Sudan University of Science and Technology

College Graduate Studies

Measurement of Common Carotid Arteries Intima Media Thickness Using Ultrasonography in Sudanese People

قياس سمك البطانة الوسطى للشرايين السباتية لدى السودانيين بالموجات فوق الصوتية

Thesis Submitted for Partial Fulfillment for requirement of Master Degree (M.Sc) in Diagnostic ultrasound

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الايه

بسم الله الرحمن الرحيم

قال تعالي:

﴿أَوَلَيْسَ الَّذِي خَلَقَ السَّمَاوَاتِ وَالْأَرْضَ بِقَادِرٍ عَلَىٰ أَنْ يَخْلُقَ مِثْلَهُمْ ۚ بَلَىٰ وَهُوَ الْخَلَّاقُ الْعَلِيمُ[81] إِنَّمَا أَمْرُهُ إِذَا أَرَادَ شَيْئًا أَنْ يَقُولَ لَهُ كُنْ فَيَكُونُ [82]﴾

صدق الله العظيم

سورة يس الايات (81-82)

Dedication

To:

My family

My friends

My colleagues

My teachers

Acknowledgment

First of all, I Thank Allah for helping me to complete this project.I Thank Dr. Mona Ahmed my supervisor for her help and guidance, my great fullness for my all teachers in different educational levels.

Finally I would like to thank everybody who helped me in this project.

ABSTRACT

The main objective of this study was to carry the measurement of carotid artery intima-media thickness in healthy Sudanese people. This was carried in order to account the variation in respect to international index and correlate CAIMT measurement with: gender, age and body mass index as well as compare between right and left CAIMT in Khartoum state, Sudan; Department of Ultrasound in Bashayir hospital for the period from May 2016 to September 2016.

The observations of study were included 50 healthy Sudanese males and females and the data were obtained from people who were examined for right and left main common carotid arteries. Therefore, the sonographic measurement of CAIMT was made in the longitudinal plane at the point of CCA along a section of the artery 1 cm proximal to the carotid bulb.

The study we found that the right main common carotid artery IMT range between 0.04cm to 0.073, while the left main common carotid artery IMT range between 0.04 cm to 0.07cm.

The study found that there was a week degree of correlation between CAIMT with subject age and BMI while there was a strong degree of correlation between the values of right and left CAIMT. Hence, the study concluded that the CAIMT +values were higher in female than in male. Thus, the there were week degree of correlation between CAIMT and the subject age and BMI, and hence the CAIMT had higher values in right than left.

مستخلص

تهدف هذه الدراسة اليمعرفة وقياس وسطبطانة الشريان السباتي عند الاشخاص الاصحاء من اجل معرفة الاختلاف مع المؤشرالعالمى وقياس ارتباط وسطبطانة الشريان السباتي مع كل من العمر- مؤشرالجس مفضلاعن مقارنة ذلك بين اليمين واليسارفي السودان.

اجريت الدراسة بولاية الخرطوم –السودان-قسم الموجات فوق الصوتية بمستشفي بشائرفي الفترة بين مايو 2016 اليسبتمبر 2016.

تضمنت الدراسة 50 مشاهدة من الاشخاص الاصحاء في السودان من الاناث والذكوروقد تحصلت الدراسة علي البيانات والمعلومات من الاشخاص الذين اجري عليهم الفحص للشربان السباتي المشترك لليمين واليسار. وباستخدام قي اسالسنوغراف كالطولي عند نقطة التقييم القطري المشترك علي طولي جزء من سمب القري من الشريان السباتي لهذه النقطة.

تفيد الدراسة بوجو دار تباط ضعي فبين كل من CAIMT والعمر ومؤشر كتلة الجسم في حين انها وجدت انهنال كدرجة عالية بين الارتباط بين قيما ليمينواليسار.

خلصت الدراسة الي انقيم CAIMT كانت اعلي في الاناث من الذكور كما كانتهنا كدرجة عالية بين علاقة كل من , CAIMT والعمرومؤشركتلة الجسم وCAIMT والقيم العلي الليسار.

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List of Abbreviations

IMT	Intima media thickness
BMI	Body mass index
CCA	Common carotid artery
C	Cervical vertebra
ICA	Internal carotid artery
ECA	External carotid artery
CVD	Cardiovascular disease