Editorial

Creating Necessary Structures

The Need to Work Across Sectoral Boundaries

Tobias Welte

Editorial
to accompany the
articles:
“Prolonged Weaning
From Mechanical
Ventilation”
by Wolfram
Windisch et al.
and
“Weaning From
Invasive Ventilation
in Specialist Centers
Following Primary
Weaning Failure” by
Florian Bornitz et al.
in this issue of
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This issue features two studies that address the weaning of patients from long-term mechanical ventilation. Windisch et al. (1) evaluated data from the WeanNet registry of the German Respiratory Society. With information on more than 11 000 patients, this registry is the largest collection of such data worldwide. Of the 11 424 patients analyzed, 7346 (64.3%) were successfully weaned, 1658 (14.5%) died at the specialized weaning center, and 2420 (21.2%) could not be weaned and were transferred to home mechanical ventilation (HMV). The rate of successful weaning grew from 60% to 66.2% during the study period, and simultaneously the time required for weaning sank from 22 days to 18 days. These trends demonstrate the effectiveness of WeanNet’s certification procedure for quality assurance, taking account of the weaning center’s staffing, infrastructure, and clinical processes.

Many more patients could be successfully weaned

Bornitz et al. (2) carried out a prospective controlled trial in three university hospital weaning centers. With 61 patients, the study is much smaller than that of Windisch and colleagues, but the follow-up period was a whole year. The main difference, however, is that the authors included only patients in whom long-term invasive ventilation was already envisaged, e.g., after a failed attempt at weaning in the hospital. Nevertheless, 50 patients (82%) were successfully weaned; 11 patients were transferred to HMV. The 1-year survival rate was higher in the group without invasive ventilation (90% versus 55%).

Moreover, both studies indicate the categories of patients for which weaning from ventilation is difficult: Elderly people with pre-existing chronic underlying diseases, in particular neuromuscular diseases, low body weight, and an extended period of ventilation before commencement of the weaning process had a poor prognosis—in terms of both weaning and survival.

Although neither study attempted to measure quality of life, this is very likely to be far higher among patients without long-term ventilation than in ventilated patients. At a conservative estimate, half of the patients could be spared invasive ventilation at home, with the associated considerable worsening of their quality of life, if they were discharged to a weaning center rather than transferred to HMV.

Direct transfer from the ICU to home mechanical ventilation has become the norm

The number of cases of inpatient treatment of patients on long-term ventilation in Germany increased from around 25 000 in 2006 to 86 000 in 2016 (3). Simultaneously, numbers of hospital beds, particularly intensive care beds, have decreased as a result of political decisions, e.g., the introduction of minimum staffing levels. The shortage of nurses is also intensifying, leading to mothballing of intensive care beds across the country. Pressure is growing to swiftly reactivate intensive care beds in order to be able to meet day-to-day demands. At the same time, intensive care in the out-of-hospital setting has expanded considerably in recent years. A recent master’s thesis documents the increase in care facilities in the community offering ventilation (4). The current number of patients receiving ventilation at sites other than hospitals in Germany is estimated at 15 000–30 000 (5), although reliable data are lacking. The direct transfer from the intensive care unit to HMV is increasingly becoming the norm. On both medical and economic grounds it thus seems preferable to invest more heavily in the expansion of weaning centers than in increasing HMV facilities.

Weaning—a prime example of the problems faced by intensive care medicine

Large numbers of nurses have left their jobs in hospitals to work in the community, e.g., in facilities offering ventilation. One can only speculate about the reasons: according to a recently published survey by the German Society for Internal Critical Care and Emergency Medicine (*Deutsche Gesellschaft für Internistische Intensiv- und Notfallmedizin*), the nurses’ main motivations for changing their employment are lower workload, greater appreciation, and better payment (6). Community facilities seem to have advantages over hospitals in these respects. In addition, an article published in this journal shows that more than 10% of deaths in Germany now take place in intensive care units, with the proportion increasing year by year (7). The question of how and where individual patients would like to spend the last part of their lives and how they want to die is becoming a significant problem for our society.

The resources for intensive care, regardless of the setting, are limited. In future, the indication for the use of intensive care procedures will have to be redefined,

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taking into account the patients' preferences and validated indications of success.

Creating structures to solve certain problems

Demands to decrease the numbers of hospital beds in Germany are made on a daily basis. Both of the studies in this issue show how necessary it has become to create structures that will solve certain problems. Further examples of groups with special requirements are patients receiving palliative treatment at the end of life and patients who would not have to be in hospital if appropriate care could be delivered to them at home. It may be that these patients' needs cannot be met by hospitals alone, but it cannot be society's goal to reduce beds without creating the necessary structures. Not least, the current situation with the coronavirus SARS-CoV-2 shows clearly that a system which has to run at capacity to meet daily requirements can encounter severe difficulties in a crisis.

The mismanagement in the field of HMV shows that our healthcare system lacks a long-term strategy and an all-embracing societal perspective. We cannot avoid a debate about intensive care and the end of life, whether the focus is on a dignified death or on the concrete planning of intensive care facilities such as weaning centers.

Conflict of interest statement

The author declares that no conflict of interest exists.

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CLINICAL SNAPSHOT

Distal Phototoxic Onycholysis

A 23-year-old woman presented with painful detachment of the distal half of all her fingernails. On questioning about her medical history, she reported taking a tetracycline antibiotic (doxycycline 100 mg/d) for the past 5 weeks. This had been prescribed in connection with prevention of malaria during a trip to West Africa, which is in accordance with the recommendations of the World Health Organization and the German Society for Tropical Medicine and Global Health but represents off-label use in Germany. The patient's toenails were only slightly affected, and no other adverse effects occurred. She had taken the same substance for malaria prevention over a 4-month period in 2014, with no undesired effects. She discontinued the intake of doxycycline after her consultation with us, and 4 months later nearly all of her nails were again normally attached. Distal phototoxic onycholysis and discoloration of the nails are known rare (<1:1000) adverse effects of tetracyclines, and this should be explained whenever these substances are prescribed.

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