Speaker Abstracts

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SURVEILLANCE OF TSEs IN ITALY: A STORY SUCCESS

Background
Transmissible spongiform encephalopathies (TSEs) are fatal neurodegenerative infectious diseases of man and animals: Bovine spongiform encephalopathy (BSE) and Scrapie in sheep and goats are the most known TSEs. BSE was responsible for a huge epidemics starting from the mid eighties, spreading from UK to all Europe. While BSE causes vCJD in humans, Scrapie has never been convincingly associated with any form of human TSE, whenever endemic in Europe for more than 200 years. Nevertheless, the fact that sheep may have been exposed to BSE prions poses a risk to humans. Due to public health implications, the European Regulation (EC) 999/2001 provided a harmonized legislation intended to prevent, control and eradicate these diseases.

Challenges
Atypical types of both BSE and Scrapie, different from the classical forms in clinical presentation, molecular characteristics and distribution of PrPSc, have been detected since 1998. TSEs are characterized by the concentration of an anomalous isoform (PrPres) of the natural prion protein (PrPc) in the central nervous system (CNS). PrPres differs from PrPc in its high insolubility and partial protease resistance: these characteristics are exploited by the majority of the methods currently used for BSE diagnosis. To date the diagnosis is based only on post-mortem tests.

Approach being taken
The trend of BSE and Scrapie and thus the effectiveness of the enforcement of the control measures in place are monitored through an EU surveillance program. The Italian Ministry of Health appointed the net of State Veterinary Istituti Zooprofilattici Sperimentali as official laboratories for TSEs screening through rapid tests, coordinated by the NRL for Animal Encephalopathies (CEA), that carries out confirmatory tests. This approach allows to rely on laboratories operating in the frame of ISO17025 and applying harmonized Standard Operating Procedures. Furthermore a unique highly performing rapid test for BSE and Scrapie is in use.

Conclusions
The surveillance program through rapid testing in place allowed the detection of the first case of BSE in Italy as well as in most EU countries and ensures the monitoring of Scrapie trend; considering the easing of measures related to the disappearance of BSE, it is of utmost importance as an early warning tool in the case of the eventual re-emergence of the disease.