COMPLIANCE OF HYPERTENSIVE PATIENTS TO THERAPY[+]

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Abstract

A cross-sectional study of hypertensive patients was conducted in Sumer Public Medical Clinic , and drug complince was estimated according to regularity of using drugs and blood pressure control .

Two hundred sixty hypertensive patients were included in this study . the data were collected by using a specially designed questionnaire . the were tested using the Chi-square test .

The results revealed that the mean age of the study sample was (57.7+ 10.6 years) , (55.7%) had the disase for more than 5 years . And it was found that only (39.6%) had controlled blood pressure . And (53.1%) of the patients had been treated with one drug , (62.7%) were taking a single dose/ day and (32.7%) took their drugs irregularly , of whom (55.4%) because of emergence of side effect .

It was concluded that although about two thirds of the patients were compliant with their thrapy , only little mor than one third had controlled blood pressure which indicates bad management of those patients , and the number of drugs is the most important factor that highly affect the regularity of drugs taken by the patients and consequently on control of blood pressure .

Key words
Hypertension , Compliance, drug therapy, Education.

المستخلص

تم اجراء دراسة مقطعية على المرضى المصابين بارتفاع ضغط الدم والمسجلين في العيادة الشعبية في حي سومر وحدة الامراض المزمنة وتم احتساب امتثال المرضى للعلاج نسبة الى التزامهم بأخـــذ العـــلاج بصورة منتظمة والسيطرة عاى ارتفاع ضغط الدم.

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شملت الدراسة ٢٦٠ مريض مصاب بارتفاع ضغط الدم فقط من المراجعين للعيـــادة خلال الفترة من الاول / ايار/٢٠٠٢ لغاية الثلاثين/ايلول/٢٠٠٢. أخذت المعلومات والبيانات الخاصة بالدراسة باســتخدام طريقة المقابلة، وتم تحليل البيانات واختبارها احصائيا.

أظهرت النتائج بأن متوسط عمر العينة كان (٥٧,٧±١٠,٦) ســنة وان ٥٥,٧ % مــن العينــة هــم مصابون بالمرض لأكثر من ٥ سنوات. ووجد ان ٣٩,٦% من مجموع العينة كانوا ذو ضــغط منظــبط و ٥٣,١%يستخدمون نوع واحد من العلاج و ٦٢,٧% يتناولون جرعة واحــدة مــن الــدواء فــي حــين ٣٢,٧%يتناولون علاجهم بصورة غير منتظمة و اتضح ان السبب الرئيسي لعدم الانتظام في تناول العلاج هو ظهور اعراض جانبية ومضاعفات. الاستنتاجات: من خلال عرض النتائج تبين انه على الرغم مــن ان ثلثين من المرضى كانوا ممتثلين لعلاجهم الا انه حوالي ثلث منهم كان ضغطهم منضبط، مما يــشير الــى سوء المتابعة لهؤلاء المرضى. وان عدد الادوية التي يتعاطاها المريض لها تــأثير عــالي علــى انتظــام المريض في اخذ العلاج وبالتالي على انضباط الضغط

Introduction

Hypertension is a chronic condition that affects about 20% of adults in many industrialized countries [l], and seems to be even more prevalent in some developing countries [2]. The risks associated with a given blood pressure are dependent upon a combination of risk factors in the specific individual. These include age sex, ethnic origin, diet, smoking, family history, blood cholesterol and other chronic diseases such as diabetes mellitus and preexisting vascular disease [3]. The problem is compounded by the low compliance to anti-hypertensive medications even though the medications lower the blood pressure and reduce morbidity and mortality related to hypertension [4].

Long term trials have repeatedly shown that the use of anti hypertensive drugs reduce both morbidity and mortality resulting from hypertension,[5] .

The silent nature of hypertension often encourages the tendency of patients to be non-compliant [6], although factors such as the nature of the treatment regimen, side effects of the drugs, socio-demographic factors and factors related to the patient milieu are involved ,[7] .

Most researches have focused on patient's non-compliance with recommended therapies and had not examined the way in which the physicians actually treat patients with hypertension, [8].

Patients' compliance includes taking medications at the desired strength, in the proper dosage form and at the appropriate time of day and night.

Non-compliance may involve under - dosage, over-dosage, incorrect duration of treatment and drug abuse [9]. Patients' non-compliance may result from a number of

factors including undesired side effect of the drug that discourage use, or discontinued use because the patient feels better or worse, or confusion over taking multiple medications, [9]. Whereas the usefulness of the earlier drugs was limited by side effects, the discovery of successive classes of agents has resulted in the gradual introduction of drugs causing fewer adverse effects with consequent improvements in patient compliance, [10].

