8.23 The prevalence of physiological abnormalities and adverse events during rehabilitation physiotherapy in Tallaght University Hospital (TUH) intensive care unit (ICU).

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Background: Physiological abnormalities or adverse events may occur in patients receiving rehabilitation during their ICU stay. The recent TEAM trial showed that early mobilisation did lead to more adverse events potentially due to rehabilitation intervention [1]. The aim of this study was to estimate the incidence and the degree of severity of physiological abnormalities or adverse events during rehabilitation physiotherapy provided in TUH ICU. Identifying these events may help improve patient safety and care.

Methods: Prospective observational study of adult patients admitted to ICU. All physiotherapy interventions involving rehabilitation were recorded over a 7 week period. Physiotherapists recorded the occurrence of any adverse event and physiological abnormality during their interventions with each patient.

Results: 254 rehabilitation interventions were recorded involving 87 different patients. Respiratory support ranged from invasive ventilation (n=32), airvo (n=29), oxygen (n=66) to no support (n=124). Two adverse events both involving a dangerous cardiac rhythm which resolved once treatment terminated were recorded [See Table 1]. This reflects an incidence of 0.8% for adverse events per rehabilitation intervention. 43 interventions involved one (n=36) or more (n=7) physiological abnormalities [Figure 1] reflecting an incidence of 17%. These were all of Grade 1 or 2 severity [2] [Table 2] indicating a near miss or mild harm for a short duration.

Conclusion: This study illustrates an extremely low rate of adverse events during ICU rehabilitation. Rehabilitation in critical care can cause patients to have physiological abnormalities but these are of a mild nature and for a short duration.

Keywords: ICU rehabilitation, physiological abnormalities, adverse events.

Conflict of Interest: The authors declare that they have no conflict of interest.

References

1. Early Active Mobilization during Mechanical Ventilation in the ICU. N Engl J Med 2022; 387:1747-1758.
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Table 1

Adverse Events
Falling to the floor
Cardiac arrest
Rapid AF (>150BPM), VT or other dangerous rhythm
SaO2 < 80% for > 3mins
Unplanned extubation/decanulation
Line removal requiring urgent replacement
Decreased systolic bp 30% for 30mins
Increased systolic bp 50% for 30mins
HR>150bpm for 15mins

Figure 1. Physiological Abnormalities

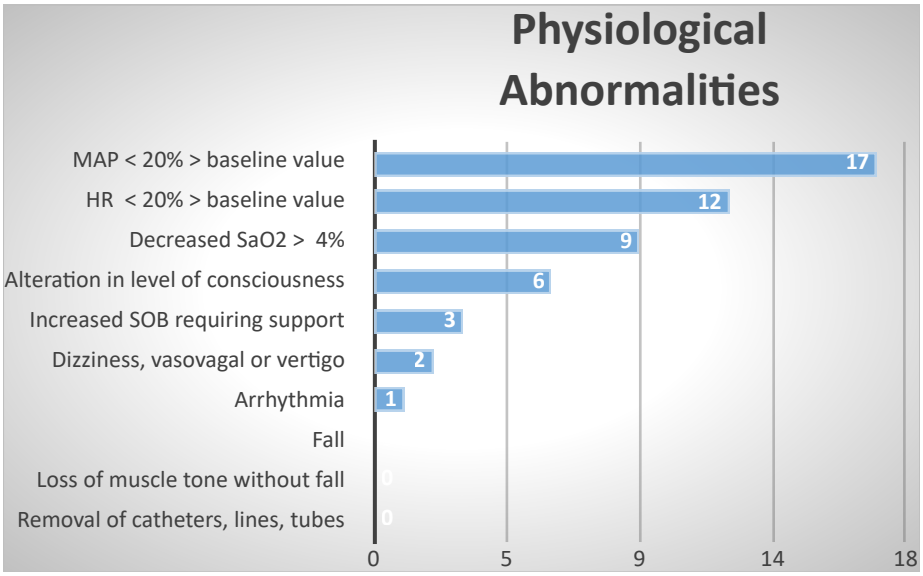

Table 2.

Grade I (near miss), when the potential incident did not affect the patient, by being detected before it happened (e.g. an increase heart rate greater than 20% during Physical Therapy interventions that returned to baseline without vasoactive drug doses adjustment)
Grade II (mild harm), when mild symptoms and/or loss of function occur, and/or there is minimal or intermediate harm of short duration with minimal intervention required
Grade III (moderate harm), requires significant intervention of the team and/or needs increase of stay, and/or causes long-term harm or loss of function

Grade IV (severe harm), life-threatening consequences and urgent intervention indicated
Grade V (death), death caused or anticipated by the adverse event