

The Measurement of Lipids in Hypertensive Patients

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Abstract

Hypertension is a chronic cardiac disease in which the systemic arterial blood is elevated. This study was planned in AL – Azizya district governorate of Waset during the period 1/7/2011- 1/10/2011, to detect the role of lipids in high blood pressure. One hundred and five (105) hypertensive patients from males and females their ages from (20-70) years and measured their lipids in the blood and also their blood pressure were taken and compared with forty five (45) healthy individuals of similar ages. The result of this study revealed that the level of lipids was within normal in the majority of hypertensive patients (79.4%). At the same time the study revealed that there was high level in lipids profile concentration in some healthy individuals. From the above we conclude that the increase level of lipids profile is the one cause of high blood pressure also smoking, emotional factors and genetic factors have the same role in elevation of blood pressure. Finally the study clearly clarified that age has an important role in increasing the blood pressure.

Introduction

Hypertension defined as high blood pressure in which the blood pressure in the arteries is elevated. This requires the heart to work harder than normal to circulate blood through the blood vessels [1]. In the year 2000 it is estimated that nearly 26% of the adult peoples had hypertension worldwide. The rates vary markedly in different regions with rates as low as 3.4% (Men) and (6.8%) women [2]. The causes of hypertension include:

- ✦ How much water and salt in the body [3].
- ✦ The condition of kidney, nervous system or blood vessels [4].
- ✦ The level of different hormones [5]

Most of the time, there are no symptoms for most hypertensive patients with high blood pressure were found when they visit their health care provider. Because there are no symptoms, people can develop heart disease and kidney problem without knowing the high blood pressure [6]. Hypertension is rarely accompanied by any symptoms and its identification is usually through screening or when seeking healthcare for an unrelated problem. A proportion of people with high blood pressure reports headaches (Particularly at the back of the head and in the morning) as well as vertigo [7]. These symptoms however are more precisely to be related to associated anxiety than the high blood pressure itself [8].

Materials and Methods

A prospective study was conducted in AL- Azizya district Waset governorate on (105) hypertensive patients and compared with (45) healthy control whose ages nearly similar to patients group. For each patient and control the blood pressure measured by the physician. Venous blood samples were obtained for both patients and controls the cholesterol, Triglyceride, low density lipoprotein- cholesterol (LDL), high density lipoprotein - cholesterol (HDL) and very low density lipoprotein - cholesterol (VLDL) were measured. Data of this study were analysed statistically.

Results

Table(1): Demographic and characteristics of study patients and control

Characteristics	Frequency	Percentage
Gender		
Male	60	40%
Female	90	60%
Age groups /years		
20-30	9	6
30-40	29	20.5
>40	112	79.4

Indication that frequency of patient at age group more than (40) year was higher than that observed with other age groups.

Table (2): Clinical presentation of study patients and healthy control according to age .

	20 – 40 Years	%	40-60 Years	%	60-70 Years	%
Cholesterol < 200 mg/dl	50	33	40	26	11	7.3
> 200	10	6.6	14	9.3	25	16.6
Triglyceride < 180	38	25.3	15	10	10	6.6
> 180	20	13.3	33	22	34	22.6
HDL- Cholesterol < 65	35	22.3	48	32	48	32
> 65	5	3.3	6	4	8	5.3
LDL – Cholesterol < 190	28	18.6	23	15.3	30	20
> 190	7	4.6	25	16.6	37	24.6
VLDL – Cholesterol < 36	33	22	19	12.6	12	8
> 36	27	18	28	18.6	31	20.6

Indicator that frequency of patient with high Triglyceride T.G was more than other groups. Indicator that frequency of patient with high VLDL more than other groups.

Table (3) : Relationship between blood pressure and gender

	Gender	
	Male	Female
Blood pressure		
❖ Normal	20	25
❖ Hypertension	40	65
Total	60	90

Table (4): Relationship between blood pressure and age group

	Age group (years)			Total
	20-30	30-40	> 40	
Blood pressure				
❖ Healthy	7	12	26	45
❖ Hypertension	2	17	86	105
	9	29	112	150

It was clearly demonstrated that there was a significant correlation between age group and blood pressure ($P < 0.05$). Indicator that shows was a significant relationship between blood pressure and age group (P Value = 0.05).

