CONCLUSION

CONCLUSION

Choroidal thickness is decreased in diabetics relative to age-matched normal individuals. Choroid thickness is decreased as diabetic retinopathy progresses from mild NPDR to PDR. Presence of diabetic macular edema is associated with a significant decrease in the choroidal thickness.

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PROTOCOL

CHOROIDAL THICKNESS IN PATIENTS WITH DIABETIC RETINOPATHY ANALYZED BY SPECTRAL-DOMAIN OPTICAL COHERENCE TOMOGRAPHY

تحليل سمك المشيمة في مرضى اعتلال الشبكية السكري باستخدام التصوير المقطعي بالإتساق البصري

Protocol of a thesis submitted	خطة بحث مقدمة
to the Faculty of Medicine	لكلية الطب
University of Alexandria	جامعة الإسكندرية
In partial fulfillment of the	إيفاء جزئيًا
requirements of the degree of	لشروط الحصول على درجة
Master of Ophthalmology	**الماجستير في طب وجراحة العين**

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INTRODUCTION

Diabetic retinopathy is a leading cause of vision loss worldwide.[1] The development of macular edema and proliferative retinopathy are major causes of visual impairment.[1,2] Clinical and experimental findings suggested that choroid vasculopathy in diabetes may play a role in the pathogenesis of diabetic retinopathy.[3,4,5] Various choroid abnormalities including obstruction of the choriocapillaris, vascular degeneration, choroid aneurysms, and choroidal neovascularization have been reported in histopathologic studies of diabetic eyes.[3,6,7] In addition, loss of alkaline phosphatase activity in the diabetic choriocapillaris that represents loss of viable endothelial cells and concurrent degeneration of the choriocapillaris.[3,6]

There are few clinical studies on choroidal angiopathy in diabetes. This is because of the difficulty of imaging the choroid in vivo. Indocyanine green angiography reveals both hyper and hypofluorescent spots in diabetic eyes, although the significance is unknown.[4] It has been proposed that the hypofluorescent spots result from ischemic changes of the choroidal vessels and represent either a dye filling delay or a defect of the choriocapillaris.[3,4] It is further postulated that the hyperfluorescent spots may be secondary to the presence of choroidal neovascularization, intra-choroidal microvasculature abnormalities, or nodules at the level of the choriocapillaris or underlying stroma.[4,5,6] Concurrently, the risk factors associated with diabetic choroidopathy include the presence of severe diabetic retinopathy, poor glycemic control, and the nature of the treatment regimen.[6]

Additionally, studies assessing the choroidal blood flow beneath the fovea with the use of laser Doppler flowmetry indicate a reduction of choroidal blood flow and volume in patients with nonproliferative and proliferative diabetic retinopathy.[6] There was a more prominent decrease in flow in the case of proliferative diabetic retinopathy .A better clinical understanding of choroidal damage might be important for an accurate assessment of diabetic eye disease, but adequate visualization of the choroid using optical coherence tomography (OCT) has not been possible until recently, owing to its posterior location and the presence of pigmented cells that attenuate the incident light. Recent reports showed successful examination and measurement of choroidal thickness in normal and pathologic states using the Heidelberg Spectralis OCT (Heidelberg Engineering, Heidelberg, Germany).[7]

AIM OF THE WORK

The aim of the work is to compare between choroidal thickness in patients with diabetic retinopathy and normal persons using enhanced-depth imaging spectral –domain optical coherence tomography.

SUBJECTS

The study will include 40 adult eyes of adults recruited from the ophthalmology department at Alexandria main hospital.

The eye will be equally divided into two groups:

Group (1) will include 20 eyes having either non-proliferative diabetic retinopathy or proliferative diabetic retinopathy.

Group (2) will include 20 eyes of normal subjects as control.

Exclusion criteria:

1. Central retinal vein occlusion.
2. Branch retinal vein occlusion.
3. Secondary optic atrophy.
4. Myopic degeneration.
5. Choroidal neovascularization.
6. Media Opacity.

METHODS

The diabetic patients and the healthy adults will be subjected to the following:

- Full history taking including age, sex, past ocular and systemic history.
- In the diabetic group, further inquiry will be done on diabetic mellitus type, duration and previous treatment applied to the eye.
- Full ophthalmic examination including visual acuity assessment, IOP measurement, anterior segment and posterior segment examination.
- Investigation will include:
  - Fluorescein angiography to determine the stage of diabetic retinopathy. (in the diabetic group only).
  - Optical coherence tomography of the macula area and of the choroid using enhanced depth imaging of the Heidlberg Spectralis OCT. (in both groups).

