

## Press release

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### Basic information

Name: Stine Lohmann      Email: [stiloh@clin.au.dk](mailto:stiloh@clin.au.dk) Phone:

Department of: Clinical Medicine

Main supervisor: Bente Jespersen

Title of dissertation: Potential of mesenchymal stromal cell administration and normothermic machine perfusion in porcine renal transplantation

Date for defence: 15<sup>th</sup> of May at (time of day): 14:00 Place: Due to Covid-19, the defence will be held as a web defence via Zoom.

Press release (Danish)

Stamcellebehandling og normotermisk maskineperfusion i nyretransplantation i en grisemodel

Donornyrer fra hjertedøde donorer har været udsat for større skade grundet iskæmi og fænomenet reperfusion injury, og da der eksisterer begrænsede endogene reparationsmekanismer har det ført til et øget behov for supplerende regenerative strategier inden for nyretransplantation. Dette inkluderer udvidelse af organ preservationsteknikker såsom normaltempereret maskineperfusion, der tillader både evaluering af donornyren og giver mulighed for at starte behandling af nyreskaden allerede inden nyretransplantationen. Sådant en behandling kunne eksempelvis være stamcellebehandling, som besidder både immunologiske og regenerative egenskaber. Dette PhD-projekt og dets fire studier havde til formål at sammenligne målrettet stamcellebehandling af donornyrer fra hjertedøde donorer inden nyretransplantation.

Dertil blev der udviklet en nyretransplantationsmodel i grise, som skulle imitere den kliniske hjertedøds-donor situation. Stamcellerne blev givet direkte ind i nyrearterien under både kold eller normaltempereret preservation. Normaltempereret maskineperfusion forbedrede nyrefunktionen efter 14 dages opfølgning, og mens stamcellebehandlingerne var uden bivirkninger og var veltolererede, så forbedredes nyrefunktionen ikke efter transplantation.

ph.d.-projekt udgår fra Aarhus Universitet, Health. Projektet er gennemført af Stine Lohmann, der forsvare det d. 15/5-20.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 15/5-20 kl. 14.00. Pga Covid-19 afholdes forsvaret digitalt via Zoom. Link med adgang til forsvaret kan fremsendes ved henvendelse til Stine Lohmann via nedenstående mail.

Titlen på projektet er Stamcellebehandling og normotermisk maskineperfusion i nyretransplantation i en grisemodel. Yderligere oplysninger: Ph.d.-studerende Stine Lohmann, [stiloh@clin.au.dk](mailto:stiloh@clin.au.dk).

Bedømmelsesudvalg:

Associate professor, Asger Granflødt, MD, PhD, DMSc (Chairman)  
Institut for Klinisk Medicin – Anæstesiologisk afdeling, Aarhus University Hospital, Palle Juul-Jensens Boulevard 99, 8200 Aarhus

Senior Research Associate, Sarah Hosgood, PhD  
Senior Research Associate, Department of Surgery, University of Cambridge, Cambridge, UK

Professor Norberto Perico, PhD  
Laboratory of Advanced Drug Development

Clinical Research Center for Rare Diseases Aldo e Cele Daccò - Istituto di Ricerche Farmacologiche Mario Negri, Bergamo, Italy

Press release (English)

## Potential of mesenchymal stromal cell administration and normothermic machine perfusion in porcine renal transplantation

In Donation after Circulatory Death (DCD), the increased warm ischemia, reperfusion injury, and the limited endogenous repair capacity leads to a need for supplementing regenerative strategies in kidney transplantation. E.g. expansion of organ preservation techniques by normothermic machine perfusion (NMP) to allow both assessment of the donor kidney and provide opportunity to add therapies for repair before transplantation such as mesenchymal stromal cells (MSC), as they have immunomodulatory and regenerative properties. The PhD project was based on four studies with the overall aim to compare targeted MSC treatment of DCD kidney grafts prior to transplantation. Initially, a porcine renal autotransplantation model was developed to mimic the injury of DCD. The MSC was administrated directly in the renal artery during either cold or normothermic preservation. Normothermic machine perfusion increased renal function at the end of fourteen days follow-up, and while the administration of MSC was safe and well-tolerated it did not seem to improve renal function posttransplant. The project was carried out by Stine Lohmann, who is defending her dissertation on May the 15<sup>th</sup> 2020 at 14:00 CET. The title of the PhD project is Potential of mesenchymal stromal cell administration and normothermic machine perfusion in porcine renal transplantation. Due to Covid-19, the public defence will be held as a web defence via Zoom. Please contact Stine Lohmann by email: [stilo@clin.au.dk](mailto:stilo@clin.au.dk) to get access to the virtual defence and/or for additional information.

Assessment committee:

Associate professor, Asger Granflødt, MD, PhD, DMSc (Chairman)  
Department of Clinical Medicine – Anesthesiology Aarhus University Hospital, Aarhus, Denmark

Senior Research Associate Dr Sarah Hosgood, PhD  
Department of Surgery, University of Cambridge, Cambridge, UK

Professor Dr Norberto Perico, MD, PhD  
Laboratory of Advanced Drug Development, Clinical Research Center for Rare Diseases Aldo e Cele Daccò - Istituto di Ricerche Farmacologiche Mario Negri, Bergamo, Italy

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