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Prevalence of nuclear cataract in Swiss slaughter calves

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1 Summary

Purpose: To evaluate the prevalence and etiology of nuclear cataract in Swiss slaughter calves.

Material and methods: 253 freshly slaughtered calves were examined by slidlamp biomikroskopy. Cataract lenses were examined histological. The activity of glutathione peroxidase, catalase and superoxide dismutase in aqueous humor was measured. All calves were tested for BVD, N.caninum and T.gondii. Since each calf in Switzerland is identified by an ear-tag, the complete pedigree was obtained. An association between cataract calves and radiation from mobile phone base stations (BS) was tried.

Results: 81 (32%) of the 253 calves showed nuclear cataracts of different characteristics. No association to the infectious agents was found. Pedigree analyses revealed no results. More male calves were affected. In histology, 62 of 100 lenses had signs for cataract. The activity of glutathione peroxidase was statistically significant abased in aqueous humor of cataract eyes ($p=0.03$). An association of strength of BS with nuclear cataracts was shown to start in the first trimester of gestation.

Discussion: Cataract prevalence in slaughter calves in Switzerland is high. Method of choice for diagnosis is slidlamp biomikroskopy. Sensitivity of histology is low (62%).

The statistically significant abased activity of glutathione peroxidase in eyes with cataract allows the suggestion of the eye being under oxidative stress.

We showed that during organogenesis the risk for the development of nuclear cataract in calves is related to mobile telephone antenna BS.