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SPONGIFORM ENCEPHALOPATHY ADVISORY COMMITTEE

SPECIAL MEETING TO DISCUSS A SUSPECTED CASE OF CJD IN A CATTLE
FARMER: WEDNESDAY 4 OCTOBER 1995 AT 11.00am, ROOM 102A,
SKIPTON HOUSE

Present: Dr D A J Tyrrell (Chairman)
Dr R G Will (Deputy Chairman)
Dr R H Kimberlin
Professor J R Pattison
Dr W A Watson

Dr A Wight (DH) } Observers
Mr R Bradley (CVL) }
Mr T Eddy (MAFF) } Secretariat
Mr C Lister (DH) }

In Attendance: Mrs M Wilson (BBSRC)
Dr J Havercroft (MRC)
Professor P Smith (LSHTM)
Dr S Cousens (LSHTM)
Mr J Wilesmith (CVL)
Mr T Render (MAFF)

INTRODUCTION AND APOLOGIES

1. Dr Tyrrell welcomed Professor Peter Smith and Dr Simon Cousens of the London School of Hygiene and Tropical Medicine who were attending to provide the Committee with expert epidemiological advice.
2. Apologies were received from Professor Allen, Professor Brown, Dr Hueston and Mr Pepper.

PURPOSE OF THE MEETING

3. The meeting had been called to discuss the significance of a possible fourth case of CJD in a cattle farmer with BSE in his herd.

DESCRIPTION OF THE CASE

4. Dr Will said that the CJD Unit had been notified of the suspect case the previous week. The man, who was age 59, had had an EEG which was suggestive of CJD. There was no biopsy or PrP evidence. The Unit had initially classified the case as probable CJD, but Dr Will felt that it was more appropriate to look on it as a suspect case because the EEG was not typical of CJD.

5. The man kept a beef suckler herd which had had a single case of BSE in 1991. He had been interviewed by the Unit, and denied having contact with meat and

*1, also related to BSE
(see Bob's note).*

gave no file of

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bonemeal or ever tasting feed. He had last drunk unpasteurised milk in 1972. He had assisted at the birth of calves and, around once a year, with veterinary procedures such as caesarean sections.

6. In looking at European data, Dr Will said that there were 12 cases of BSE in France and that one of the farmers with a case had a progressive neurological disease. He had apparently developed myoclonus and was deteriorating. Dr Will added that, should this also turn out to be a case of CJD in a farmer with BSE in his herd, it would be of great significance. Professor Smith agreed that one new case in France, taken together with the UK cases, would be significant.

7. Dr Will also summarised recent cases of sporadic CJD in young people. There were currently two cases in teenagers - a 19 year old and a 17 year old. The case in the 17 year old had unusual pathology, although this could be related to age. There were also other cases in their 30s and 40s, which was unusual. However, although this was a change from previous experience ^{it was} ~~which was~~ currently difficult to interpret: *impossible to reach any conclusions AT all pathology genotype considered*

INFORMATION ABOUT THE FARM

8. Mr Wilesmith said that no-one from MAFF had visited the farm, which was in Gwynedd. There were around 70 animals (Herefords) in the beef suckler herd, with one case of BSE in a purchased animal which died in September 1991. From available information, the animals had not been fed on concentrates (although this had not been double checked). It was thought, however, that the farm did have quite a big poultry battery unit, which may have meant that ruminant-derived feed was available on the farm.

9. MAFF had been able to trace the herd of origin of the animal with BSE, but it appeared not to be on the BSE database. They concluded that the farm had probably gone out of existence in 1986/87. There were 3 cases of BSE from the same farm, all in different places. Two calves had been born to these affected animals (in August 1990 and April 1991), but both were males and would since have been slaughtered.

EPIDEMIOLOGY

10. Dr Cousens provided members with a handout containing his calculations (Annex A to these minutes). He had calculated age specific mortality rates for sporadic CJD for 1990 to 1994 and applied these to data on farmers (the denominator) to arrive at the expected number of sporadic CJD cases in farmers. He noted that the denominator available to him was for England and Wales only, and that a UK denominator would have been more appropriate.

11. The calculations used different source populations, which were highlighted - all farmers and farm workers; all workers on cattle farms and all workers on farms with BSE. The populations used made a very big difference to the interpretation of the cases. It was noted that the inclusion of denominator populations for

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Scotland and Northern Ireland would be unlikely to affect the significance of the results on 'all workers on cattle farms' and 'all workers on farms with BSE'.

12. Members agreed that, in order to decide on which population to use, a prior hypothesis was needed. Professor Smith raised the question of the most appropriate time window in which to look at the cases. He suggested a six year window as probably the most reasonable, starting in 1990.

