The relationship between the aortic root diameter at the level of bifurcation, C-reactive protein, coronary risk factors and carotid blood flow among elderly asymptomatic hypertensive patients.

Thesis

Submitted for partial fulfillment

of MD degree in Geriatric medicine

By

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Aim of the work:

To study the relationship between the aortic root diameter at the level of bifurcation, C-reactive protein, coronary risk factors and carotid blood flow among elderly asymptomatic hypertensive patients.

Subjects and methods

Study design:

- A case control study.

Steps of the study:

1. Selection of subjects:

The subjects of this study will be divided into three groups:

A-Selection of cases:

The cases of this study will be recruited from Ain Shams University Hospital and will be subdivided into:

* Group 1: 30 elderly male patients suffering from hypertension.
* Group 2: 30 elderly female patients suffering from hypertension.

B-Selection of control:

* Group 3: 30 healthy elderly subjects.

C-Exclusion criteria:

- Any history suggesting other systemic disease.

2. Assessment:

All groups will be subjected to:

1) **Comprehensive geriatric assessment.**
2) **Laboratory investigations:**

- CRP level.
- Lipid profile (TG, Total cholesterol, HDL, LDL)

3) **Carotid Doppler.**
4) **Doppler ultrasound of aortic diameter at the level of bifurcation**

Introduction

Hypertension is one of the major traditional risk factors for Atherosclerosis, The relation ship between hypertension and risk of cardiovascular events is continuous, consistent, and independent of other risk factors. The higher the blood pressure, the greater is the chance of heart attack, heart failure, stroke, and kidney disease. ***(Lewingtonet al., 2002).***

The pathogenesis of atherosclerosis remains incompletely understood, but inflammation is thought to play an important role **(Libby2002).**

Aortic plaque is an expression of generalized atherosclerosis. As such, it is most often seen in the elderly ,it is also more common in patients with hypertension and hypercholesterolemia and smokers **(Sen etal.,2002)**

Plaque in the aorta is associated not only with these traditional atherosclerotic risk factors but also associated with inflammatory markers such as C-reactive protein (CRP) **(Agmon etal.,2004).**

C-reactive protein is the most extensively studied marker of inflammation (**Albert and Ridker 2006).** Several studies found that CRP levels are related to sub clinical measures of atherosclerosis suggesting inflammatory processes to be important even in early stages of cardiovascular disease **(Lucas etal.,2006).**

Hashimoto etal. (2004) found that evaluation of CRP could be equal or superior for predicting the development of carotid atherosclerosis than measurement of the pulse pressure or systolic blood pressure in hypertensive patient, and that its predictive value is independent of blood pressure.

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المقدمة

ارتفاع ضغط الدم هو أحد أهم عوامل الخطر التقليديه لتصلب الشرايين ، وعلاجه أمر في غاية الاهميه ، ولكن هذا العلاج لا يمنع من حدوث تصلب الشرايين وامراض القلب .

وقد وجدت احد الدراسات ان ارتفاع ضغط الدم يؤدى الى زيادة محيط الشريان الاورطى.

كما اثبتت احد الدراسات ان ارتفاع نسبة الدهون فى الدم يؤدى الى الاصابه بمرض تصلب الشرايين كما يؤثر على جذر الشريان الاورطى.

وقد اظهرت عدة دراسات ان الالتهابات لها دور هام فى حدوث تصلب الشرايين عن طريق قياس نسبة(بروتين سى التفاعلى).

قد اثبتت احد الدراسات ان (بروتين سى التفاعلى) له دور هام فى حدوث تصلب الشريان السباتى يعادل تاثير ارتفاع ضغط الدم وقد يفسر حدوث تصلب هذا الشريان فى الاشخاص الغير مصابين بمرض ارتفاع ضغط الدم .

كما اظهرت عدة دراسات ان المرضى المصابون بارتفاع ضغط الدم يعانون من زيادة فى خطر حدوث مضاعافات قلبيه عن طريق تصلب الشريان الاورطى وزيادة ثخانة خلايا الطبقة المبطنة للوعاء السباتى .

الهدف من البحث:

دراسة العلاقة بين محيط التشعب الاورطى وبروتين سى التفاعلى وعوامل خطورة الاصابة بتصلب الشرايين ومعدل تدفق الدم فى الشريان السباتى فى كبار السن المصابين بارتفاع ضغط الدم اللا عرضى

الطريقة والادوات :

فى هذا العمل يتم البحث عن طريق اختيار ستون مريضا من المترددين على مستشفيات جامعة عين شمس والذين يبلغون من العمر ستون عاما او اكثر والذين يعانون من مرض ارتفاع ضغط الدم ولا يعانون من امراض اخرى

وسوف يتم تقسيمهم الى ثلاثين حالة ذكر وثلاثين حاله انثى .

وسوف يتم اختيار ثلاثون شخصا اصحاء يمثلون المجموعه الضابطه .

وجميع الاشخاص سوف يخضعون :

- تقييم شامل للمسنين .
- سيتم اخذ عينة دم من جميع المشاركين فى البحث لدراسة نسبة الدهون فى الدم من كوليسترول ودهون ثلاثيه ودهون عالية الكثافة ودهون قليلة الكثافة
- سيتم قياس بروتين سى التفاعلى بالدم .
- سيتم عمل دوبلر موجات صوتية على البطن لتقييم محيط التشعب الاورطى.
- سيتم عمل دوبلر موجات صوتية على الشريان السباتى.

العلاقة بين محيط التشعب الاورطى وبروتين سى التفاعلى وعوامل خطورة الاصابة بتصلب الشرايين ومعدل تدفق الدم فى الشريان السباتى فى كبار السن المصابين بارتفاع ضغط الدم اللاعرضى

رساله مقدمه من

الطبيبه / هند محمود طه

بكالوريوس الطب والجراحة العامه

ماجستير طب وصحة المسنين

توطئه للحصول على درجة الدكتوراه
فى طب وصحة المسنين

تحت اشراف

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مدرس طب وصحة المسنين

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كلية الطب

جامعة عين شمس

2008

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Cardiovascular Risk Factors in Hypertension

More than 1 Billion individuals worldwide have hypertension. The prevalence of hypertension will increase as the population ages, unless broad and effective preventive measures are implemented. ***(Chobanian et al., 2003)***

In Egypt the prevalence of hypertension in the population was 26.3% in 1998. The prevalence rate was 59.4% among the 65-74 years age group. Hypertension prevalence increased progressively with age, with the exception of the oldest age group ≥75 years. and the estimated percentage of hypertensive individuals whose blood pressure were under control was 8% ***(Ibrahim, 2001).*** According to a study conducted in 7 Geriatric centers run by the ministry of health and population in 7 governorates it was found that hypertension is the major health problem of elderly in Egypt ***(Badr et al., 2005).***

Most of the increase of the prevalence of high blood pressure in older persons is due to an increase in isolated systolic hypertension (ISH) ***(Chae and Lloyd-Jones, 2002).*** Systolic blood pressure rises steadily from age 30 years through age 84 years, due to increasing age-related large artery stiffness, while diastolic blood pressure rises until the sixth decade, then declines ***(Franklinet al., 1997).***