

Press release

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Basic information

Name: Michelle Meier

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Department of: Clinical Medicine

Main supervisor: Frank Viborg Mortensen

Title of dissertation: The morphological and molecular biological response to partial hepatectomy and regeneration in rats

Date for defence: January 11th 2019 at (time of day): 2 p.m. Place: Aarhus University Hospital, Palle Juhl-Jensens Boulevard 99, Entrance C, Level 1, Auditorium C114-101, 8200 Aarhus N

Press release (Danish)

Ny viden om hvordan leveren gendannes efter kirurgisk behandling af leverkræft

Nyt PhD-projekt fra Aarhus Universitet, Health, giver vigtig viden om, hvordan leveren gendannes efter kirurgisk fjernelse af kræft i leveren.

Leveren har en unik evne til fuldstændigt at genvinde størrelse og funktion, hvis den beskadiges. Dette fænomen kaldes regeneration og udnyttes bl.a. i behandling af kræft i leveren, hvor man kirurgisk kan fjerne op til 75% af den kræftramte lever – hvorefter den tilbageladte lever-rest er i stand til at vokse ud igen. "Særlig kritisk bliver det imidlertid, hvis 75% eller mere af leveren er kræftramt. For fjerner vi så meget af leveren, er det forbundet med mange, svære komplikationer og øget dødelighed. Dette skyldes, at vi efterlader en lever-rest, som ikke har tilstrækkelig størrelse og kapacitet til at kunne regenerere og opretholde leverfunktion," fortæller læge Michelle Meier. "Med aktuelle forskningsprojekt ønskede vi at undersøge, hvad der er bestemmende for denne grænse for, om regeneration og overlevelse efter leverkirurgi er muligt".

Forskerne ved Mave og Tarmkirurgisk afdeling, Aarhus Universitetshospital undersøgte vækstmønstre for leveren samt funktioner, der prioriteres i den regenerative lever efter kirurgi. "Vi kan se, at leveren prioriterer helt unikke signaleringsveje og processer for at tilvejebringe regeneration efter fjernelse af store mængder lever; processer som muligvis kan vise sig at være nøglen til overlevelse efter store leverkirurgiske indgreb," udtaler Michelle Meier.

"Håbet er, at vi med denne viden er et skridt nærmere at kunne mindske komplikationer og øge overlevelsen ved store leverkirurgiske indgreb. Desuden håber vi på sigt at kunne udvide grænsen for, hvor meget kræftram levervæv, det er muligt at fjerne, således at flere patienter med kræft i leveren kan helbredes," afslutter Michelle Meier. Resultaterne er sammenfattet i et nyt PhD projekt fra Aarhus Universitet, Health. Projektet er gennemført af Michelle Meier, der forsvare det d. 11. januar 2019.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 11. januar 2019 kl 14.00 i Auditorium C114-101, Aarhus Universitetshospital, Palle Juhl-Jensens Boulevard 99, Indgang C, Plan 1, 8200 Aarhus N. Titlen på projektet er "The morphological and molecular biological response to partial hepatectomy and regeneration in rats". Yderligere oplysninger: Ph.d.-studerende Michelle Meier, e-mail: michellemeiermd@gmail.com, tlf. 2873 8495.

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Press release (English)

New insight to how the liver regrows after surgical treatment of cancer of the liver

A new PhD project from Aarhus University, Faculty Health, provides new knowledge about the liver's unique ability to regrow following surgical removal of liver cancer.

The liver has a unique ability to completely recover size and function if damaged. This phenomenon is called regeneration and is exploited in the treatment of cancer of the liver, where surgical removal of up to 75% of the cancerous liver is followed by regrowth of the liver remnant. "It is particularly critical if 75% or more of the liver is cancerous, because removal of an liver mass to such an extend is associated with severe complications and increased mortality. This is due to the fact that the liver remnant left behind is insufficient in size and capacity to regenerate and maintain liver function," says medical doctor Michelle Meier. "By this research project, we wanted to investigate what is determining this limitation to regeneration and survival after liver surgery."

Researchers at the Department of Surgical Gastroenterology, Aarhus University Hospital, studied growth patterns of the liver as well as functions prioritized by the regenerating liver following liver surgery. "Our results indicate, that the liver prioritizes very specific signaling pathways and processes to be able to regenerate following removal of an extended liver mass; processes that might be the key to survival following extended liver surgery, Michelle Meier says.

"Hopefully, with this knowledge, we are one step closer to be able to reduce complications and increase survival following extended liver surgery. In addition, in the future, the limit for how much cancerous liver tissue it is possible to surgically remove can hopefully be expanded - curing more patients with cancer of the liver," concludes Michelle Meier. The results are gathered in a new PhD project from Aarhus University, Health. The project was conducted by Michelle Meier, who is defending her dissertation on January 11th 2019.

The defence is public and takes place on January 11th 2019 at 2.00 p.m. in Auditorium C-114-101, Aarhus University Hospital, Palle Juhl-Jensens Boulevard 99, Entrance C, 1st floor, 8200 Aarhus N. The title of the project is "The morphological and molecular biological response to partial hepatectomy and regeneration in rats". For more information, please contact PhD student Michelle Meier, email: michellemeiermd@gmail.com, Phone +45 2873 8495.

Assessment committee:

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