BOVINE SPONGIFORM ENCEPHALOPATHY AND POSSIBLE HUMAN RISKS

Based on a World Health Organization press release of 3 April 1996

At a consultation organised by the World Health Organization (WHO) in Geneva on 2-3 April 1996, a group of international experts reviewed the public health issues related to bovine spongiform encephalopathy (BSE) and the emergence of a new variant of Creutzfeldt-Jakob disease (CJD), as officially reported by the United Kingdom on 20 March 1996.

The consultation made recommendations, based on the latest scientific information, to minimise transmission of BSE among animals and to reduce as much as possible any exposure of humans to the BSE agent.

Bovine Spongiform Encephalopathy

BSE is a transmissible spongiform encephalopathy (TSE) in cattle which was first identified in the United Kingdom in 1986. It is one of a group of similar degenerative diseases which occur in several animal species. Transmission of BSE to cattle appears to have been via contaminated meat and bone meal in concentrate feed, with sheep or cattle being the original source. The United Kingdom is the only country with a high incidence of the disease, and the epidemic there appears to have been due mainly to feeding affected bovine material to cattle before the ruminant (cattle, sheep and goats) feed ban in July 1988 took effect. There is no evidence to date of either maternal or horizontal transmission of BSE.

The incidence of the disease is declining significantly in the United Kingdom, although the measures introduced have not halted the epidemic. The worldwide distribution of BSE is not known precisely, but it has been reported at a much lower incidence than in cattle in other European countries. In these latter countries only part of the BSE cases could be related to the consumption of possibly BSE-contaminated feed.

Variant Creutzfeldt-Jakob disease (V-CJD)

The group reviewed the clinical and pathological data from the ten cases in the United Kingdom. The disease has occurred at younger ages than is usual for classical CJD and shows several clinical and pathological differences. Based on findings in these ten cases, the group established a case definition to facilitate better surveillance, which is necessary to determine the incidence and distribution of this syndrome.

The group concluded that there is no definite link between BSE and V-CJD, but that circumstantial evidence suggests exposure to BSE may be the most likely hypothesis. Further research on both diseases is urgently required.

Possible exposure to BSE has already been greatly reduced by measures taken in the United Kingdom. Implementation of the recommendations by this consultation should further reduce risk from exposure to BSE to minimal levels.

Recommendations

Bovine Spongiform Encephalopathy

1. No part of any animal which has shown signs of TSE should enter any food chain, human or animal. All countries must ensure the slaughter and safe disposal of TSE-affected animals so that TSE infectivity cannot enter any food chain. All countries should review their rendering procedures to ensure that they effectively inactivate TSE agents.
2. All countries should establish continuous surveillance and compulsory notification for BSE according to recommendations established by the Office International des Epizooties in Paris. In the absence of surveillance data, the BSE status of a country must be considered as unknown.
3. Countries where BSE exists in native cattle should not permit tissues that are likely to contain the BSE agent to enter any food chain.
4. All countries should ban the use of ruminant tissues in ruminant feed.
5. With respect to specific products:
   - Tests on milk from BSE-infected animals have not shown any BSE infectivity, and there is evidence from other animal and human spongiform encephalopathies to suggest that milk will not transmit this disease. Milk and milk products, even in countries with high incidence of BSE, are therefore considered safe.
   - Gelatine is considered safe for human consumption since its preparation involves a chemical extraction process that destroys BSE infectivity.
   - Tallow is likewise considered safe if effective rendering procedures are in place.
6. With respect to medicinal products, which differ from food in that they can be injected as well as taken orally, measures to minimise the risk of transmitting the BSE agent were developed at a previous WHO consultation in 1991 and continue to be applicable.
   - As more information becomes available these measures will be reviewed and strengthened if necessary.

- The importance of obtaining materials destined for the pharmaceutical industry from countries which have a surveillance system in place and which report either no or sporadic cases of BSE is reiterated.
- Removal and inactivation procedures contribute to the reduction of the risk of infection. But it must be recognised that the BSE agent is remarkably resistant to physico-chemical procedures which destroy the infectivity of common microorganisms.

7. Research on TSE should be promoted, especially on rapid diagnosis, agent characterisation, and epidemiology of TSEs in humans and animals.

Variant Creutzfeldt-Jakob disease (V-CJD)

1. The geographic distribution of V-CJD, although reported at present only in the United Kingdom, needs to be further investigated.
2. While the most likely hypothesis at present for this newly recognised variant is exposure to the BSE agent, further data from scientific studies on these variant cases are urgently required to establish a link. More monitoring and surveillance studies on all forms of CJD are required throughout the world, modelled on current European collaborative studies.
3. Exposure to BSE from beef and beef products has already been substantially reduced by the measures taken in the United Kingdom. Exposure to BSE has always been lower in other countries. The group considered that implementation of their recommendations will ensure that any continuing risk of exposure to BSE in beef and beef products will be reduced to a minimum.

As surveillance worldwide is increased for both BSE and V-CJD, more information will become available in the coming months. WHO will keep these developments under review and update the recommendations as appropriate.

Australian Task Force

The task force established by the Federal Government (see *Communicable Diseases Intelligence* 1996;20:170) will consider this report together with scientific information from other sources when providing advice to the Government.

A toll-free telephone line is available so that members of the public can enquire about products which may be suspect and about diseases BSE and CJD. The toll-free number is 1800 02 06 13 and is open from 8.30am to 8.30 pm every day.