

Press release

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Basic information

Name: Jeong Shim

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Department of: Clinical Medicine

Main supervisor: Jacob Fog Bentzon

Title of dissertation: "Modelling human atherosclerosis: Effects of apolipoprotein E deficiency and androgen deprivation in Yucatan minipigs"

Date for defence: 28-11-2017 at (time of day): 14.00 Place: AUH Nord, Auditorium A, Palle Juul-Jensens Boulevard 99, DK-8200 Aarhus N, Entrance G

Press release (Danish)

Ph.d.-afhandling om dyremodeller for åreforkalkning

Et nyt ph.d.-projekt fra Aarhus Universitet, Health, bidrager med nye stordyr-modeller for åreforkalkning. Projektet er gennemført af læge Jeong Shim, der forsvare d. 28. november 2017. Åreforkalkning er den hyppigste årsag til blodprop i hjertet og til mange slagtilfælde. Åreforkalkning er en sygdom karakteriseret ved aflejring af kolesterolpartikler og ledsagende kronisk betændelse i karvæggen. Kolesterol-sænkende lægemidler og optimering af livsstil kan forebygge mange tilfælde af åreforkalkning, men på trods af de eksisterende behandlinger, lider mange mennesker fortsat af åreforkalkning. Dyremodeller er vigtige til undersøge sygdomsmekanismer i åreforkalkning. Mus er gode til at studere sygdomsmekanismer, særligt da man i disse kan foretage ændringer i sygdomsfremkaldende gener. Til gengæld vil en dyremodel for åreforkalkning med menneskelignende størrelse og åreforkalkning, så som minigrise, kunne bidrage til at overføre vores eksisterende viden om åreforkalkning til nye og bedre behandlinger til forebyggelse af åreforkalkning.

Formålet med denne afhandling var at give en oversigt over eksisterende dyremodeller for åreforkalkning samt at karakterisere to nye stordyr-modeller for åreforkalkning i Yucatan minigrise. Vi skabte de første minigrise med mangel på apolipoprotein E – et protein som er meget vigtigt i reguleringen af kolesterol. Vi fandt at mangel på apolipoprotein E øgede mængden af åreforkalkning. Dernæst undersøgte vi, om vi kunne forbedre en eksisterende model for åreforkalkning i minigrise ved at påføre mangel på testosteron ved kastration. Vi kunne vise, at mangel på testosteron medførte mere avanceret åreforkalkning i minigrise med forhøjet kolesterol.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 28. november 2017 kl. 14 i Auditorium A, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N, Indgang G. Titlen på projektet er "Modelling human atherosclerosis: Effects of apolipoprotein E deficiency and androgen deprivation in Yucatan minipigs". Yderligere oplysninger: Ph.d.-studerende Jeong Shim, e-mail: jeong.shim@clin.au.dk, tlf. +4524624575.

Bedømmelsesudvalg:

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Press release (English)

PhD thesis on animal models of atherosclerosis

A new PhD study from Aarhus University, Health, provides new large-animal models of atherosclerosis. The project was carried out by Jeong Shim, MD, who is defending his dissertation on 28th November 2017.

Atherosclerosis is the cause of most heart attacks and a common cause of stroke. Atherosclerosis is a chronic inflammatory disease of arteries driven by retention of cholesterol particles in the arterial wall. Cholesterol-lowering medical therapy and life-style interventions can reduce the risk of atherosclerosis, but many individuals still suffer from atherosclerosis despite existing therapy. Animal models of atherosclerosis are important to study disease mechanisms. Mice have, due to the ease of genetic manipulation, formed the base for many mechanistic studies of atherosclerosis. However, large animal models of atherosclerosis, such as minipigs, with a human size and with more human-like atherosclerosis may aid the development of new and more effective treatments to prevent atherosclerosis. The aim of this PhD thesis was to give an overview of existing animal models of atherosclerosis and to characterize two new modes of atherosclerosis modeling in Yucatan minipigs. We created the first large-animal model with genetic deletion of an important cholesterol-regulating protein, apolipoprotein E, and found that lack of apolipoprotein E accelerated atherosclerosis in Yucatan minipigs. We also sought to improve an existing minipig model of atherosclerosis by castrating hypercholesterolemic male Yucatan minipigs and found castration to increase features of more advanced atherosclerosis.

The public defence takes place on 28th November 2017 at 14.00 in Auditorium A, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N, Entrance G. The title of the project is "Modelling human atherosclerosis: Effects of apolipoprotein E deficiency and androgen deprivation in Yucatan minipigs". For more information, please contact PhD student Jeong Shim, email: jeong.shim@clin.au.dk, Phone +45 24624575.

Assessment committee:

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