



## **EIGHTY-NINTH MEETING OF THE SPONGIFORM ENCEPHALOPATHY ADVISORY COMMITTEE**

The Spongiform Encephalopathy Advisory Committee held its 89<sup>th</sup> meeting in London on 22<sup>nd</sup> September 2005, and discussed the following matters:

### **CURRENT ISSUES**

SEAC was informed about the following issues:

- The Chair will meet the Executive Director of the European Food Safety Authority (EFSA) to develop a closer working relationship between SEAC and EFSA.
- DH had issued draft regulations on implementation of the Human Tissue Act for consultation. It was agreed SEAC will provide a formal response.
- The Over Thirty Months Rule would be replaced by a BSE testing regime, expected to take effect from 7 November 2005.
- A Medical Research Council proposal to monitor the clinical effect of vCJD treatment with pentosan polysulphate had recently received ethical approval.
- The Cabinet Office Public Appointments Newsletter is planning a feature on SEAC. Members were encouraged to participate.
- Following advice from the CJD Incidents Panel (CJDIP) DH had notified around 100 people, identified as blood donors to three people who later developed vCJD, that they may have a

greater chance of being infected than the general population. The blood donors had been asked not to donate more blood or organs and to inform their medical practitioners before undergoing dental or surgical treatment. The CJDIP was currently reviewing the risk to other recipients of blood from these donors.

- A TSE Joint Funders Group workshop, organised by the FSA, on the research potential for ante-mortem TSE diagnostic tests will be held on 13 – 14<sup>th</sup> December, the Chair will attend.
- Following the discussion at SEAC 88 on atypical cases of scrapie and the possible implications for the National Scrapie Plan, the Chair will meet Defra policy officials and Veterinary Laboratories Agency (VLA) researchers in early November.
- A report<sup>1</sup> of preliminary findings of natural transmission of BSE between sheep in an experimental flock. This research was discussed further in the reserved business session.
- A report<sup>2</sup> describing the use of automated protein misfolding cyclic amplification to increase the amount of abnormal prion protein in the blood of scrapie-affected hamsters to detectable levels. SEAC considered the method was potentially applicable to detection of abnormal prion protein in the blood of live animals or humans in preclinical stages of infection. However, it would require significant further development and evaluation. SEAC recommended that the method be considered at the TSE Joint Funders workshop (see above).
- A very short report<sup>3</sup> and a full report<sup>4</sup> about the detection of abnormal prion protein and infectivity, respectively, in parts of the peripheral and central nervous systems (PNS and CNS) of

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<sup>1</sup> Bellworthy *et al.* (2005) Natural transmission of BSE between sheep within an experimental flock. *Vet. Rec.* 157, 206.

<sup>2</sup> Castilla *et al.* (2005) Detection of prions in blood. *Nature Medicine* published online 28/08/05.

<sup>3</sup> Iwamaru *et al.* (2005) PrPSc distribution of a natural case of bovine spongiform encephalopathy. In *Prions. Food and Drug Safety*. Springer-Verlag, Tokyo, 2005.

<sup>4</sup> Buschmann & Groschup (2005) Highly Bovine Spongiform Encephalopathy-sensitive transgenic mice confirm the essential restriction of infectivity to the nervous system in clinically disease cattle. *J. Infect. Dis.* 192, 934-942.

BSE cases. SEAC noted the findings were both in single animals at the clinical stage of disease. The level of infectivity detected in PNS tissues was considerably lower than in CNS tissues. Further related research was discussed in the reserved session.

## **EUROPEAN COMMISSION TSE ROADMAP**

Defra and the FSA asked SEAC to consider a report<sup>5</sup> describing broad, strategic goals in relation to EU TSE policy, control and surveillance measures. SEAC welcomed the TSE Roadmap and made a number of recommendations, including:

- Specified risk material (SRM) controls were an important TSE-related public health protection measure. Amendments to SRM controls should only be reviewed in light of emerging scientific findings.
- Appropriate feed controls are fundamental to prevent recycling of potentially infectious material in animal feed and prevent re-emergence of an epidemic. Any potential changes to feed controls must therefore be considered in this light.
- Effective surveillance to ascertain infection prevalence and to monitor the potential effect of changes to control measures should be maintained. Surveillance programmes should be capable of monitoring potential changes to, or new, TSEs, or other diseases.
- Changes to regulations in any one of the strategic areas might impact on others, and therefore no single strategic area should be considered in isolation.
- It would be important to communicate the reasons for any changes to TSE legislation to consumers effectively.

