsalis communis III and for our modified four-point NBA, 10-15 ml procaine without epinephrine preneurally to the nerves, superficial and deep peroneal as well as lateral and medial branches of metatarsal nerves. For pain stimulation, electrical stimulator Grass S48 was applied. Results: The results of electrical stimuli revealed the faster onset of full local anesthesia ($p < 0.05$) by application of our modified NBA in comparison to IVRA about 10 minutes. Conclusion and discussion: Despite of available references showing faster onset of foot local anesthesia of IVRA, our study demonstrated that our modified four point NBA not only can be well known as a standard foot local anesthesia method applicable to desensitize the hind limb of dairy cows, but also, selection of this modified validated local anesthesia method can lead to have a faster start of complete desensitization of distal hind limb that is remarkable in any bovine limb interventions under time constraint.

Keywords : IVRA, four point NBA, dairy cow, hind limb, full onset

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