

Press release

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Basic information

Name: Giovanni Ometto Email: email.giovanni@gmail.com Phone: +44(0) 7570 333 554

Department of: Clinical Medicine

Main supervisor: Toke Bek

Title of dissertation: Automated detection and prognostic value of the regional distribution of early diabetic retinopathy lesions

Date for defence: 19th May 2017 at (time of day): 14.30 Place: Palle Juul Jensen Auditoriet
Bygning 10, Aarhus Universitetshospital, Nørrebrogade 44, 8000 Aarhus C

Press release (Danish)

Klarlægelse af lokaliseringen af tidlige læsioner i nethinden kan hjælpe til at forhindre blindhed hos patienter med diabetisk retinopati

Formålet med Ph.D. projektet var at undersøge om den regionale fordeling af de tidlige morfologiske forandringer ved diabetisk retinopati spiller en rolle for senere udvikling af synstruende retinopati, samt at udvikle rutiner til billedbehandling, som gør det muligt at integrere denne viden i daglig klinisk praksis.

Arbejdet førte til udvikling af billedbehandlingsrutiner, som gør det muligt at detektere referencepunkter i nethinden, så som fovea, synsnerven og de temporale kararkader som referencepunkter til at beskrive beliggenheden af enkelte læsioner ved diabetisk retinopati. Det blev vist, at udviklingen af præcise risikomodeller til at bestemme kontrolintervallet ved screening for diabetisk retinopati kræver at man ser bort fra andre læsioner, som ville kunne påvirke kontrolintervallet, end diabetisk retinopati. Derudover blev det vist, at tidlig udvikling af diabetisk retinopati læsioner temporalt for fovea er forbundet med en øget risiko for senere udvikling af synstruende diabetisk retinopati.

Resultaterne kan potentielt danne grundlag for forbedrede beslutningsstøttemodeller til at optimere kontrolintervallet i forbindelse med screening for diabetisk retinopati, ved at integrere information om de retinale læsioners lokalisering med andre kendte risikofaktorer for udvikling af diabetisk retinopati. Projektet er gennemført af Giovanni Ometto, der forsvarede det d. 19/05/2017.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 19/05/2017 kl. 14.30 i Palle Juul Jensen Auditoriet, Bygning 10, Aarhus Universitetshospital, Nørrebrogade 44, Aarhus. Titlen på projektet er "Automated detection and prognostic value of the regional distribution of early diabetic retinopathy lesions". Yderligere oplysninger: Ph.d.-studerende Giovanni Ometto, e-mail: email.giovanni@gmail.com, tlf. +44 (0)7570 333 554.

Press release (English)

Identifying the location of early lesions in the retina can help prevent blindness in patients with diabetic retinopathy.

The purpose of this Ph.D. project was to investigate whether the regional distribution of early diabetic retinopathy lesions plays a role for the development of vision threatening diabetic retinopathy, and to develop image processing routines that facilitates the integration of this evidence in daily clinical practise.

The work resulted in the development of image processing routines that allowed real time detection of retinal landmarks such as the fovea, the optic disc and the retinal vascular arcades as references for the location of individual diabetic retinopathy lesions. It was shown that the development of accurate

risk models to determine the control interval during screening for diabetic retinopathy requires that lesions that might affect the control interval other than diabetic retinopathy are disregarded. Additionally, the occurrence of early diabetic retinopathy lesions temporal from the fovea implies an increased risk of later development of vision threatening diabetic retinopathy.

The findings of the study may potentially become a basis for improved decision models for determining the optimal control interval during screening for diabetic retinopathy by integrating information about the location of retinal lesions with other known risk factors for progression of the disease. The project was carried out by Giovanni Ometto, who is defending his dissertation on Friday May 19.

The defence is public and takes place on 19/05/2017 at 14.30 in Palle Juul Jensen Auditoriet, Bygning 10, Aarhus Universitetshospital, Nørrebrogade 44, Aarhus. The title of the project is "Automated detection and prognostic value of the regional distribution of early diabetic retinopathy lesions". For more information, please contact PhD student Giovanni Ometto, email: email.giovanni@gmail.com, Phone +44 (0)7570 333 554.

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