

Press release

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Basic information

Name: Mads Dam Lyhne Email: mads.dam@clin.au.dk Phone: 20450486

Department of: Clinical Medicine

Main supervisor: Jens Erik Nielsen-Kudsk, MD, DMSc, professor

Title of dissertation: "Right ventricular function and support in acute pulmonary embolism"

Date for defence: May 28th 2021 at (time of day): 14.30 Place: Zoom Meeting
<https://aarhusuniversity.zoom.us/j/69206298253>. Meeting ID: 692 0629 8253

Press release (Danish)

Præklinisk forskning i akutte blodpropper i lungerne kan give idéer til kliniske forsøg

For at mindske risici for patienter afprøves nye sundhedsfaglige behandlinger oftest først på forsøgsdyr. Herved kan nye idéer opstå. Dette gør sig også gældende for et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Mads Dam Lyhne, der forsvare det d. 28/5 2021

Akutte blodpropper i lungerne belaster højre del af hjertet, da blodpropperne obstruerer blodets passage gennem lungerne. Samtidigt trækker blodkarrene i lungerne sig sammen, hvorved det besværliggør blodets passage yderligere. Til sidst kan højre hjertedel svigte og forårsage død. Normal fokuserer behandlingen alene på at opløse blodpropperne. I dette projekt har man undersøgt højre hjertehalvdels belastning over tid og afprøvet forskellige strategier til at aflaste højre hjertehalvdel. Forsøgene er udført i en meget realistisk grisemodel, som er udviklet i Aarhus. Man har vist at de første 6 timer er den mest kritiske fase, ligesom det ser ud til at især ilt har nogle gavnlige effekter for højre hjertehalvdel. Resultaterne kan give inspiration til forsøg på patienter med akutte blodpropper i hjertet.

Forsvaret af ph.d.-projektet er offentligt og finder sted online. Titlen på projektet er "Right ventricular function and support in acute pulmonary embolism". Yderligere oplysninger: Ph.d.-studerende Mads Dam Lyhne, e-mail: mads.dam@clin.au.dk, tlf. 20450486.

Bedømmelsesudvalg: Asger Grandfeldt, læge, PhD, dr.med., lektor, Anæstesiologisk afdeling, Aarhus Universitetshospital;

Jesper Kjærgaard, læge, PhD, Hjertemedicinsk afdeling, Rigshospitalet, Københavns Universitet;
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Press release (English)

Preclinical research in acute pulmonary embolism provides inspiration to clinical trials

To lower the risk for patients, new treatments are often investigated primarily in animals. Such preclinical studies may provide new ideas for diagnosis, risk stratification or treatment. The same was true for a new ph.d.-project which was carried out by Mads Dam Lyhne, who is defending his dissertation on May 28th 2021.

Acute blood clots in the lungs, so-called pulmonary embolism, compromise the right side of the heart, as the clots obstruct the blood flow through the lungs. At the same time, the blood vessels of the lungs contract which complicates the blood flow further. Ultimately, the right side of the heart may fail which is cause of death in these patients. The main focus of treatment is solely to dissolve the blood clots. This project has investigated the strain of the right side of the heart over longer duration and investigated different strategies to support the right side of the heart. The experiments have been

carried out in a very realistic animal model, which has been developed in Aarhus. The experiments showed the first 6 hours to be the most critical time window, and oxygen appears to have very beneficial effects on the function of the right side of the heart. The results may provide inspiration to trials on patients with acute pulmonary embolism.

The defence is public and takes place on May 28th 2021. The defence will be online. The title of the project is "Right ventricular function and support in acute pulmonary embolism". For more information, please contact PhD student Mads Dam Lyhne, email: mads.dam@clin.au.dk, Phone +45 20450486.

Assessment committee:

Asger Granfeldt, MD, PhD, DMSc Associate Professor - chairman of the committee and moderator of the defence, Department of Intensive Care, Aarhus University hospital;

Dr. Jesper Kjærgaard, MD, PhD, Rigshospitalet; University of Copenhagen

Dr. Frederikus A. Klok, MD, PhD, Department of Medicine - Thrombosis and Hemostasis, Leiden University Medical Center, Leiden, the Netherlands

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