

Transmitting prion diseases in milk

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Scrapie can be transmitted to lambs through milk, according to new research published in the online open access journal BMC Veterinary Research. The study provides important information on the transmission of this prion-associated disease and the control of scrapie in affected flocks. Scrapie is a fatal neurodegenerative disease of sheep and goats. Clinical signs include itchiness, head tremor, wool loss and skin lesions as well as changes in behaviour and gait.

Timm Konold and colleagues from the Veterinary Laboratories Agency in Weybridge, UK, investigated the transmission of scrapie by feeding milk from scrapie-affected ewes to lambs that are genetically susceptible to contracting scrapie. The researchers were looking for the presence of the prion protein, PrP^{sc}, which is associated with the disease.

Eighteen lambs were fed milk from scrapie-affected ewes. Three of these lambs were culled and two were found to have PrP^{sc} in intestinal tissues. The prion protein was also detected in lymphoid tissue of the gut of the surviving lambs and in some control lambs mixed with the scrapie milk recipients after weaning. This suggested that scrapie milk recipients were able to shed the infectious agent and infect other lambs. There was no sign of PrP^{sc} in tissue samples from a control group of 10 lambs (one culled and the rest alive), which were housed in the same building but fed milk from healthy ewes. The research will continue, to see whether the lambs with PrP^{sc} develop the disease as they get older.

This work raises the possibility that other prion diseases could be transmitted in sheep via milk although it should have no direct

implications for human health. Scrapie has been found in sheep and has not been shown to be transmissible to humans. BSE has not been found naturally in sheep and occurrence in sheep in the UK is considered to be unlikely. This research adds to our understanding of the transmission of prion diseases in sheep and would help to inform measures needed to protect human health if BSE were ever to be found in sheep.

Citation: Evidence of scrapie transmission via milk, Timm Konold, S. Jo Moore, Susan J. Bellworthy, and Hugh A. Simmons, BMC Veterinary Research (in press)

Source: BioMed Central

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