Table (5) : The relationship between blood pressure and cholesterol

	Cholesterol		Total
	Healthy (N.)	High (N.)	
Blood. Pressure			
❖ Healthy	35	10	45
❖ Hypertension	66	39	105
Total	101	49	150

Discussion

This study demonstrates that the highest percentage (74.7) of patients were >40 years which coincides with the findings a study states that the cause of blood pressure most frequently complications such as diabetes and cardiovascular diseases happens in this age (9) . Regarding to the effect of lipids profile on the incidence of blood pressure, it was observed that there was no statistically significant differences among patients because of so many factors contribute to heart disease not only lipids .So many studies showed that people with normal HDL – cholesterol can have heart disease , and people with low HDL-cholesterol level can healthy heart [10]. Over all people with low HDL - cholesterol with have greater risk of developing heart disease than people with high level of HDL- cholesterol [11] .According to age group this study demonstrated that there was significant correlation between age and blood pressure ($P < 0.05$). This study agrees with collaborative study which revealed the age is a known risk factor for high blood pressure. [12,13]. In general blood pressure rises as a people get older. Infact up to 80% of people with high blood pressure and these with no history of high blood pressure. After age 65 due to limited activities the Lipids tend to be accumulated in the arteries and make them stiffer, less flexible, the endothelium does not do its job as well, these causes make the arteries to be narrowed and lead to raising of blood pressures (14, 15).

Conclusion

1. Most patients with hypertension were females more that males with significant difference.
2. Hypertension status was observed mostly under age > 40 years.
3. The most biochemical change parameter were noticed triglyceride and VLDL- cholesterol among hypertension patients while HDL - cholesterol decrease in two cases in hypertension in compared with control group .

Recommendation

- 1) It is recommended that patient with sever headache, nausea, vomiting and contentious changes in vision should go to the health care unite.
- 2) Try to avoid stress.
- 3) Smoking and alcohol should be prevented.

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- 4) The diet should be include potassium and fibers and drink plenty of water.
- 5) The patient with high LDL- cholesterol should take a green tea to reduce LDL- cholesterol because studies showed that green tea leveas contain powerful antioxidants which can lower total cholesterol.
- 6) Exercise regularly at least 30 minutes of Earobic exercise a day.

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قياس مرتسم الدهون لدى المرضى المصابين بارتفاع ضغط الدم

يعقوب يوسف اسماعيل

كلية التقنيات الصحية والطبية ، هيئة التعليم التقني

الملخص

يعد مرض ارتفاع ضغط الدم من الامراض القلبية المزمنة التي يكون فيها ضغط الدم داخل الشرايين مرتفعاً . اجريت هذه الدراسة في منطقة العزيزية للفترة ما بين 1 / 7 / 2011 – 1 / 10 / 2011 ، لمعرفة دور الدهون في ارتفاع ضغط الدم، حيث تم قياس تركيز مرتسم الدهون في مصل المصابين بارتفاع ضغط الدم . اخذت عينة عشوائية مكونة من (105) مصابا بارتفاع ضغط الدم من الاثاث والذكور تتراوح اعمارهم ما بين (20-70) سنة وتم مقارنتها بـ (45) من الاصحاء ومن نفس الفئة العمرية . اظهرت نتائج هذه الدراسة بان نسبة تركيز مرتسم الدهون كانت طبيعية عند اغلب المصابين بارتفاع ضغط الدم كما وجد ان نسبة من الاصحاء يوجد عندهم ارتفاع في تركيز مرتسم الدهون. لذا نستنتج مما سبق بان ارتفاع مستوى مرتسم الدهون هو احد اسباب ارتفاع ضغط الدم ، كما أن للتدخين والعوامل الوراثية والاسباب العاطفية لها نفس التأثير في ذلك. كما اظهرت نتائج هذه الدراسة دور مهم للعمر في ارتفاع ضغط الدم حيث اظهرت بان (4,79%) من المصابين بارتفاع ضغط الدم الذين كانت اعمارهم 40 سنة فما فوق وتزداد كلما تقدم الانسان في العمر.