



SEQUELAE OF TBE

Background

About 2,500 TBE cases are reported yearly in Europe, of which the acute phase is relatively well described with typical symptoms such as meningitis, encephalitis, and myelitis. In Germany, most cases (about 85%) occur in the federal states of Baden-Wuerttemberg and Bavaria (southern Germany). An intensified surveillance of adult and pediatric TBE cases has been carried out in these two federal states from 2018–2020, and data about the acute phase have recently been discussed ([Newsletter April 2023](#)). In addition to the acute symptoms during the phase of illness, sequelae were systematically characterized and quantified over a period of 18 months after symptoms onset. Besides sequelae, consequences of TBE such as health service utilization and consequences on work and school performance have also been studied.

Results

The overall compliance of the study was high with a follow-up participation of 93.7% (523 of 558 cases). Nearly half of the cases had comorbidities before onset of TBE, mostly comorbidities of the CNS, hypertension, and chronic-inflammatory comorbidities.

About half of the cases had recovered by the first interview with a median of about 93 days after onset, and 67.3% had recovered after 18.1 months. Full recovery was reported by 85.4% of cases with mild acute disease, 69.4% with moderate disease, and 44.9% with severe disease. Full recovery was more often seen in children compared to adults (94.9% vs. 63.8%), and recovery was less common among patients with comorbidities than among those without (56.9% vs. 75.2%). Recovery was not significantly associated with sex, but comorbidities were associated with a lower recovery rate.

Patients reported substantial health-care utilization, of whom 3.3% were granted long-term care insurance. A high percentage of patients reported receiving physiotherapy, occupational therapy, speech therapy, memory training or physical support. Most health services were covered by health insurance, but numerous cases reported out-of-pocket expenses – at a median of 200 Euro (52.2%) or 450 Euro (more than 10%).

Most patients required extensive sick leave on top of the days spent in hospital. Nearly a third of patients reported negative impacts on work performance, and 1.2% retired prematurely. 23.3% of schoolchildren reported limitations including cognitive problems, increased fatigue, and deterioration in fine motor skills. Four children received worse grades and one pupil had to repeat a school year.

Discussion

The observed proportion of cases with sequelae agreed with previous research and the nature of sequelae were predominantly in cognitive function, balance, ataxia, and fatigue. Recovery depended on age, with cases older than 40 years recovering at a 45% lower rate than cases aged 18–39 years.

There was a link between severity of acute TBE and lasting sequelae. The recovery rate for comorbid patients was 22% lower than for patients without comorbidities. The high observed level of additional services beyond rehabilitation often meant significant out-of-pocket expenses.

The high and sometimes long-lasting level of morbidity and health-care utilization underlines the urgent need for improved TBE prevention/vaccination.



Literature

Nygren et al.
Recovery and sequelae in 523 adults and children
with tick-borne encephalitis in Germany
Infection. 2023;1-9. doi:10.1007/s15010-023-
02023-w

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