



HISTORY ABOUT TBE AND TBE VIRUS IN CZECHOSLOVAKIA

Background

TBE virus was identified by Russian scientists in the Far East of Russia in the 1930s, followed by studying ecological aspects of virus/vector relationship and development of a TBE vaccine (see [Newsletter October 2023](#)). Outside of Russia, the first discovery of TBE virus was achieved in Czechoslovakia in Central Europe, while the Austrian physician Hans Schneider did pioneer work on recognition and description of clinical symptoms of TBE.

Results

Among the first regions affected by TBE virus was Beroun, a region southwest of Prague which reported many cases of meningitis and five fatalities in 1948.

František Gallia stands as a pioneering figure in the landscape of TBE virus research. In 1948, he isolated the five distinct TBE virus strains from patients in Beroun and later from other localities. The first successful isolation of the virus from *Ixodes ricinus* ticks was achieved in 1949. Gallia became infected in his lab and developed severe disease with incomplete recovery.

From April to July 1951, a lot of residents in Roznava and surrounding areas were suddenly struck by fever and flu-like symptoms. At first, the disease was thought to be a form of influenza, but then, the “Roznava disease” was identified as TBE, caused by the consumption of non-pasteurized milk. This alimentary outbreak affected more than 660 people, and 271 patients required hospitalization, and two infections were fatal. To prevent panic among the population, the relevant institutions prepared informational leaflets and broadcast explanatory announcements on the local radio. A mobile clinic

was set up and various epidemiological measures were implemented. Experts finally succeeded in pinpointing the source of the outbreak: Non-pasteurized goat milk had been mixed with milk from cows. The dairy which offered the goat milk had a broken pasteurization machine, which had remained unrepaired since World War II (despite local authorities claiming that the milk was pasteurized). Not a single case of disease had been reported in families who had boiled milk before consumption.

During the Roznava outbreak, the clinical symptoms were carefully analyzed and monophasic as well as biphasic patterns of disease were observed. The virus, which was isolated during the outbreak was termed “R”. Through complement fixation reaction testing, “R” was determined related to the western and eastern strains of TBE virus. Furthermore, antibodies to “R” were detected in patients recovered from disease.

Discussion

This article pays tribute to the Czechoslovak scientists who played pivotal roles in the discovery of TBE virus in Central Europe.

In the history of TBE outbreaks, the Roznava outbreak is the largest documented case. The discovery of TBE virus in Czechoslovakia in 1948 and the isolation of the virus was the first outside of the Soviet Union. The Roznava outbreak revealed a mode of transmission that was unexpected: non-pasteurized milk. In some regions, especially in Slovakia, dietary TBE remains a concern (see, for example, [Snapshot week 16/2022](#)). It is recommended to avoid raw dairy products and to receive a TBE vaccination as preventive measures.



Literature

Ruzek D, Kaucka K. A brief tale of two pioneering moments: Europe's first discovery of Tick-Borne Encephalitis (TBE) virus beyond the Soviet Union and the largest alimentary TBE outbreak in history. *Ticks Tick Borne Dis.* 2024;15(3):102314. doi:10.1016/j.ttbdis.2024.102314

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