RESULTS

The results of this study will be assessed, tabulated and statistically analyzed in appropriate figures and tables.

DISCUSSION

The results will be discussed in view of achievement of the aim, their significance and their comparison with previous related researches.

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ARABIC SUMMARY

الملخص العربى

اعتلال الشبكية السكري هو السبب الرئيسي لفقدان البصر في جميع أنحاء العالم. التأثير على البقعة الصفراء بالشبكية واعتلال الشبكية السكرى هي الأسباب الرئيسية لضعف البصر.

اعتلال وعائي المشيمة في مرض السكري قد تلعب دورا في التسبب في اعتلال الشبكية السكري.

والهدف من هذا العمل هو المقارنة بين سمك المشيمة في المرضى الذين يعانون من اعتلال الشبكية السكري والأشخاص العاديين باستخدام التصوير المقطعي الأكثر عمقاً.

وشملت الدراسة أربعين عين من الكبار البالغين من قسم طب وجراحة العيون بمستشفى جامعة الإسكندرية الرئيسية.

وتضمنت المجموعة الأولى عشرين عين مصابة بمرض اعتلال الشبكية السكري.

وتضمنت المجموعة الثانية عشرين عين طبيعة لأشخاص لا تعانى من المرض.

وقد تم دراسة تأثير مرض اعتلال الشبكية السكرى على المشيمة باستخدام التصوير المقطعى الأكثر عمقاً عن طريق خط فى اتجاهين الرأسى والأفقى وقد تم قياس سمك المشيمة يدوياً من الحافة الخارجية إلى الحافة الداخلية للمشيمة.

وقد تم قياس سمك المشيمة فى مرض السكرى قد وجد أنه له صلة بمرض اعتلال الشبكية السكرى وكما زاد شدة المرض وجد انخفاض ملحوظ فى سمك المشيمة.

الأوعية الدموية للمشيمة هى المسئولة عن وظيفة الشبكية وعن حجم الدم فى المشيمة وأى تأثير على هذه الأوعية يؤثر على تدفق الدم للمشيمة والشبكية وبالتالى يؤدى إلى التأثير على البصر.

لقد وضعت نظرية أن انخفاض سمك المشيمة قد يكون ذات صلة إلى نقص الأكسجين بأنسجة الشبكية.

والمشيمة هى المصدر الرئيسى لتغذية الشبكية وطبقات الشبكية الخارجية وأى تعرض لنقص تدفق الدم والأكسجين يؤثر على شبكية العين فى مرض السكرى.

وهذه الدراسة من عيوبها قلت عدد الحالات المستخدمة.
وفى الختام أن سمك المشيمة يقل بشكل ملحوظ فى مرض اعتلال الشبكية السكرى كلما اشتد المرض وسوف يكون هناك حاجة إلى مزيد من الدراسة والأبحاث على سمك المشيمة فى مرض اعتلال الشبكية السكرى.

الملخص العربى

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تحليل سمك المشيمة فى مرضى اعتلال الشبكية السكرى بإستخدام التصوير المقطعى بالإتساق البصرى

مقدمة من

عصام محمد محمود بكور
بكالوريوس الطب والجراحة - جامعة الإسكندرية، ٢٠٠٩

للحصول على درجة

الماجستير

فى

طب وجراحة العيون

لجنة المناقشة والحكم على الرسالة	موافقون
أ. د./ دلال أحمد شوقي أستاذ طب وجراحة العيون كلية الطب جامعة الإسكندرية	.....
أ. د./ أحمد مجدي بده أستاذ طب وجراحة العيون كلية الطب جامعة الإسكندرية	.....
أ.د / ياسر رجب سراج أستاذ طب وجراحة العيون كلية الطب جامعة طنطا	.....

تحليل سمك المشيمة فى مرضى اعتلال الشبكية السكرى بإستخدام التصوير المقطعى بالإتساق البصرى

رسالة علمية

مقدمة إلى كلية الطب– جامعة الإسكندرية

إستيفاء للدراسات المقررة للحصول على درجة

الماجستير

فى

طب وجراحة العيون

مقدمة من

عصام محمد محمود بكور

بكالوريوس الطب والجراحة - جامعة الإسكندرية، ٢٠٠٩

٢٠١٥