

despite receiving supportive care and physiotherapy. Such weakness contributes for poor outcome. Early mobilization may enhance functional recovery, reduce days in mechanical ventilation, shorten ICU and hospital length of stay, decrease the incidence of delirium and improve survival. A great part of ICU patients are on vasoactive drug therapy, but there are few data in literature about the safety of mobilization in this group. Therefore our study aimed to prove that early mobilization even of patients using low dose of vasoactive drugs is safe and feasible.

Methods: We assigned patients who were using or not low dose of vasoactive drugs to receive 2 daily sessions of physiotherapy during their ICU length of stay and analyzed their tolerance. The exercises consisted in 3 levels of mobilization: level 1 were passive exercises, level 2 were active exercises and level 3 were orthostatic position and walking. Heart rate, respiratory rate, peripheral oxygen saturation and MAP were evaluated in 3 moments: before the physiotherapy session, immediately after and 30 minutes after.

Results: 154 patients were followed from November 3, 2015 to November 20, 2015. 50.6% of patients were men. Mean age was 71.1 in vasoactive group and 73.4 in control group. Mean SAPS 3 score was 73.6 in vasoactive group and 62.7 in control group ($p < 0.05$). The types of vasoactive drugs were 53.5% norepinephrine, 45.1% nitroprusside and 1.4% nitroglycerine. We removed from bed and putted on the seating position 34.7% of patients in the vasoactive group and 57.3% in the other group. There weren't complications statistically significant. During the exercises there were changes on MAP, but with no major event associated, though increase in dose of vasoactive drug ($p > 0.05$). The only statistically significant difference between the two groups was increase in MAP in the vasoactive group immediately after mobilization (from mean MAP of 84.02 to 87.0). The mean dosage in mcg/kg/min of norepinephrine was 0.0117, nitroprusside 0.098 and nitroglycerin 0.278.

Conclusions: Our study showed that mobilization of patients on low dose of vasoactive drugs therapy may be possible and safe, with little complications and no major changes in MAP. These data are very important to encourage early mobilization of patients in ICU and to ameliorate their outcomes.

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Pharmacy intervention at an intensive care rehabilitation clinic

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Introduction: During an intensive care stay, patients often have their chronic medications withheld for a variety of reasons and new drugs commenced [1]. As patients are often under the care of a number of different medical teams during their admission there is potential for these changes to be inadvertently continued [2]. Intensive Care Syndrome: Promoting Independence and Return to Employment (In-S:PIRE) is a five week rehabilitation programme for patients and their caregivers after ICU (Intensive Care Unit) discharge at Glasgow Royal Infirmary. Within this programme a medication review by the critical care pharmacist provided an opportunity to identify and resolve any pharmaceutical care issues and also an opportunity to educate patients and their caregivers about changes to their medication.

Methods: During the medication review we identified ongoing pharmaceutical care issues which were communicated to the patient's primary care physician (GP) by letter or a telephone call. The patients were also encouraged to discuss any issues raised with their GP. The significance of the interventions was classified from those not likely to be of clinical benefit to the patient, to those which prevented serious therapeutic failure.

Results: Data was collected from 47 of the 48 patients who attended the clinic (median age was 52 (IQR, 44-57) median ICU LOS was 15 (IQR 9-25), median APACHE II was 23 (IQR 18-27) and 32 of the patients were men (67%). The pharmacist made 69 recommendations; including 20 relating to drugs which had been withheld and not restarted, dose adjustments were suggested on 13 occasions and new drug recommendations were made for 10 patients. Duration of

treatment for new medications started during hospital admission was clarified on 12 occasions. Lastly adverse drug effects were reported on 4 occasions and the incorrect drug was prescribed on 2 occasions. Of the interventions made 58% were considered to be of moderate to high impact.

Conclusions: The pharmacist identified pharmaceutical care issues with 18.6% of the prescribed medications. Just over half of the patients reported that they were not made aware of any alterations to their prescribed medication on discharge. Therefore a pharmacy intervention is an essential part of an intensive care rehabilitation programme to address any medication related problems, provide education and to ensure patients gain optimal benefit from their medication.

References

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Interactive gaming is feasible and potentially increases icu patients' motivation to be engaged in rehabilitation programs

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Introduction: Light sedation has gained attention as part of standard daily care in the intensive care unit (ICU). Particularly early mobilization is associated with shorter time on the ventilator, shorter ICU length of stay and better survival. Interactive gaming may be a challenging way of engaging the patient in his own rehabilitation program. Few data are available for the use of these interactive games in the ICU environment as part of daily routine physiotherapy, although one study showed that it was safe [1].

Methods: We developed a trolley with a Wii device that can be easily used when the patient is mobilized in a chair. In addition, we used the Mile™ device with a bedcycle and hypothesized that this would be associated with increased motivation to use the bedcycle by our patients.

Results: Patients liked to use the Wii device, particularly because a choice in games made it more interesting to use. Tennis, bowling and boxing were most frequently used. The use of the Wii was programmed in the daily mobilization schedule together with a physiotherapist, or just with the attending ICU nurse.

The mile™ bed-cycle device was used routinely since October 2015 with interesting results. Patients could choose the environment where they wanted to cycle around, e.g. "slot Zeist", in the woods or using a water-cycle in the colourful village of Giethoorn. In parallel to the observation with the Wii device, patients liked the variety in scenes best. A study is in progress evaluating safety, as well as effects on motivation of patients using these interactive games in the ICU.

Conclusions: The use of interactive video games as part of routine rehabilitation programs in the ICU environment is feasible and appears safe in this short observation period. Interactive game therapy may complement existing rehabilitation techniques and increase motivation for ICU patients to be engaged in their own rehabilitation program.

Reference

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Simulation-based design of a robust stopping rule to ensure patient safety

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