BSE file

"BSE" - ATYPICAL LESION DISTRIBUTION (RBSE 92/21367)

A 6 year old, home bred (HB), Friesian x Holstein cow in a dairy herd in Aberdeenshire, submitted as a suspect BSE case in the negative study (SE0203), has been diagnosed as BSE negative on standard, statutory (obex only), diagnostic criteria at CVL.

Further examination by Dr Jeffrey at Lasswade, as required by the project design, has revealed vacuolar change in the septal nucleus and putamen which co-localised with PrP immunoreactivity. No significant lesions were found in any other part of the brain, neither was PrP found in the medulla.

It is important to note that examination of four brain blocks used earlier in the epidemic would not have detected the lesion but a 16 block study (as used in the very early days of BSE) would.

FURTHER INFORMATION

1. The herd of origin has had 15, HB, suspect cases of BSE since July 1989 and a further case is still alive.

2. Of the 15, eight have been confirmed by standard histopathology and seven diagnosed negative (including the above case).

3. Fixed brain tissue from the negative cases exists at Lasswade (because they always collect whole brain in Scotland) but has not so far been examined further. No frozen tissue was collected so neither SAF nor PrP detection (by immunoblotting) has been attempted.

4. Mr Wells agrees with Dr Jeffrey's and Dr Simmons' findings.

FURTHER ACTION IN PROGRESS

1. The brain tissue from the negative cases will be examined in detail by conventional histopathology and ICC.

2. Kevin Taylor and his veterinary colleagues have been alerted to the situation.

OTHER RECOMMENDED ACTIONS

1. TRANSMISSION Attempt transmission from the 'case' to standard mice strains. (Note: In regard to strain typing, formalin may have modified strain phenotype - we need to discuss with NPU). Further transmission studies (eg in cattle) might be suggested if primary transmission in mice fails. These proposals have funding implications.

2. PrP GENOTYPING -Although only fixed brain tissue is available we are considering genotyping from parents/offspring/fixed brain. As a first step we are attempting to extract DNA from the fixed brain and to amplify the PrP gene by PCR.

3. John Wilesmith has interrogated the data base for the herd history. Other than the high proportion of negative cases nothing significant is apparent.

4. Familial relationships between suspect (including all positive and negative) cases in this herd could be examined and tracings of breeding animals initiated.

5. Consideration might be given to collecting frozen spinal cord from new cases in this herd or in dispersals from it (for SAF/PrP examination).

CONCLUSIONS

1. At present it is unclear whether or not this is a singleton incident or whether the other negative cases in this herd show a similar lesion.

2. The discovery might indicate the existence of a different strain of BSE from that present in the general epidemic or an unusual response by an individual host.

3. If further atypical lesion distribution cases are revealed in this herd then implications of misdiagnosis of 'negative' cases in other herds may not be insignificant.

4. If this is a new strain all the implications need to be considered including whether or not to proceed with the further investigation of future cases negative for BSE on obex examination alone and from which whole brains are available (as in Scotland) or collected in the future. Also perhaps investigation of the tissue distribution of infectivity in these animals might be considered.

5. Animal and public health controls in place should be sufficient since all tissues (other than brain for diagnosis) are incinerated.

We observe that Dr Tyrrell would wish to be informed of this at an early opportunity and that the SEAC would wish to discuss it at their meeting in April.

R BRADLEY
M DAWSON
17 February 1993

CVO - for information and comment on further action please

cc Mr K C Taylor
Dr B J Shreeve ✓

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This minute is re-issued with a wider distribution. The information contained herein should not be disseminated further except on the basis of "need to know".

DTE 1431

R BRADLEY
9 March 1993

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Mr R C Lowson
Dr D Matthews
Mr I Robertson
Dr K MacOwan
Mr C Randall
Mr J W Wilesmith
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