Chapter 13

TBE in Bosnia and Herzegovina

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E-CDC risk status: affected (last edited: date 25.06.24, data as of end 2022)

History and current situation

Very limited information is available for Bosnia showing the occurrence of TBE. 7

Even though there have been some elder case reports in the northern parts of the country, including alimentary infections, details have not been published.³

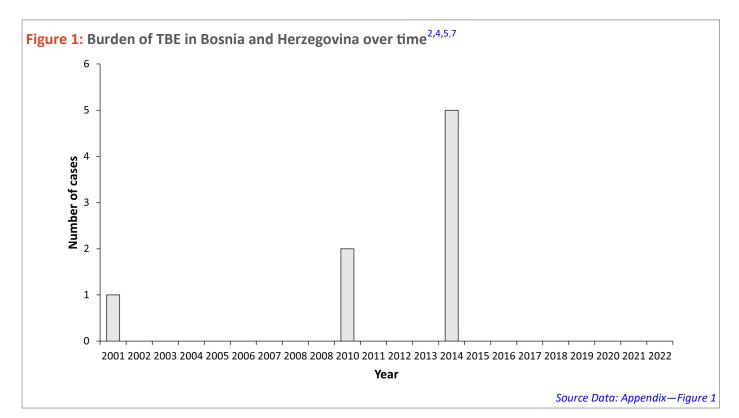
In early 1996, United States military forces were deployed to Bosnia as part of Operation Joint Endeavor. Only 4 (0.42%) unvaccinated individuals, all males, demonstrated a 4-fold seroconversion. All 4 seemingly were infected with TBE virus (or a closely-related variant) during their 6–9-month deployment period in Bosnia, but did not report with symptoms to any health care provider.^{2,4,5}

The only official TBE case report data so far are from the Centralized Information System for Infectious Diseases ([CISID] – WHO: incidence of tick-borne encephalitis) where 1 case was reported in 2001, and 2 cases were reported in 2010, and additionally 5 cases of alimentary outbreak were reported in 2014 by the Institute of Public Health in Serbia (Institute of Public Health FBIH https://www.zzjzfbih.ba/ biblioteka/) [Accessed October 2016].

Overview of TBE in Bosnia and Herzegovina

| Table 1: Virus, vector, transmission of TBE in Bosnia and Herzegovina | |
|--|---|
| Viral subtypes, distribution | TBEV-SIB ^{1,2} , TBEV-EU? |
| Reservoir animals | There is a lack of data on TBEV- seroprevalence among wild animals ⁸ |
| Infected tick species (%) | I. ricinus ^{1,2} |
| Dairy product transmission | Has been reported ³ |

However, the proven record about the spread of the TBE virus in Bosnia and Herzegovina is the isolation of five strains of the TBEV-Sib genotype 3 in *Ixodes ricinus*.^{1,2} Siberian TBEV strains from Bosnia, the Crimean Peninsula, Kyrgyzstan and Kazakhstan are clustered into a newly described Bosnia lineage.³



Appendix

Source data: Figure 1

| Year | Number of cases |
|------|-----------------|
| 2001 | 1 |
| 2002 | |
| 2003 | |
| 2004 | |
| 2005 | |
| 2006 | |
| 2007 | |
| 2008 | |
| 2008 | |
| 2010 | 2 |
| 2011 | |
| 2012 | |
| 2013 | |
| 2014 | 5 |
| 2015 | |
| 2016 | |
| 2017 | |
| 2018 | |
| 2019 | |
| 2020 | |
| 2021 | |
| 2022 | |

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References

- 1. Demina TV, Dzhioev YP, Verkhozina MM, et al. Genotyping and characterization of the geographical distribution of tick-borne encephalitis virus variants with a set of molecular probes. *J Med Virol*. 2010;82(6):965-976.
- 2. Tkachev S, et.al. Genetic diversity and geographical distribution of the Siberian subtype of the tick-borne encephalitis virus. Medical Biodefense Conference 2018; Munich.
- 3. Tkachev SE, Babkin IV, Chicherina GS, et al. Genetic diversity and geographical distribution of the Siberian subtype of the tick-borne encephalitis virus. *Ticks Tick Borne Dis.* 2019;11(2):101327.
- Suess J. Epidemiology and ecology of TBE relevant to the production of effective vaccines. *Vaccine*. 2003;21 Suppl 1:S19-35.
- Craig SC, Pittman PR, Lewis TE, et al. An accelerated schedule for tick-borne encephalitis vaccine: the American Military experience in Bosnia. *Am J Trop Med Hyg*. 1999;61(6):874-878.
- Sanchez JL Jr, Craig SC, Kohlhase K, Polyak C, Ludwig SL, Rumm PD. Health assessment of U.S. military personnel deployed to Bosnia-Herzegovina for operation joint endeavor. *Mil Med*. 2001;166(6):470-4.
- 7. Amicizia D, Domnich A, Panatto D, et al. Epidemiology of tickborne encephalitis (TBE) in Europe and its prevention by available vaccines. *Hum Vaccin Immunother*. 2013;9(5):1163-71.
- Hukić M, et al. Surveillance of wildlife zoonotic diseases in the Balkans Region. *Med Glas Ljek komore Zenicko-doboj kantona*. 2010;7(2):96-105.