Nearly 70% of the patients do not have their hypertension adequately controlled. Non-compliance with prescribed regimens appears to be one of the primary contributors to the large numbers of patients with uncontrolled hypertension, [11].

Aim Of The Study

This study aimed to estimate the compliance of hypertensive patients with drug use and the effect of compliance on blood pressure control.

Method

A cross - sectional study was conducted from 1st of May to 30th of September 2002 in Sumer Public Medical Clinic which covers a population of 74500. The study sample consisted of 260 hypertensive patients whom had no other complaint and attended the clinic's chronic disease department.

Each patient was interviewed by the researcher, using a special questionnaire including demographic and medical data information, which include the duration of illness ،the number of the drugs used, the frequency of taking drugs, the way of taking their drugs whether regular or irregular and the reason for irregular intake of their therapy.

The blood pressure was measured for each patient using a mercury sphygmomanometer and stethoscope. The cuff was rapidly inflated until the reading was 30 mmHg above the systolic blood pressure (SBP) , then slowly deflated. Patients with systolic blood pressure (SBP) less than 140 and/or diastolic blood pressure (DBP) less than 90 mmHg were considered as controlled hypertensive [12].

Data was analyzed using the SPSS Computer package and the results were tested using the Chi- square test for association.

Results

Table (1) shows that 166 patients (63.8%) were females and 94 (36.2%) were males. The mean age of the study sample was (57.7 $\pm$10.6) (years), and (38.0%) were college graduates while(25%) could not read and write. It was also found that (55.7%) had had the disease for more than 5 years.

Table (1): Distribution of hypertensive patients according to demographic and disease. Variables

Sex	**No.**	**%**
Male	94	36.2
Female	166	63.8
Total	260	100
Age(year)		
<40	17	6.5
40-59	122	46.9
>60	121	46.6
Total	260	100
Education		
Illiterate	65	25.0
Read and write	24	9.2
Primary school	34	13.1
Secondary school	38	14.6
College	99	38.1
Total	260	100
Duration of illness (years)		
<1	6	2.3
1-5	109	41.9
6-10	70	26.9
>10	75	28.9
Total	260	100

Table (2) reveals that (53.1 %) of the patients were being treated with one drug regardless of its type. It was found that (62.7%) of the study sample were taking a single daily dose, and the remaining (37.3%) were treated with multiple doses.

It was also found that (67.3%) of the patients took their drugs regularly by time and dose (compliant with their therapy) while (32.7%) were irregular in ingesting their medications (non-compliant). The reasons for not taking the drugs regularly was emergence of side effects (55.4%), neglect (26.1 %).

Those who were found to have controlled blood pressure were 39.6% of the study sample.

Table(2) : Distribution of patients according to treatment variables

Treatment variables	No.	%
No. of drugs		
One	138	53.1
Two	98	37.7
Three	24	9.2
Total	260	100
Frequency of taking drugs		
Single	163	62.7
Multiple	97	37.3
Total	260	100
Regularity of taking drugs		
Regular	168	67.3
Irregular	92	32.7
Total	260	100
Reason for irregular intake of drugs		
Side effects	51	55.4
Neglect	24	26.1
Cost	4	4.4
Unavailability	5	5.4
Others	8	8.7
Total	92	100
Control of blood pressure		
Controlled	103	39.6
Uncontrolled	157	60.4
Total	260	100

Table (3) reveals that there was an association between the regularity of taking drugs and control of blood pressure, ***(X = 3.899 df = 1 P < 0.0)***

Table (3): Distribution of the patients according to regularity of drug intake and blood pressure

BP control / Regularity of Drug intake	Controlled		Uncontrolled		Total	
	No.	%	No.	%	No.	%
Regular	74	44.0	94	56.0	168	100
Irregular	29	31.5	63	68.5	92	100
Total	103	39.6	157	60.4	260	100

(X = 3.899, df = 1, P < 0.05)

Table (4) reveals the distribution of the patients according to their sex, age, period

of having the disease, and the number of drugs taken by the patient with compliance to their therapy. It was found that the number of drugs taken by the patient had a significant association with the patient's compliance while other variables are not. The higher the number of drugs prescribed the less is the compliance.

Table(4): Distribution of patients according to age, sex, period of illness, No. of drugs and compliance rate.

