

Study confirms vCJD could be transmitted by blood transfusion

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The findings underline the importance of precautions against vCJD transmission, such as the Government decision in 2004 to ban blood donations from anyone who had received a blood transfusion since 1980.

The study published in *Blood*, the journal of the American Society of Hematology, looked at BSE transmission between sheep through infected blood with the aim of quantifying how vCJD - the human form of BSE - could be spread through transfusions.

Researchers (Fiona Houston, Nora Hunter and colleagues) at the Neuropathogenesis Unit at the Institute of Animal Health, which is now part of The Roslin Institute, University of Edinburgh, found that the likelihood of BSE being transmitted between sheep through transfusion of infected sheep blood was 36 per cent, with rates of 43 per cent found for scrapie.

Fiona Houston, now at the University of Glasgow, who led the research, said: "It is apparent that the stage of disease incubation in infected donors played a large role in the likelihood of transmission. The longer that BSE or scrapie had been carried by donors, the greater the likelihood of the disease being transmitted with transfusions of infected blood."

While cases of vCJD are tailing off there are concerns that up to 4,000 people could be carrying the disease in the UK, which could then be transmitted through infected blood causing further infections.

Scientists are working to develop a test for vCJD that can be used before symptoms develop and a filter is also being trialled to remove prions – infective proteins – from donated blood.

Dr Houston said: "The study shows that, for sheep infected with BSE or scrapie, transmission rates via blood transfusion can be high, particularly when donors are in the later stages of infection. This suggests that blood transfusion represents an efficient route of transmission for these diseases and justifies the current control measures put in place to safeguard human blood supplies.

"While it may not correlate directly to what happens in the human population, due to factors such as species differences in genetic susceptibility to disease, it provides greater insight into the role of how vCJD may be carried through infected blood. By understanding how vCJD can be transmitted through blood transfusions, we can ensure the most effective control measures to minimise human to human infection."

BSE is one of a group of rare neurodegenerative disorders called transmissible spongiform encephalopathies (TSEs), which include scrapie and vCJD. Of 22 sheep that received BSE infected blood, eight showed evidence of infection. Nine out of 21 sheep receiving scrapie-infected blood developed the disease.

To date 167 cases of vCJD have been recorded in the United Kingdom, of which three patients are thought to have received vCJD through infected blood.

Source: University of Edinburgh

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