



INVITATION – PHD DEFENCE

MALIN ERIKA OVERLADE CARMLAND, MD

“Precision medicine in the management of peripheral neuropathic pain”

Friday July 5, 2024, at 13.00

At auditorium J116-113, Entrance J, Aarhus University Hospital, Palle Juul-Jensens Boulevard 165, 8200 Aarhus N

The defence is public, in English and expected to last 2 hours.
After the defence, the Danish Pain Research Center will host a reception.



Assessment committee

- Associate Professor Therese Juul (chairman and moderator of the defence)
Department of Clinical Medicine, Department of Surgical Gastroenterology, Aarhus University, Denmark
- Professor Philipp Hüllemann
Division of Pain Research and Therapy, Department of Neurology, University Hospital Kiel, Schleswig-Holstein, Kiel, Germany
- Professor Niels Ejsskjær
Steno Diabetes Center North Denmark, Departments of Endocrinology & Clinical Medicine, Aalborg University Hospital, Denmark

Supervisors

- Professor Nanna Brix Finnerup (Main supervisor)
The Danish Pain Research Center, Department of Clinical Medicine, Aarhus University
- Professor Søren Hein Sindrup
Department of Neurology, Department of Clinical Medicine, University of Southern Denmark
- Professor Emeritus Flemming Winther Bach
Department of Neurology, Department of Clinical Medicine, Aarhus University



AARHUS UNIVERSITY

HEALTH – DEPARTMENT OF CLINICAL MEDICINE
Danish Pain Research Center



PRESS RELEASE

PhD Defence: Malin Erika Overlade Carmland, MD, from the Danish Pain Research Center, Department of Clinical Medicine, Aarhus University will defend her PhD thesis titled "Precision medicine in the management of peripheral neuropathic pain" on July 5, 2024, at 13.00. The defence is in English and will last approximately 2 hours.

Neuropathic pain (NP) is common and difficult to treat. NP is due to a lesion or disease of the somatosensory system, either centrally or peripherally. Current treatment guidelines are general and do not distinguish between types of NP or specific pain mechanisms.

A new PhD project from Aarhus University explored the concept of precision medicine in the treatment of peripheral NP. In two randomized placebo-controlled trials, we examined predictors of response to two drugs acting on different pathways involved in pain. The hypotheses were that sensory phenotype would predict response to the sodium channel blocker lacosamide and that ability to engage inhibitory pain pathways would predict response to the noradrenalin dopamine reuptake inhibitor bupropion. We used quantitative sensory phenotyping and conditioned pain modulation as surrogates for driving pain mechanism, respectively. Sensory phenotype, as defined by quantitative sensory testing did not predict response to lacosamide. Neither did the efficiency of conditioned pain modulation predict response to bupropion. These results may however be impacted by lack of power and limitations of the surrogates used. There were, however, subgroups of patients who responded well to these drugs. It would be of interest to examine other predictors, such as genetics.

Further, we analysed sensory signs of hyperpathia, a poorly defined syndrome, and found that it is probably a rare phenomenon in chronic peripheral NP.

The defence is public and takes place on July 5, 2024, at 13.00 in Auditorium J116-113, Entrance J, Aarhus University Hospital, Palle Juul-Jensens Boulevard 165, 8200 Aarhus N.

The title of the project is "Precision medicine in the management of peripheral neuropathic pain".

For more information, please contact PhD student Malin Erika Overlade Carmland, E-mail:

malin.carmland@clin.au.dk.



PRESSEMEDDELELSE

Ph.d.-forsvar: Malin Erika Overlade Carmland, læge, fra Dansk Smerteforskningscenter, Institut for Klinisk Medicin, Aarhus Universitet vil forsvare sin ph.d.-afhandling med titlen "Precision medicine in the management of peripheral neuropathic pain" den 5. juli 2024 kl. 13.00. Forsvaret er på engelsk og vil cirka vare 2 timer.

Nervesmerter er hyppigt og vanskeligt at behandle. Nervesmerte skyldes sygdom eller skade i det somatosensoriske nervesystem, enten centralt eller perifert. Nuværende behandlings rekommandationer er generelle og skelner ikke mellem type af nervesmerter eller drivende smertemekanisme.

Et nyt ph.d-projekt fra Aarhus Universitet har undersøgt konceptet præcisionsmedicin i forbindelse med behandling af perifere nervesmerter. I to randomiserede placebo-kontrollerede studier undersøgte vi hvad der prædikterer effekten af to præparater som virker på to forskellige veje i smerte signalering. Hypoteserne var, at sensorisk fænotype prædikterer effekten af en natrium kanal blokkere, imens evnen til at engagere inhibitoriske smerteveje prædikterer effekten af en noradrenalin dopamin reuptake hæmmer. Sensorisk fænotype, prædikterede ikke effekten af en natriumkanal blokker som vist i et tidligere studie. Evnen til at engagere inhibitoriske smerteveje prædikterede heller ikke effekten af en noradrenalin- og dopamin reuptake hæmmer. Resultaterne var dog begrænsede af manglende styrke og de metoder som blev brugt som surrogat for smertemekanisme. Nogle patienter havde dog en god effekt af disse præparater, og det vil derfor være interessant at undersøge andre prædiktorer, for eksempel genetik.

Derudover analyseredes sensoriske tegn på hyperpati, og vi fandt at dette syndrom formentlig er sjældent i kronisk perifer nervesmerte.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 5. juli 2024 kl. 13.00 i Auditorium J116-113, Aarhus Universitetshospital, Indgang J, Palle Juul-Jensens Boulevard 165, 8200 Aarhus N.

Titlen på projektet er "Precision medicine in the management of peripheral neuropathic pain".

For yderligere oplysninger, kontakte venligst ph.d.-studerende Malin Erika Overlade Carmland, mail: malin.carmland@clin.au.dk.