BOV 92F

SEAC 18/2B

SUMMARY REPORTS OF MAFF BSE TRANSMISSION STUDIES AT THE CVL

Bov92F

SBPATH120.DOC

UPDATE OF TRANSMISSION STUDIES 20.1.95

SE1802 Transmissibility of BSE to pigs by injection with brain homogenate

Mouse bioassay of tissues from challenged affected and control pigs were initiated in November 1993 and are currently incomplete.

SE1803 Transmissibility of BSE to pigs by oral exposure to brain homogenate

The remaining 4 challenged and 5 control pigs are healthy (56 months p.i.).

Mouse bioassay of tissues from 19-24 month kill of challenged and control pigs are currently incomplete.

SE1804 Transmissibility of BSE to cattle by oronasal exposure to placentae of affected cattle

The remaining 6 challenged and 4 control cattle are clinically normal (62 months p.i.).

Mouse bioassay of tissues from 24 month kill of challenged and control cattle complete. No evidence of infectivity was found.

SE1805 Transmissibility of BSE to domestic fowl by injection with brain homogenate
SE1806 Transmissibility of BSE to domestic fowl by oral exposure to brain homogenate

Intercurrent disease has resulted in the loss of seven of the twelve parenterally challenged birds, six of the eleven orally challenged birds and ten of the fourteen undosed controls by 55 months p.i. No significant nervous system pathology was identified in any of these and the surviving birds are healthy. A high proportion of the male birds killed in the test groups have shown neurological signs which remain unexplained. Interpretation of the significance of this observation is confounded by losses (not associated with neurological signs) in control male birds earlier in the course of the study.

SE1809 Comparative efficiencies of the bioassay of BSE infectivity in cattle and mice

The onset of clinical signs in the cattle has been insidious, but by 22 months p.i. unequivocal clinical signs were present in three animals. These signs progressed and the animals were necropsied. Histopathological examinations pending. Unequivocal clinical signs were observed in a further two animals 24 months p.i. with possible early clinical signs in fifteen of the remaining animals. Groupings of animals are coded and this code will be broken only on completion of the cattle study to avoid clinical observation bias.

SE1813 Transmissibility of scrapie to pigs by oral exposure to brain homogenate

Intercurrent disease (epiphysiolysis of the hip joint) has resulted in the loss of one challenged pig (12 months p.i.). Histopathological examination revealed no significant brain pathology however localised vacuolar changes as described in control pigs of the parenteral challenge study (SE1802) were observed.

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The remaining challenged and control pigs are healthy (14 months p.i.).

Standard end point titration of infectivity of the pool of homogenised sheep scrapie cases, initiated in October 1993, is incomplete.

SE1901 Pathogenesis of experimental BSE in cattle

Kill 8a (32 months p.i.) of 2 clinically normal challenged cattle was completed in August 1994. Evidence of SAF and vacuolar changes have been found in these animals. Unequivocal clinical signs became apparent in one challenged animal 35 months p.i. with 6 of the remaining 8 challenged animals showing possible clinical signs.

Consequently the remaining challenged animals are being killed as three groups at two month intervals (36, 38 and 40 months p.i.). At 36 months p.i. 3 challenged animals were necropsied, two of which showed possible early clinical signs. Histopath pending. Two of the remaining five challenged animals show unequivocal clinical signs with the other three showing possible early clinical signs (37 months p.i.). The two remaining control animals are clinically normal (37 months p.i.).

Mouse bioassay for infectivity of tissues:-
Early evidence of the oral experimental transmission of BSE to the cattle has been obtained from the mouse assay of the distal ileum of challenged calves from the second (6 months p.i.) and third (10 months p.i.) sequential kill groups, but not from the first (2 months p.i.) group to be killed. Subsequently infectivity in the distal ileum has been demonstrated in cattle from the fourth (14 months p.i.) and fifth (18 months p.i.) sequential kills.

The mouse bioassays of infectivity of the control calf and challenged calves from kill 1 are complete. No evidence of infectivity was found. Assay of infectivity of central nervous system tissues collected at kill 2 is also complete and no evidence of infectivity was found. Mouse bioassay of tissues collected at kill 2 and subsequent kills are incomplete.

SE1902 Effect of oral inoculum dose on attack rate and incubation period of BSE

The onset of clinical signs of BSE in these animals has been insidious. Unequivocal clinical signs were confirmed in three animals 34 months p.i. These deteriorated rapidly and were necropsied 34-35 months p.i. Histopath pending. Subsequently unequivocal clinical signs have been observed in one animal 36 months p.i. with possible early clinical signs in 17 of the 35 remaining animals. To avoid clinical bias in the critical assessment of incubation period the groups remain coded.

S A C HAWKINS
G A H WELLS

Mr R Bradley