13. In looking at cases of CJD in farmers prior to 1990, Dr Will said that data between 1985 and 1990 were retrospective and therefore difficult to assess. He understood that between 1980 and 1984, there had been two cases of CJD who had been farmers throughout their lives. Since 1990, the frequency of identification had increased and all four cases had had BSE in their herds, and the first three were all dairy farmers. *1980-4 farmers* *1985-9 - 2 farmers, one farmer wife, one ex-farmer.*

14. Professor Smith said that it would be useful to see if the same frequency in farmers had occurred in the last decade. Members agreed that death certificates should be reviewed from 1985 to 1990. *4 wife*

ACTION: Dr Will

15. Mr Wilesmith said that he could refine the data on workers on BSE affected farms and break these down by herd type. Professor Smith agreed that this needed to be done, but thought it unlikely that this would result in radical change to the expected number of cases for this group (Annex A). The cases in this group were already beyond the point at which they could have occurred by chance.

ACTION: Mr Wilesmith

16. Dr Watson suggested that any risk to humans from meat and bonemeal should also be observed in pig and poultry farmers - quite a lot of pigs and poultry were farmed separately from cattle - and any occupational risk ought to be seen in abattoir workers etc as well as farmers. Professor Smith agreed that it would be helpful to look at categories of farmer - cattle/non-cattle; feed/non-feed.

ACTION: Mr Wilesmith

17. Returning to the question of the prior hypothesis, Dr Tyrrell raised the question of whether account should be taken of:

- any other factor in the population (eg the increase in Alzheimer's disease);
- changes in farming\farmer practice\farmer environment that might predispose to CJD.

18. Dr Will said that it was possible to argue that we already had an analysis of occupational risk in the EU. This showed that there was no apparent difference in the frequency of CJD cases in farmers between the UK and the rest of Europe.

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Also, some of the same things applied across Europe, eg the export of meat and bonemeal.

MAIN CONCLUSIONS

19. Members summarised their main conclusions as:

- there had been a worrying number of cases in farmers exposed to cattle with BSE. However, if there were an occupational link, there would be other occupations that might be expected to be at greater risk, and there was no evidence for this;
- the stage was being reached where it was difficult to explain the cases as a chance phenomenon. However, although significant, the absolute risk remained extremely low;
- the evidence in the current case was exposure to BSE for a short period. There was also the likely presence of meat and bonemeal fed to poultry before 1990;
- it was unclear whether the potential risk factor might be association with animals with BSE or the food given to them (it was known that farmers ate calf and cattle feed but not whether they also ate pig and poultry feed). It was suggested that there might be a problem with dust from feed but that this should be more of a problem with dust compounders;
- given that there was a problem relating the cases to a causal link, the transmission studies were particularly important;
- it was still necessary to make a final diagnosis of CJD in the possible 4th case.

RECOMMENDATIONS

20. Dr Tyrrell invited members to consider what action needed to be taken

21. Dr Will said that it was difficult to suggest practical means of protecting farmers. He was not sure how to form a likely hypothesis that could be tested directly, and said that transmission studies should be carried out in all cases - farmers and teenagers. He added that some people had perceived this not as a scientific issue but as a health issue, but argued that there was no justification for making this distinction. Members supported this view.

22. Dr Will said ^{public} that there was no more space at the NPU to do further transmission tests. If Compton were to carry out the tests, it would need to be upgraded.

23. Dr Tyrrell asked whether Dr John Collinge could use his transgenic mice for typing. Dr Will said that he had already agreed to do so for the first two farmers.

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However, Dr Will did not know the discriminatory powers or biological reliability of the system.

24. Dr Kimberlin said that the statistics were getting worse and worse. It was not possible to get a handle on any possible link with BSE. There was clearly something going on because the rate of CJD in farmers in the UK and in other European countries was the same. He pointed out that, across Europe, dairy farmers seemed to have a higher risk of CJD than others.

25. Professor Pattison agreed that all four cases in farmers should be included in the transmission studies, and said that if a line had to be drawn this should be done later. Dr Watson agreed that the transmission studies were crucial.

26. Dr Cousens said that it would be nice to have a more precise denominator population for the UK, to provide information on how many people fall into occupational risk categories.

27. Mr Bradley asked about CJD incidence in the Republic of Ireland and Switzerland. Dr Will said that there was no available information from Ireland, but Switzerland had published data. Dr Will had not been in contact with them, but would do so. He added that Australia were funded to monitor CJD until 2010.

as there is systematic surveillance

Action: Dr Will

28. Dr Wight invited members to make a fairly clear statement on how they viewed the significance of a 4th case. She also invited the Committee to consider whether they were satisfied that nothing else needed to be done in terms of practical measures.

