

Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Professor Toke Bek

Title of dissertation: Retinal oximetry in retinal vein occlusion

Date for defence: 01-07-2021 at (time of day): 14:00 Place: Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 167, 8200 Aarhus N, Indg. J, plan 1, Auditorium J116-113 and online

Press release (Danish)

Retinal oximetri hos patienter med venetrombose i øjets nethinde

Blodpropper i de blodkar, der fører blod bort fra nethinden, retinal veneokklusion (RVO) er en hyppig årsag til svagsynethed og blindhed i Danmark. RVO stopper blodforsyningen i et område af nethinden, hvilket fører til iltmangel og frigørelse af bl.a. vækstfaktoren vascular endothelial growth factor. Synsprognosen afhænger af varigheden af iltmanglen og størrelsen af det område af nethinden, der er påvirket af nedsat blodforsyning. Blodproppens sværhedsgrad beskrives efter, om der er blodmangel (iskæmi), men det har vist sig, at målinger af synsstyrken er bedre end graden af iskæmi til at forudsige synsprognosen. Dette skyldes bl.a., at det er svært at kvantificere graden af iskæmi. Nedsat blodforsyning fører imidlertid til iltmangel (hypoxi), som de seneste år er blevet muligt at måle med såkaldt retinal oximetri. Denne undersøgelse bygger på fundus fotografering foretaget ved to forskellige bølgelængder samtidig, og på baggrund af den forskellige absorption fra iltet og ikke-iltet blod kan iltmætningen i nethindens større blodkar beregnes.

Emnet for dette ph.d.-studium er derfor metodeudvikling samt klinisk anvendelse af retinal oximetri og Doppler optisk kohærens tomografi. Iltmætningen i nethindens større blodkar undersøges hos raske personer og hos patienter med RVO med det formål at belyse forbedringspotentialet i retinal oximetri, beskrive iltmætningen hos RVO-patienter samt at undersøge den prædiktive værdi af retinal oximetri. Projektet er gennemført af Signe Krejberg Jeppesen, der forsvare det d. 01/07-2021.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 01/07-2021 kl. 14 i J116-113 auditorium, Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 167, 8200 Aarhus N samt online. Titlen på projektet er "Retinal oximetry in retinal vein occlusion". Yderligere oplysninger: Ph.d.-studerende Signe Krejberg Jeppesen, e-mail: signekj@clin.au.dk, tlf. 25 12 01 42.

Bedømmelsesudvalg:

Lektor Doreen Schmidl, MD, ph.d.

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Press release (English)
Retinal oximetry in retinal vein occlusion

Lead paragraph, ending with:

Occlusion of larger retinal venules (RVO) is a frequent cause of visual impairment and blindness in Denmark. The occlusion arrests the blood supply to a retinal area affected by the occlusion which results in hypoxia and release of vascular endothelial growth factor. The visual prognosis depends on the duration of hypoxia and the size of the occlusion affected retinal area. The severity of the occlusion is expressed by the degree of ischaemia, but visual acuity measurements has been shown to be a better predictor for visual prognosis than the degree of ischaemia. This may be due to difficulties in quantifying retinal ischaemia. However, reduced blood flow results in retinal hypoxia which in recent years has become measurable by retinal oximetry. The examination is based on ordinary fundus photography recorded at two different wavelengths. On the basis of differences in light absorption from oxygenised and deoxygenised blood, the reflectance from the vessels at these two wavelengths can be transformed to oxygen saturation quantification in larger retinal vessels.

The development of this method and the clinical value of retinal oximetry and Doppler coherence tomography are the topics of this PhD study. The oxygen saturation in larger retinal vessels is studied in healthy individuals and in RVO patients in order to elucidate the potential of improvement in retinal oximetry, describe the oxygen saturation in RVO patients, and study the predictive value of retinal oximetry. The project was carried out by Signe Krejberg Jeppesen, who is defending her dissertation on July 1th 2021.

The defence is public and takes place on July 1th 2021 at 2 PM in Auditorium J116-113, Aarhus University Hospital, Palle Juul-Jensens Boulevard 167, 8200 Aarhus N and will be transmitted online. The title of the project is "Retinal oximetry in retinal vein occlusion". For more information, please contact PhD student Signe Krejberg Jeppesen, email: signekj@clin.au.dk, Phone +45 25 12 01 42.

Assessment committee:

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