

Prevenzione delle encefalopatie spongiformi trasmissibili e metodi di inattivazione dei prioni

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KEY WORDS

Transmissible Spongiform Encephalopathies; prions; inactivation methods

SUMMARY

«Prevention of transmissible spongiform encephalopathies and prion inactivation methods». Background: *Transmissible Spongiform Encephalopathies (TSEs) are infectious, progressive, lethal neurodegenerative diseases which affect both human and other mammalian species. The knowledge on the agent responsible for the infection and its pathogenetic mechanism is still limited. Specific diagnostic tests are currently not available; diagnosis is based on clinical symptoms and confirmed by a post-mortem examination which can reveal the typical brain lesions. There is some evidence on the relationship between the agent responsible for Bovine Spongiform Encephalopathy (BSE) and the new human variant of the Creutzfeldt-Jakob disease (nvCJD). The TSEs agents have some peculiarities: they overcome the interspecies barriers and are resistant to the normal disinfections and sterilization procedures.* Objectives: *On the basis of current scientific evidence, the aim of this article was: to make an excursus on the efficacy of inactivation methods and to give an overview of what has been issued by International and Italian Regulatory Agencies for the prevention of such diseases in hospital and occupational environments.* Methods: *We examined current scientific literature on inactivation of TSEs by physical or chemical methods or combinations thereof. We also reviewed the most relevant guidelines on exposure risk, containment and occupational exposure to TSEs agents.* Results and Conclusions: *Due to the peculiarity of the prion protein and its transmission, it is very important to have effective methods to inactivate the TSE agents and to prevent them spreading. At present, no certain data are available on TSE development in occupational environments, while sources of exposure risk are known for several occupational categories, such as health-care personnel, pathologists, technicians in diagnostic and research laboratories, farmers, veterinary surgeons, slaughter house operators. For these workplaces, after an accurate risk assessment, it is necessary to implement certain precautionary measures, based on containment procedures and on the adoption of specific inactivation protocols.*

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