Defra and FSA would seek advice from SEAC on specific proposals as EU discussions develop.

## **HYPOTHESIS ON ORIGINS OF BSE**

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<sup>5</sup> European Commission TSE Roadmap (15 July 2005).

SEAC considered a paper<sup>6</sup> presenting a hypothesis that BSE arose from cattle feed contaminated with human remains derived from people infected with CJD.

SEAC considered it unlikely that the origins of BSE could ever be determined conclusively. Since human remains might have been included in animal feed in the past, the hypothesis was plausible. However, current EU and UK feed controls prevent such material entering animal feed now. It is not possible to determine from current knowledge of the characteristics of prion strains whether BSE originated from CJD or other known prion strains. Since much larger quantities of cattle and sheep remains had entered animal feed historically, and there is likely to be a species barrier between man and cattle, it seemed more likely that the origins of BSE may be related to a TSE in these species. The committee agreed to issue a statement about the hypothesis based on its discussions.

## **SEAC EPIDEMIOLOGY SUBGROUP MEETING**

The Chair of the SEAC Epidemiology Subgroup updated the committee on the Subgroup's second meeting. Discussions had continued on the profile of the vCJD epidemic and the potential for secondary transmission of vCJD. The Subgroup had reviewed data on the prevalence of primary infection and modelling studies, exploring possible influences of age and genotype on infection. The Subgroup concluded that further data were required before the outputs of the modelling work could be verified. New potential data sources to better understand the profile of the epidemic were considered. Approaches to assessment of possible interactions between routes of secondary transmission were also discussed. The Subgroup agreed to produce a position statement based on its considerations so far and to meet next year when further modelling work on secondary routes of transmission was completed.

## **BSE DVD**

SEAC was shown a DVD used to train veterinary surgeons in the clinical diagnosis of BSE. The committee welcomed this

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<sup>6</sup> Colchester & Colchester (2005) The origin of bovine spongiform encephalopathy: the human prion disease hypothesis. *Lancet*. 366, 856-861.

development and noted it would be useful to maintain knowledge of the clinical symptoms of BSE, particularly amongst individuals who had not had practical experience of the disease at the height of the epidemic.

## **BSE IN SHEEP**

Defra and FSA asked SEAC to consider preliminary findings from a current study, set up to investigate whether BSE could spread naturally and persist within a sheep flock, and to provide material for other studies. The item was discussed in the reserved business session as it involved consideration of unpublished research.

In the study, 2 out of 15 lambs born to ewes that had been orally dosed with BSE, had succumbed to BSE. SEAC noted that although these preliminary findings showed that BSE had transmitted by natural means, this had occurred in an experimental flock under circumstances when opportunities for transmission had been maximised. It was not possible to determine from the information available the precise route of transmission. No change in the BSE signature, as a result of transmission between mother and offspring, was evident from biochemical tests.

SEAC concluded that, as the experiment was on going, it was premature to determine the possible transmission efficiency of BSE within a flock or whether it was sufficient to sustain an epidemic. It was noted that BSE had not been found in on going surveillance for scrapie, and therefore there is no evidence that BSE currently exists in the national sheep flock. SEAC would consider further findings from the study as they became available.

## **VLA RESEARCH UPDATE**

SEAC was updated on current research at VLA, in particular collaborative work with Japanese researchers to examine the distribution of abnormal prion protein in the peripheral nervous system of cattle with BSE. SEAC considered the data so far did not warrant re-examination of the risk under the current SRM regulations, but welcomed proposed experiments particularly in animals at preclinical stages of infection. The item was discussed in the reserved business session as it involved consideration of unpublished research.

