OptiNIV – Optimization of post-clinical intensive care for neurological patients

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Background: Over the past two decades, the number of patients who, following inpatient intensive care treatment, still require mechanical ventilation and/or a tracheostomy tube and therefor need community-based intensive care (AIP) has increased significantly in Germany [1]. Despite the high standard of neurological early rehabilitation (NER), which maximises patients' recovery potential, patients still experience prolonged recovery periods well beyond their stay in NER facilities [2]. It was hypothesized that the home care situation and further recovery could be enhanced by supporting the existing community-based intensive nursing care with specialised outreach care teams from regional NER centres. These teams would follow a structured, interdisciplinary treatment approach. Furthermore, if these teams identify candidates for complete weaning or decannulation these patients were to be re-admitted to the NER facility for further inpatient neurorehabilitation including weaning. Supported in this way, patients might recover to the point where community-based intensive nursing care is no longer required. The design of the OptiNIV study was published in detail by Platz et al. [3]. Here, we report on first experiences by the outreach team from the NER hospital in Bad Aibling.

Methods: The OptiNIV study is a combined healthcare project and multicentre, open, parallel-group randomised controlled trial conducted in Bavaria aimed to evaluate the impact of a novel from post-discharge intersectoral expert care on decannulation and/or weaning rates, as well as other clinical and economic outcomes in the first years after discharge from NER [3].

Hypothesis and Objectives: The rehabilitation of patients with neurological disorders is a challenging endeavour, frequently requiring prolonged periods of treatment and frequently resulting in only partial recovery [4]. During inpatient neurorehabilitation treatments are administered by an interdisciplinary team, comprising physicians, therapists from various disciplines, specialized nursing staff and social workers. Due to the interdisciplinary and goal-oriented work, constant communication and frequent adjustments of treatment, these teams make inpatient neurorehabilitation effective and beneficial for many neurological patients, also in terms of the long-term outcome [5, 6]. The transfer of such a concept seems feasible and might enable patients who are not weaned/decannulated during the course of inpatient neurorehabilitation to achieve these goals after discharge to community-based intensive care units.

The OptiNIV project is therefore focused on the implementation of specialized post-discharge follow-up visits by outreach neurorehabilitation teams, managed care and treatment plans applied in community-based intensive care units, structured brief inpatient assessments at the regional neurorehabilitation centres to identify patients with the potential to be decannulated weaned, and the implementation of further rehabilitation stays to most likely accomplish these goals. The objective of this parallel-group randomised controlled trial is to examine whether this new form of post-hospital care is superior to standard care and increases the rates for decannulation and/ or weaning during the first 12 month post-discharge from inpatient care [3].

Outlook and Results: The recruitment phase started in January 2022 and was completed in January 2024, 113 patients across all participating centres (n=12) were included. Followed by the outreach team based at the Schoen Clinic Bad Aibling (SCBA), 38 patients were enrolled. As would be expected from published studies, a high mortality was observed in these critically ill patients.

To date, seven of the 38 patients (18%) have died before the conclusion of the study follow-up period of one year post-discharge from NER. A total of five participants have completed the study period of one year. Another 25 patients are still being cared for until the end of the study in January 2025. So far, three patients from the intervention group have been readmitted to the SCBA for a structured short inpatient assessment and to continue with an individualised rehabilitation programme, as there was a potential for decannulation/weaning. Individual benefits were achieved during these rehabilitations stays. Two patients from the experimental group have been decannulated, whereas no patients in the control group were decannulated in the subsample of SCBA.

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