

## A survey on frequency of different kinds of arrhythmias in preweaning Holstein calves

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### Abstract

This study aimed to determine the prevalence of physiological arrhythmias in the apparently healthy preweaning Holstein calves. For this purpose, 35 calves were examined. In each case, a history of a calf and its mother was obtained, and clinical examinations and electrocardiography (base-apex lead) were done at 2, 6, 12, 24, 48 and 72 hours and 7, 14 and 21 days after birth, and weaning. The results showed that out of a total of 350 electrocardiograms, 79 or 22.58% had no arrhythmias, and in relation to the rest of them (271 or 77.24%), at least one type of arrhythmia (electrical alternans, wandering pacemaker, sinus arrhythmia, sinoatrial block and second-degree atrioventricular block) was recorded. The frequencies of these arrhythmias were 187, 111, 37, 8 and 3, respectively, which occurred independently or simultaneously. The most prevalent times of the occurrence of four first pre mentioned arrhythmia were 2 hours, 12 hours and 48 hours after birth and weaning, respectively. The second-degree atrioventricular block was visible in the second and third weeks after the calf's birth and at the time of the weaning. Statistical analysis indicated that the effect of age on the presence of these arrhythmias for electrical alternans and wandering pacemaker was significant. The effect of sex on the frequency of arrhythmias was not detected. It seems that the special conditions in the neonatal calves, due to reasons such as adaptation to the external uterine environment, are responsible for the presence of a significant number of physiological arrhythmias in this age group.

**Keywords:** Physiological arrhythmia, Preweaning calves, Holstein

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