29. Dr Tyrrell said that, although numbers were higher than expected, they were still extremely small. It would be irrational to take specific measures at the moment. Members agreed to draw up a statement which the Department of Health could issue in response to media enquiries (attached at Annex B to the minutes)

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ANNEX B

POSSIBLE CJD IN A CATTLE FARMER

STATEMENT BY THE SPONGIFORM ENCEPHALOPATHY ADVISORY COMMITTEE

The Spongiform Encephalopathy Advisory Committee (SEAC) have reviewed the reported suspect case of CJD in a farmer who has had a case of BSE in his beef suckler herd. Three previous CJD cases have been confirmed in dairy farmers whose herds had had cases of BSE.

The Committee concluded that it was difficult to explain this as simply a chance phenomenon. There is a statistical excess of cases in cattle farmers compared with the general population but the absolute risk, even for farmers, is extremely low at about 2 cases per million per year. There may be other explanations for such an association besides infection with BSE, and the Committee noted that there are no reported cases in other occupational groups such as veterinarians who might be expected to be similarly exposed. They also noted that surveillance of CJD elsewhere in Europe has shown a similar incidence of CJD in farmers, including dairy farmers, in countries with no or very few cases of BSE. They therefore felt that it was important to undertake further epidemiological studies to detect any particular risk factors which might be involved, and reiterated their advice that the UK cases of CJD in cattle farmers and the strain of the agent recovered from them should be studied in detail.

The Committee have asked for further work to be done, but have not altered their advice to Government on the precautions necessary to protect either the public health, including farmers, or animal health

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Notes on calculations re cases of CJD in farm workers

Numerators

Calculations are based on a total of 5 cases of CJD. Four of these cases were in men. All four worked on farms with cattle (3 dairy, 1 beef suckler). All four worked on farms with confirmed cases of BSE. The fifth case was a woman who worked on farms with (dairy) cattle. No cases of BSE reported.

Denominators

Denominators are based on the table provided by Christine Jennings using the EC Structure Survey, 1990. It is not entirely clear whether this covers England only or England and Wales. It appears to exclude Scotland.

To calculate the number of individuals working on farms with adult cattle it is assumed that about 120,000 people work on dairy farms (Sheila Gore's earlier analysis) and about half that number (60,000) on beef suckler farms (guesstimate by John Wilesmith). Total workforce (full- and part-time) is 442,300. So estimate that about 40% of all farm workers employed on farms with adult cattle.

About one third of all UK herds with adult cattle have experienced at least one case of BSE (Sheila Gore's earlier analysis). So estimate that 15% ($= 40\% \div 3$) of all farm workers employed on farms which have experienced BSE.

Expected numbers of cases

Calculated by applying age- and sex-specific mortality rates for sporadic CJD, Great Britain, 1990-1994 to denominator data (see above).

P-values

Calculated assuming that the number of cases follows the Poisson distribution, using expectations above.

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Sheet3

Analysis of farming population (E+V)									
Denominator	E(1 year)	E(5 years)		E(6 years)		E(7 years)			
Full-time males (193,210)	0.13	0.65	P(4+)	0.005	0.78	0.009	0.91	0.01	
All males (305,440)	0.23	1.15	0.03	1.36	0.05	1.61	0.08		
			P(1+)				P(1+)		
Full-time females (36,320)	0.04	0.2	0.17	0.24	0.2	0.28	0.23		
All females (136,860)	0.14	0.7	0.49	0.84	0.56	0.98	0.62		
			P(5+)				P(5+)		
All full-time (231,530)	0.17	0.85	0.002	1.02	0.004	1.19	0.007		
			P(4+)				P(4+)		
Full-time cattle males (40%)	0.05	0.25	0.0001	0.3	0.0003	0.35	0.0005		
All cattle males (40%)	0.09	0.45	0.001	0.54	0.002	0.63	0.004		
			P(5+)				P(5+)		
Full-time cattle, M+F (40%)	0.07	0.35	<0.0001	0.42	0.0001	0.48	0.0002		
			P(4+)				P(4+)		
Full-time BSE males (15%)	0.02	0.1	<0.0001	0.12	<0.0001	0.14	<0.0001		
All BSE males (15%)	0.03	0.15	<0.0001	0.18	<0.0001	0.21	0.0001		
Full-time BSE, M+F (15%)	0.03	0.15	<0.0001	0.18	<0.0001	0.21	0.0001		

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