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Health-related quality of life after tick-borne encephalitis in southern Germany in 2018-2020: a matched case-control study

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Background
Tick-borne encephalitis (TBE) is a vaccine-preventable neurological disease endemic in parts of Germany (~600 cases/year), yet evidence on its impact on health-related quality of life (HRQoL) is limited.

Methods
Adults and children with laboratory-confirmed TBE (2018–2020, Bavaria/Baden-Württemberg) were surveyed initially (t1, median 126 days after onset) and ~1.5 years later (t2); frequency-matched controls (age, sex, region) once at t1. We assessed eight Neuro-QoL domains spanning physical, cognitive, and psychosocial function. Impairment (>0.5 SD from norm) was compared by time point and age group using conditional logistic regression adjusted for age, sex, and region.

Results
The analysis comprised 542 cases and 481 controls at t1, and 499 cases at t2. At t1, adult cases showed higher impairment than controls across all domains, most markedly for cognitive function (38% vs. 8%) and social roles (34% vs. 11%); impairment remained elevated at t2 (cognitive function 30%). Regression confirmed significantly elevated odds of impairment in adult cases in every domain at both time points (all p<0.001), peaking at t1 for cognitive function (OR 2.93). At t2, ORs ranged from 1.79 (depression) to 2.71 (upper extremity function). In children, impairment was lower.

Conclusions
TBE imposes a substantial, persistent burden on HRQoL across functional and psychosocial domains, underscoring the importance of prevention and informing immunisation recommendations.

Keywords

Encephalitis, Tick-Borne; Quality of Life; Patient Reported Outcome Measures; Case-Control Studies; Recove

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181

Professional Status of the Speaker

Postdoc

Junior Scientist Status

Yes, I am a Junior Scientist.

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