OUTBREAKS OF ALIMENTARY TBE VIRUS INFECTIONS IN SLOVAKIA

Background

While most TBE virus infections occur by a tick bite, infections by the consumption of unpasteurized milk and milk products should not be neglected. The historic term 'biphasic milk fever' for TBE reminds of this infection route. The incubation time is often shorter (2 to 4 days) compared to infection by a tick bite (4-28 days). Outbreaks affecting some or many individuals by alimentary infection are not uncommon. The first reported milk-borne epidemic in Slovakia occurred in 1951 when more than 600 individuals were infected.

Results

The authors have reviewed 13 alimentary epidemics and outbreaks which have been recorded in the Slovak Republic over the period of 2012 to 2016.

- In 2012, a total of 107 human cases have been confirmed in Slovakia (1.89/100.000 persons) and 18 persons were infected through the alimentary route. Two outbreaks were associated with raw milk from goats and affected 12 and 3 persons, respectively.
- In 2013, a total of 163 TBE cases were registered (3.01/100,000) and 11 TBE cases were caused by the alimentary route. One epidemic has been reported with 5 TBE cases caused by the consumption of sheep's cheese.
- In 2014, 116 TBE cases have been reported (2.14/100.000). A total of 33 TBE cases have been reported due to consumption of unpasteurized milk and dairy products. One epidemic with 11 cases was reported due to the consumption of sheep's cheese in a restaurant.
- In 2015, 84 TBE cases were registered (1.55/100,000) and four epidemics were documented with 7, 3, 2 (twice) persons falling ill, respectively.
- In 2016, 173 TBE cases were reported, and five epidemics were traced back to the consumption of unpasteurized milk and dairy products. In two cases, milk from goats was the cause of infection, while one outbreak was due to cow's milk and two outbreaks were due to milk from sheep. In one of these outbreaks about 500 persons were exposed and 44 individuals became ill. 36 patients were hospitalized at the Department of Infectiology and Travel Medicine in Kosice with an average length of 6.9 days.

Discussion

Generally, most TBE cases have been reported to be transmitted by milk from goats. It is not known if viraemia in goats is higher and lasts longer than in cows and sheep, or if unpasteurized milk and dairy products from goats are more often consumed. In this study, 13 milk-borne TBE epidemics/outbreaks have been reported in Slovakia resulting in 107 TBE cases. In Slovakia, about 389,000 sheep were registered, compared to about 18,000 goats (as of October 2017), and thus, there is a prerequisite for more frequent consumption of milk and cheese from sheep. The TBE virus can effectively be inactivated by high temperature, short term pasteurization (72°C, 15 seconds), though an increasing popularity of raw milk consumption can be observed with the risk of more alimentary TBE virus infections in TBE endemic areas. In this context, it should be noted, that alimentary TBE virus infections are not only being reported from eastern Europe and the Baltic States but occurred a short while ago in

Austria and Germany as well (see Newsletter April 2018). TBE virus specific RNA has been detected in samples of raw milk from cows, goats and sheep in eastern Poland, with a high prevalence of 22.2%, 20.7% and 11.1 % respectively (Cisak et al., *Ann. Agriac. Environ. Med.* 2010; 17: 283-286), and TBE virus RNA has also been found in cow's milk in Norway (Snapshot 5/2019). People who like to consume unpasteurized milk and dairy products originating from TBE risk areas should get to know about the risk of contracting TBE and that the TBE vaccination can help protect against TBE.

Literature

Dorko et al.

Milk outbreaks of tick-borne-encephalitis in Slovakia, 2012-2016

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