



CLINICAL CHARACTERIZATION OF THE CASES IN SWEDEN (2006-2015)

Background

In Sweden, approximately 300 to 600 tick-borne encephalitis (TBE) cases are reported annually. However, clinical data on TBE within Swedish healthcare remain scarce. A study was conducted to assess the clinical characteristics of adult TBE patients in the Region of Stockholm, one of the most highly endemic areas in Sweden (population: ~2.1 million), during the period 2006–2015.

Results

Between 2006 and 2015, data were collected from 703 patients, representing 81% of notified adult TBE cases in the Region of Stockholm. Vaccination data were available for 95% of these patients, of whom 82% were unvaccinated. Among the patients, 36% had underlying comorbidities, 4% were on immunomodulatory therapy, 75% required hospitalization, and 1.4% of cases were fatal.

Headache and fever were the most frequently observed symptoms during the acute phase (90.5% and 91.6%, respectively). Ataxia and dysphasia were the most common neurological signs (40.3% and 31.4%, respectively), while mental fatigue was the predominant cognitive symptom (78.4%). Post-acute care was required for 61% of patients, who either remained hospitalized or attended follow-up visits between two weeks and three months after the onset of infection.

Patients with underlying comorbidities were generally older and more likely to experience severe or moderate disease, requiring hospitalization or intensive care unit (ICU) treatment. The case fatality rate for this group was 3.3%, compared to 0.4% for patients without comorbidities. For those on immunomodulatory therapy, the case fatality rate rose to 15.4%.

Vaccination data revealed that 82% of patients were unvaccinated, 8% were fully vaccinated, and 10% were partially vaccinated. Among the partially vaccinated group, 31 individuals had received only one vaccine dose, while 18 had received two doses over a year prior to disease onset.

Discussion

This study represents the largest cohort of TBE patients in Sweden. The majority of cases involved unvaccinated individuals, with 75% requiring hospitalization (median stay: seven days). A significant proportion required ICU care, and 3% needed assisted ventilation. Of the 10 fatalities, 8 were men; however, the association between sex and disease severity was observed only in moderate cases and hospitalization rates.

Patients aged over 50 were more likely to experience prolonged hospitalization, with comorbid conditions identified as a key prognostic factor for severe disease. Previously vaccinated patients tended to be older, with more comorbidities and higher rates of immunomodulatory treatment. They also experienced more severe disease, and longer hospital stays compared to both unvaccinated and partially vaccinated individuals.

As vaccination rates increase, a growing number of breakthrough infections are expected. Understanding these infections will be critical for managing TBE in the future.

Literature

Bartholdsson et al.
Tick-borne encephalitis clinical characteristics in adult patients: A 10-year retrospective study in Stockholm, Sweden. *J Infect Dis*. 2024.
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