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ORIGINAL ARTICLE

Psychological wellbeing, health related quality of life and memories of intensive care and a specialised weaning centre reported by survivors of prolonged mechanical ventilation

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Summary
Objective: To compare memories and recall of intensive care unit and specialised weaning centre admission, characterise health-related quality of life and psychological morbidity, and examine the relationship between delusional memories and psychological outcomes.
Methods: We recruited participants following hospitalisation that included ICU admission and subsequent weaning in a specialised centre. We administered validated questionnaires to assess memory and recall of both care locations, anxiety, depression, post-traumatic stress symptomatology and health-related quality of life.
Results: Of 53 eligible patients discharged from the weaning centre over seven years, we recruited 27 participants. Participants had similar numbers of factual and feeling memories but reported more delusional memories for ICU than the weaning centre (1.6 vs. 0.7, $P = 0.004$). Nine (39%) participants scored ≥ 11 on the hospital anxiety and depression scale (anxiety) and were more likely to experience delusional memories ($P = 0.008$). Thirst (70%), no control (70%), noise (65%) were most frequently recalled ICU experiences. Procedures (83%), night awakening (70%), inability to sleep (70%) most frequently recalled from the weaning centre.

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Conclusion: Delusional memories and anxiety disorder were prevalent and associated suggesting interventions to ameliorate delusional memories may reduce anxiety. Difficulty sleeping and thirst were common experiences.

Implications for Clinical Practice

- Assessment of, and interventions to relieve, anxiety both during and after hospitalisation are important considerations for patients experiencing protracted weaning.
- Recall of delusional memories in both the ICU and PWC suggest patients experience delirium which may be protracted and occurs in spite of delirium prevention strategies such as sedation minimisation and restoration of day/night cycle endorsed in the PWC.
- ICU experiences such as thirst, trouble falling asleep, experiencing lack of control, and missing family/friends are potentially modifiable and emphasise the need for patient and family centred ICU care.
- Clinicians should also be aware that TTs may cause substantial pain and discomfort and consider strategies to remediate this.

Introduction

Patients experiencing prolonged mechanical ventilation (PMV) are at risk of psychological morbidity due to difficulty communicating, anxiety and dyspnoea during weaning trials, and concerns about long-term prognosis (Arslanian-Engoren and Scott, 2003; Engström et al., 2013). Jubran and colleagues found 42% of 336 PMV patients undergoing daily weaning trials had depressive disorders (Jubran et al., 2010a) and in a sub-study of 41 successfully weaned patients, 12% met diagnostic criteria for posttraumatic stress disorder (PTSD) (Jubran et al., 2010b). Anxiety is also highly prevalent when undergoing mechanical ventilation (Chlan, 2003), during weaning trials, and in intensive care unit (ICU) survivors (Kress et al., 2003; Tate et al., 2012). Emotional distress and psychological morbidity remain a significant problem for ICU survivors for months to years after hospital discharge (Adhikari et al., 2011; Myhren et al., 2010; Ringdal et al., 2010).

In addition to fear and panic associated with dyspnoea and weaning, patients report anxiety due to distorted perceptions and delusional memories of ICU admission (Engström et al., 2013). Unpleasant and sometimes delusional memories have been reported by 25—75% of ICU survivors (Jones et al., 2001; Ringdal et al., 2006; Samuelson, 2011). Studies in trauma (Ringdal et al., 2009, 2010) and mixed ICU populations (Badia-Castello et al., 2006; Jones et al., 2001, 2007) demonstrate an association between delusional memories and worse psychological outcomes including anxiety, depression, and PTSD. Delusional memories also have been associated with prolonged ICU stay and PMV (Myhren et al., 2009), worse baseline severity of illness, increased sedation (Ringdal et al., 2009; Samuelson et al., 2006, 2008) and analgesic medications, infections, and fever (Capuzzo et al., 2004). Conversely, facilitation of increased factual memories using strategies such as sedation minimisation, sleep promotion, and restoration of day-night cycle may decrease delusional memories and reduce psychological morbidity (Jones et al., 2001).

Specialised weaning centres (SWCs) admit patients from ICUs experiencing PMV, generally more than 21 days, and multiple failed weaning attempts. Their objective is to provide an alternative care venue to the ICU that not only facilitates weaning but also improves psychological well-being (MacIntyre et al., 2005). In comparison to ICUs, characteristics of SWCs likely to ameliorate the possible psychological impact of ICU admission include: restoration of the day—night cycle, minimal or no sedation, less exposure to potentially disturbing events occurring to other patients, increased privacy, liberal visitation policies, promotion of independence and individuality, and greater access to psychological services (MacIntyre et al., 2005; Rose and Fraser, 2012). For these reasons survivors of admission to both an ICU and SWC may have different memories and recall of stressful experiences which may impact psychological wellbeing. Our objectives were to describe memories and recall of stressful experiences of the ICU and the SWC, to characterise health related quality of life (HrQoL) and psychological morbidity, and to examine the relationship between delusional memories and psychological outcome.

Methods

Patient selection and study sample

Potential participants were identified through the Prolonged-ventilation Weaning Centre (PWC) database. The PWC is an 8-bed unit within an acute care hospital (Toronto East General Hospital (TEGH)) situated in Ontario, Canada that accepts referrals from ICUs across the province. Admission criteria comprise prior ventilation for $\geq$21 days in an ICU, medical stability, and considered 'weanable' within 90 days (maximum programme duration) (Rose and Fraser, 2012). The interprofessional programme comprises individualised weaning and mobilisation treatment plans; communication and swallowing therapy, occupational therapy, dietetic, psychiatric, and social work assessment; and, if required, palliative, pain, and wound care consultation. Eligible patients were adults >18 years admitted to the