

Press release

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Basic information

Name: Michael Christensen Email: mc@clin.au.dk Phone: 40577061

Department of: Clinical Medicine

Main supervisor: Associate professor Rikke Nørregaard

Title of dissertation: The effects and mechanisms of metformin in response to renal disease

Date for defence: 1st of March 2019 at (time of day): 13:00 Place: Høegh-Guldbergs Gade 6B, 8000 Aarhus. Building 1632, room 201

Press release (Danish)

Effekt af metformin ved behandling af nyresygdomme

Nyresygdomme påvirker flere og flere mennesker på verdensplan, hvilket øger behovet for nye behandlingsstrategier. Medikamentet metformin bliver i dag allerede brugt i stor udstrækning til at behandle patienter med type-2 diabetes, men flere studier har i de seneste år vist, at metformin yderligere kan have effekt ved at beskytte mod udvikling af nyresygdomme. Resultaterne er fra et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Michael Christensen, der forsvare det d. 01/03-2019

Der er mange forskellige årsager til, at nyresygdomme udvikles, hvor diabetes, forøget blodtryk samt akutte nyreskader, er nogle af de mest dominerende. Formålet med dette ph.d.-projekt var at undersøge, om metformin kunne beskytte nyrerne mod skade. Dette blev undersøgt ved at anvende to gnavermodeller for nyresygdomme. Resultaterne viste, at metformin i høj grad kunne mindske udviklingen af betændelse i nyrerne, samt den efterfølgende skade. Derudover havde metformin ligeledes en positiv effekt ved at mindske noget af den iltmangel, der kan forekomme i nyrerne, og ellers kan øge risikoen for skade. Samlet set peger resultaterne på, at man på sigt kan anvende metformin til at beskytte mod nyreskader. Dette projekt er udelukkende udført under laboratorie forhold og er ikke testet på mennesker. Men hvis resultater kan overføres til mennesker, kan der være en gevinst ved at tilbyde metformin til de grupper af mennesker, der er i øget risiko for at udvikle nyresygdomme.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 01/03 kl. 13.00 ved Aarhus Universitet i auditoriet på Høegh-Guldbergs Gade 6B, 8000 Aarhus. bygning 1632, rum 201.

Titlen på projektet er "The effects and mechanisms of metformin in response to renal disease".

Yderligere oplysninger: Ph.d.-studerende Michael Christensen, e-mail: mc@clin.au.dk, tlf. 40577061.

Bedømmelsesudvalg:

Jeff Sands, Juha P. Kokko Professor, MD. Emory University, Atlanta, GA, USA.

Jenny Nyström Professor, MSc, PhD. University of Gothenburg, Sweden.

Rikke Katrine Jentoft Olsen (Chairman), Associate Professor, MSc, PhD. Aarhus University, Denmark

Press release (English)

Effects of metformin as treatment for renal diseases.

Renal diseases affects a growing number of people worldwide, increasing the need for new treatment strategies. The drug metformin is already widely used as a treatment for type-2 diabetes. In the recent years, studies have demonstrated that metformin may prevent the development of renal diseases. This project was carried out by Michael Christensen, who will be defending his dissertation on 01/03-19.

There are several causes for development of renal diseases, including diabetes, high blood pressure, as well as acute renal injury. The aim of this PhD project was to evaluate whether metformin could protect the kidneys from damage during renal disease. This was tested using two different rodent models of renal disease. The results demonstrated that metformin limited the level of inflammation as well as renal damage to a high degree. Furthermore, metformin displayed positive effects in limiting the amount of hypoxia, which is associated with the development of renal damage. Collectively, these results indicate a possible use of metformin as a renoprotective agent. This project was done as a preclinical study, and has not been verified in a clinical setting. However, if these results are transferable to humans, people who are at risk of developing renal disease may benefit of metformin treatment.

The defence is public and takes place 01/03-19 at 1 pm at Aarhus University in the auditorium at Høegh-Guldbergs Gade 6B, 8000 Aarhus. Building 1632, room 201. The title of the project is "The effects and mechanisms of metformin in response to renal disease". For more information, please contact PhD student Michael Christensen, email: mc@clin.au.dk, Phone +45 40577061..

Assessment committee:

Jeff Sands, Juha P. Kokko Professor, MD. Emory University, Atlanta, GA, USA.

Jenny Nyström Professor, MSc, PhD. University of Gothenburg, Sweden.

Rikke Katrine Jentoft Olsen (Chairman), Associate Professor, MSc, PhD. Aarhus University, Denmark

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