Variable	Compliant Regular		Non-compliant Irregular		Total		*x*
	No.	%	No.	%	No.	%	
Sex							
Male	54	57.4	40	42.6	94	100	P > 0.05
Female	114	68.7	52	31.3	166	100	
. Age(years)							
<40	11	64.7	6	35.3	17	100	P> 0.05
40-59	80	65.6	42	34.4	122	100	
60+	77	63.6	44	36.4	121	100	
Duration of illness(years)							
<1	5	83.3	1	16.7	6	100	P > 0.05
1-5	**69**	63.3	40	36.7	109	100	
6-10	44	62.9	26	37.1	70	100	
>10	50	66.7	25	33.3	75	1100	
Number of drugs taken							
One	116	85.3	20	14.7	136	100	P < 0.001
Two	47	46.5	54	53.5	101	100	
Three or above	5	21.7	18	78.3	23	100	

Table 5 reveals that the age and educational level of the patient have significant association with the control of blood pressure while other variables do not.

Table (5) : Distribution of patients according to sex, age, education, period of illness, and number of drugs and blood pressure control

Variable	Controlled		Uncontrolled		Total		X
	No.	%	No.	%	No.	%	
Age(years)							
<40	16	94.1	1	5.9	17	100	P<0.000 1
40-59	49	40.2	73	59.8	122	100	
60+	38	31.4	83	68.6	121	100	
Sex							
Male	37	35.9	66	64.1	103	100	P> 0.05
Female	57	36.3	100	63.7	157	100	
Education							
Illiterate	33	50.8	32	49.2	65	100	P<0.05 .
Read &write	10	41.7	14	58.3	24	100	
Primary	8	23.5	26	76.5	34	100	
Secondary	19	50.0	19	50.0	38	100	
College	33	39.6	66	60.4	99	100	
Duration of illness(Years)							
<1	4	66.7	2	33.3	6	100	P>0.05
1-5	44	40.4	65	59.6	109	100	
6-10	28	40.0	42	60.0	70	100	
10 +	27	36.0	48	64.0	75	100	
No. of drugs							
One	59	43.4	77	56.6	136	100	P>0.05
Two	39	38.6	62	61.4	101	100	
Three or over	5	43.5	18	65.5	23	100	

Discussion

It was found that the main age group affected in this study was above 40 years, which coincides with findings in western nations where blood pressure rises with age (13). The higher frequency of patients with high educational level may be due to anxiety and high assureness in such groups which are important factors leading to an increase the incidence of hypertension [3].

In this study the compliance rate was calculated according to regularity of taking the drug and the control of blood pressure [9].

It was found that the majority of the patients (about2/3) were being treated with one anti- hypertension drug, being taken once per day. This method is desirable for the patient to make him more compliant with therapy because compliance is usually associated with monotherapy [14]. This result was the same as that of a study done in Sudan by Alzubier etal.[l5], and a study conducted in Seychelles in which it was found that the medication regimen, which is one pill per day boosts the compliance [16].

Another study conducted in the United - States revealed that simplification of a drug regimen by using combination therapy in a single pill for hypertension resulted in significant increases in persistence with prescribed therapy [I8].

The remaining (1/3) were irregular consumer of therapy because of side effects of the drug prescribed (55.4%) and neglect (26.1 %), while cost played no role in non-compliance, as drugs of chronic diseases are sold in the public medical clinic for prices subsidized by the government. This result contradicts that of Al zubeir study which found that cost plays a great role in non-compliance [15].

When the compliance rate was measured according to regularity of administration of the drug it was found that the rate is relatively high (67.3%), and this rate was significantly affected by monotherapy $P<0.001$ this is because it is easy for the patient to take his drug once a day. This result studies is similar to that seen in Alzubier, Dezii , Gerc studies (15,17,18) but contradicts [19] in which it was found that the compliance rate was relatively low in patients who were on regular treatment and not affected with the number of drugs taken . When the compliance rate was measured according to control of blood pressure, it was found that the rate was relatively low (39.6%) which is similar to the results of .[19], and this rate was significantly affected by age (the older the age the lower the rate). This is explained by the fact that as the age increases, the patient gets more damage to the vessels due

to atherosclerosis and becomes difficult to control. Moreover, elderly patients were not attending the clinic to check their blood pressure regularly every month but they receive their medication through their relatives. This result contradicts Gerc study, which found that the age had no significant influence upon patient compliance [18]. Education showed negative association with control of blood pressure,(the higher the education the lower the rate), which-is similar to Shindala-study [19]. This result may indicate that educated patient faces more stress, more anxious in his life and perhaps educated patient may be ignorant and non complying and that the uneducated patients are more obedient to their doctors.

It was found that there was a significant association between the two methods of measuring compliance, the more regular the patient is in taking drug, the better the control of his blood pressure (P<0,05), The same results were seen in Saudi Arabia [20] and Sudan [15].

Conclusion it was found that although about (2/3) of the patients were compliant with their therapy, only less than (1/3) had controlled blood pressure which indicates bad management of those patients. It was found that the number of the drugs taken by the patients was the most important factor influencing patient's compliance, followed by age and education.

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