

## **Tick borne-encephalitis (TBE) vaccine failures in Stockholm County, Sweden 2006-2015**

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Notification of TBE is mandatory in Sweden, and the reporting rate of laboratory verified disease is complete. Stockholm county is a high-incidence area despite about 50% vaccination coverage. The aim of this study was to describe vaccine failures, defined as TBE-disease despite adherence to the recommended vaccination schedule.

Patients were identified in the notification database at Department of Communicable Disease Control and Prevention in the county of Stockholm 2006-2015. All patients that were diagnosed with TBE despite adherence to the recommended vaccination schedule with at least two doses of vaccine were included. Clinical data were extracted from medical records.

We identified 55 (5.5%) vaccine failures among the 1004 patients with TBE during the study period. The median age was 62 years (6-83), 44 (80%) were over 50 years of age and 3 were children. Almost half of the patients were previously healthy individuals. The most common comorbidity was immunosuppression, accounting for one fourth of the patients. 22 (40%) of all patients showed symptoms and signs of severe meningoencephalitis, 22 (40%) moderate and 11 (20 %) mild. In addition, 19 (34,5%) showed signs of cranial nerve affection and/or spinal paresis in the acute phase of the infection. The majority of the patients had a monophasic clinical course.

Patients with vaccine failures were severely ill and the clinical course was typically monophasic. Old age and immunosuppression may explain the inferior response to vaccination. Data suggest that it might be necessary to reevaluate current vaccination recommendations to the age-group 50-60 years.