Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Iris Brunner

Title of dissertation: Evaluation of activity distribution and circadian rhythm in patients with severe acquired brain injury

Date for defence: 29.04.2021 at (time of day): 14-16 Place: Online

Press release (Danish)

Aktivitetsfordeling og døgnrytme hos svært hjerneskadet patienter

Gennem de seneste årtier har der været øget fokus på at sikre, at patienter indlagt til behandling i sundhedsvæsenet både tilbydes tilstrækkelig aktivitet, samt sikres en nok hvile og understøttelse af relevant døgnrytme. Patienter med svær hjerneskade indlagt til hospitalsbaseret neurorehabilitering er ingen undtagelse. Hvile og døgnrytme hos patienter med erhvervet hjerneskade er forbundet med en lang række sundhedsgavnlige effekter, såsom fordring af motorisk genindlæring, konsolidering af hukommelse og stigning i det generelle bevidsthedsniveau. Viden om aktivitetsfordeling og døgnrytme hos denne patientgruppe er dog meget sparsom, men nu sætter et nyt ph.d.-projekt fra Aarhus Universitet fokus på området. Ph.d.-projektet har de sidste tre år undersøgt aktivitetsfordeling under indlæggelse og døgnrytme i de første 3-4 ugers indlæggelse af den sub-akutte rehabilitering. Projektet er gennemført af Simon Svanborg Kjeldsen, der forsvarer det d. 29/04-2021.

Objektiv måling af aktivitetsfordeling og døgnrytme samt viden om hvorvidt døgnrytme er til stede, kan i fremtiden understøtte både udvikling og videnskabelig afprøvning af interventioner, der er målrettet forbedring af indlagte patienters døgnrytme. Derudover kan den nye viden underbygge kliniske refleksioner omkring valg af rehabiliteringsindsatser i individuelle forløb. Da patienter med svær hjerneskade ofte har svært ved at udtrykke sig grundet svækket bevidsthed og lammelser, har dette ph.d.-projekt undersøgt patienternes aktivitetsfordeling ved hjælp af systematisk adfærdsmæssig kortlægning. Døgnrytme er undersøgt ved hjælp af accelerometriske optagelser og optagelser af puls. Da patienter med svær hjerneskade på mange måder afviger fra normalen, er der i ph.d. projektet også udviklet en ny model til vurdering af døgnrytme fra dag til dag.
Forsvaret af ph.d.-projektet er offentligt og finder sted den 29/4 kl. 14 i Mødelokale 3, Regionshospitalet Hammel Neurocenter, Voldbyvej 15, 8450 Hammel, men er kun åbent for offentlig deltagelse via online session grundet COVID-19. Link til session kan tilsendes ved kontakt til Ulla.Hedegaard@midt.rm.dk . Titlen på projektet er ”Evaluation of activity distribution and circadian rhythm in patients with severe acquired brain injury”.
Yderligere oplysninger: Ph.d.-studerende Simon S. Kjeldsen, e-mail: Simkje@rm.dk, tlf. +45 78419076.

Assesment comitee:
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Cecilie Røe, Professor 2 (Second chair). Department of Physical Medicine and Rehabilitation, University of Oslo, Oslo, Norway

Simon Tilma Vistisen, Associate professor (Chair). Department of Clinical Medicine – Anaesthesiology, Aarhus University, Aarhus, Denmark

Press release (English)

Activity distribution and circadian rhythm in patients with severe acquired brain injury

Over the past decades, there has been an increased focus on ensuring adequate activity but also sufficient rest and circadian rhythm in patients admitted for treatment in the healthcare sector. Patients with severe acquired brain injury are no exception. Rest and adequate circadian rhythm are associated with a wide range of health-promoting benefits. Among these are improved motor relearning, consolidation of memory, and increased consciousness. However, knowledge of activity distribution and circadian rhythm in this specific population is scarce. Therefore, a new Ph.D. project from Aarhus University, Health, has shed light on this area. For the past three years, the Ph.D. project has examined the activity distribution during admission and the circadian rhythm in the first 3-4 weeks of the subacute rehabilitation of patients with severe acquired brain injury. The project was carried out by Simon Svanborg Kjeldsen, who is defending his dissertation on 29/04-2021

The objective measurement of activity distribution and circadian rhythm including the knowledge of the presence or absence of circadian rhythm may support the development and evaluation of interventions targeting improved circadian rhythm. Moreover, obtaining this knowledge may act as a support for the clinical reflections regarding the choice of rehabilitation interventions in the individual rehabilitation plan. Patients with severe acquired brain injury often have difficulties in expressing themselves because of impaired consciousness and/or paresis. Therefore, this Ph.D. project investigates the patients' activity distribution through behavioral mapping. Circadian rhythm is investigated using recordings of accelerometry and heart rate. Because patients with severe acquired brain injury in many ways differ from normality, a novel method for the evaluation of day-to-day circadian rhythm has been developed in this Ph.D. project.
The defense is public and takes place on 29/04 -2021 at 14-16 in Meeting room 3, Hammel Neurorehabilitation Centre and University Research Clinic, Voldbyvej 15, Hammel. It will not be possible to attend the defense physically due to the current COVID-19 restrictions, but it will be publicly available as an online defense. Link for the online session can be obtained by contacting Ulla.Hedegaard@midt.rm.dk. The title of the project is ”Evaluation of activity distribution and circadian rhythm in patients with severe acquired brain injury”. For more information, please contact Ph.D. student Simon Svanborg Kjeldsen, email: Simkje@rm.dk, Phone +45 7841 9076

Assessment committee:
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