Does the Sara Combilizer® reduce the time taken to first mobilise ventilated patients in ICU?

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Introduction

There is a growing body of evidence to support programmes of early mobilisation within intensive care units. When utilised, early mobility is associated with reduced ICU and hospital length of stay (McWilliams et al, 2014) alongside improved functional outcome in both the short and long term (Schweikert et al 2009). The exact definition of early mobility is still not defined, and actual ability to mobilise can be limited by certain factors such as haemofiltration, airway stability or the use of inotropes (Garzan-serrano, 2012). The *Sara Combilizer* is a combined tilt table and stretcher chair, which aims to allow earlier transfer of patients into the chair.
As transfer is passive via the use of a patslide (or similar), it is hypothesised this should allow patients to sit out earlier in their intensive care stay, which may subsequently further improve outcomes.

Objective

This study aimed to assess whether the introduction of the *Sara Combilizer* reduced time taken to mobilise, defined as sitting on the bed edge or out of the bed for the first time.

Method

Patients admitted to a large UK critical care unit during the trial period and ventilated for ≥ 5 days were included in the study. Baseline data was collected prospectively for a period of 4 months.

The Sara Combilizer was then introduced for a 1 month training and familiarisation period, followed by a further 4 months prospective data collection. The primary outcome was time to first mobilisation, defined as a Manchester Mobility Score ≥ 2. Secondary outcomes were SOFA score at time of first mobilisation, MMS at critical care discharge, ICU length of stay and duration of mechanical ventilation.

Results

Following the introduction of the *Sara Combilizer*, time taken to mobilise reduced significantly from 13.6 to 10.6 days (p=0.028). SOFA scores were significantly higher at the point of first mobilisation in the Combilizer group (mean: 2.9 ± 0.5 vs 5.1 ± 2.4; p=0.005). There was no statistical difference in therapy time between the groups, or ICU or hospital length of stay.

Order code	Baseline group (n = 31)	Sara Combilizer group (n = 32)	p-value
Sara Combilizer used	0 (0%)	15 (47%)	-
Time to first mobilisation (days)	13.6 (11.7 - 15.8)	10.6 (9.1 - 12.4)	0.028
SOFA score at 1st mobilisation	2.9 (0.5)	5.1 (2.4)	0.005
Sedation days	7.2 (5.9 - 8.7)	5.6 (4.7 - 6.6)	0.066
Ventilation days	11 (6, 15)	8 (6, 12)	0.104
ICU dependency days	15.6 (12.9 - 19.0)	13.3 (11.4 - 15.5)	0.201
ITU length of stay (days)	17.1 (14.3 - 20.5)	15.3 (13.3 - 17.5)	0.331

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Conclusions

The introduction of the *Sara Combilizer* was associated with a significant reduction in time to mobilise patients ventilated for ≥ 5 days, and patients were mobilised with a higher degree of organ failure. This was achieved without any increase in therapy time. The *Sara Combilizer* may be a useful adjunct to an early mobility protocol within the ICU.

Impact and Implications

The introduction of the *Sara Combilizer* may allow early mobilisation of patients previously deemed to be high risk within critical care. If instituted this early mobilisation may reduce the physical impact of critical care stay and improve long term functional outcomes.

Figure 1. ***Manchester Mobility Score***

1. *In bed interventions (Passive Movements, Active exercise, chair position in bed)*
2. *Sit on edge of bed,*
3. *Hoisted to chair (incl. standing Hoist),*
4. *Standing practice*
5. *Step transfers with assistance,*
6. *Mobilising with or without assistance,*
7. *Mobilising > 30m*

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Sara Combilizer early and structured mobility protocol