

Assessing the risk of transmission of vCJD via blood transfusion and identifying potential for diagnosis and prevention

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Title of project or programme

Title of PI Assessing the risk of transmission of vCJD via blood transfusion and identifying potential for diagnosis and prevention

Principal Investigators of project/programme grant

Title	Forname	Surname	Institution	Country
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- United Kingdom

Source of funding information

Medical Research Council

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1579044.90

Start date of award

01-11-2007

Total duration of award in months

54

The project/programme is most relevant to

- Prion disease

Research abstract in English

The recent announcement of a fourth possible transmission of variant Creutzfeldt-Jakob disease (vCJD) through blood transfusion raises concern that an epidemic of vCJD could be sustained

through human to human transmission. While transmission from clinical cases of vCJD is not likely to result in a self-sustaining epidemic, current concern over the level of pre or sub-clinical vCJD in the population raises this as an important issue for risk assessment and disease prevention. This programme of work addresses the major issues surrounding the transmission of vCJD via transfusion of blood or blood products. Using our extensive expertise, our unique murine models of TSE disease and access to important samples from blood transfusion vCJD transmissions (made available to us by the National CJD Surveillance Unit) we aim to assess the risk of transmission of vCJD by blood and to define whether modifications in vCJD have occurred during these human-to-human transmission of vCJD, which may affect host range and pathogenicity. In order to assess the risk posed to individuals with different PrP genotypes, we aim to establish how polymorphisms in the PrP gene influence human to human transmissions of vCJD. We will also establish, using our well-defined animal models, where and when the vCJD agent infects the blood stream.

Using our extensive expertise, unique resources, access to critical vCJD samples and our well defined TSE disease models the research in this proposal aims to address the urgent issues regarding the transmission of vCJD via blood transfusion. Experiments will be performed to answer the following questions:

-Are the strain characteristics of the vCJD agent modified by human to human transmission via blood transfusion?

-How does host PrP influence the human to human transmission of vCJD?

-How does infection of the blood stream occur and what components are affected?

This programme will provide an important basis for assessing the risk of vCJD transmission via blood transfusion, and for developing accurate diagnostic tests to prevent further human to human transmission of vCJD.

Keywords

Lay summary

In which category does this research fall?

- Basic research