Uncontrolled Hypertension In A Group Of Hypertensive Patients In Erbil

ضغط الدم الغير مسيطر عليه بين مجموعة من المرضى المصابين بارتفاع ضغط الدم في اربيل

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الخلاصة:

الخلفية : ارتفاع ضغط الدم يشكل مشكلة صحية عامة رئيسية في إقليم كردستان، والعديد من التجارب العشوائية أظهرت أن ارتباط مراقبة ارتفاع ضغط الدم مع انخفاض في معدل الإصابة بأمراض القلب التاجية والسكتة الدماغية .

الهدف: لتحديد مدى انتشار والعوامل المرتبطة بارتفاع ضغط الدم غير المنضبط بين مجموعة من المرضى المصابين بارتفاع ضغط الدم في اربيل.

منهجية البحث: أجريت دراسة مقطعية .وقد تم اختيار العينة المكونة من 400 مريض من المصابين با رتفاع ضغط الدم في هذه الدراسة و المراجعين للعيادات الخارجية في المستشفى رزكاري التعليمي في مدينة اربيل .وتم تمديد هذه الدراسة من الاول من نيسان سنة 2011 الى 31 من آذار 2012 . جمعت المعلومات في هذا البحث عن طريق المقابلة المباشرة مع المرضى وذلك باستعمال استبيان خاص صمم لهذا الغرض. وقد استعمل برنامج SPSS (نسخة 18) لادخال وتحليل البيانات الاحصائية.

النتائج: انتشار ارتفاع ضغط الدم غير المنضبط وكان بنسبة 58.8 %. كان معدل انتشار ارتفاع ضغط الدم غير المنضبط بين مرضى ارتفاع ضغط الدم من الذكور 61.8% وبين الاناث كان بنسبة 57.5.% وكشف تحليل الانحدار اللوجستي من ارتفاع ضغط الدم غير المنضبط أن ارتفاع ضغط الدم غير المنضبط وكان إحصائيا وجود علاقة كبيرة مع المدخن الحالي (OR=8.77)، وانتظام العلاج (OR = 0.296)، و ممارسة الرياضة (OR= 0.414) ونوع الأدوية الخافضة للضغط: مدرات البول(OR = 11.938) ACEI ، (OR =7.907)، وحاصرات بيتا (OR=7.096) ، CCB (OR=7.169).

الاستنتاجات: اكثر من نصف المرضى المصابين بارتفاع ضغط الدم كان ضغط الدم عندهم غير منضبط . وكانت العوامل المرتبطة بارتفاع ضغط الدم غير المنضبط :- التدخين ، و عدم ممارسة الرياضة و عدم الانتظام في تناول العلاج من قبل المرضى المصابين بارتفاع ضغط الدم.

التوصيات: يوصي هذا البحث باجراء بحوث مستفيضة وموسعة ومجتمعية مبنية على دراسة حالات في المجتمع.

ABSTRACT:

Background: Hypertension is a powerful risk factor for fatal and non-fatal cardiovascular disease events, and many randomized trials showed that hypertension control is associated with a decrease in incidence of stroke and coronary heart disease.

Objective: This study was carried out to identify the prevalence of, and factors associated with, uncontrolled hypertension in a group of hypertensive patients in Erbil.

Patients and methods: A cross sectional study was carried out. A convenience sample of 400 hypertensive patients attended outpatient clinics at Rizgary teaching hospital in Erbil city was included. This study was extended from 1st April 2011 through 31st March 2012. The data were obtained by a direct interview with the patients using a questionnaire a specially designed questionnaire. The statistical package for social sciences (SPSS, version 18.0) was used for data entry and analysis.

Results: The prevalence of uncontrolled hypertension was (58.8%). The prevalence of uncontrolled hypertension among males hypertensive patients were 61.8%.and among females were 57.5%. The Logistic regressions analysis of uncontrolled hypertension showed a statistically significant association between uncontrolled hypertension with current smoker (OR=8.77), regularity of treatment (OR=0.296), exercise (OR= 0.414) and type of antihypertensive drugs: diuretics (OR=11.938), ACEI (OR=7.907) beta blockers (OR=7.096), and CCB (OR=7.169).

Conclusions: More than half of the hypertensive patients were uncontrolled. The factors associated with uncontrolled hypertension were smoking, lack of exercise, irregularity of treatment (non adherence to treatment).

Recommendations: There is a need to stimulate researches and further studies, such as complete community-based case ascertainment.

Key words: Uncontrolled hypertension; Prevalence rate; Erbil

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INTRODUCTION:

Hypertension is a powerful risk factor for fatal and non-fatal cardiovascular disease events.[1] Randomized controlled trials have convincingly shown that treatment of hypertension reduces the risk of stroke, coronary heart disease, congestive heart failure, meta-analyses of randomized placebo-controlled trials indicate that antihypertensive therapy reduces the risk of stroke by 30%, coronary heart disease by 10% to 20%, congestive heart failure by 40% to 50%, and total mortality by 10%.[2,3] Because hypertension currently affects 1 in 4 American adults (65 million people in 1999 to 2000)[4] and may affect >90% of individuals during their lifetimes[5], adequate control of blood pressure is of enormous public health importance. The high prevalence of uncontrolled hypertension suggests that a substantial number of cardiovascular events could be prevented by improved blood pressure control. The national health and nutrition examination survey (NHANES) data indicate that slightly more than half of the individuals with uncontrolled hypertension are not on any antihypertensive medications.[6] Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40% in 2008. The proportion of the world's population with high blood pressure, or uncontrolled hypertension, fell modestly between 1980 and 2008. However, because of population growth and ageing, the number of people with hypertension rose from 600 million in 1980 to nearly 1 billion in 2008. [7] Little is known about the rate of uncontrolled hypertension in Erbil. Therefore, there is a need to have local data on uncontrolled hypertension in order to be utilized for developing a prevention control program and to be a solid database for future health care planning and guiding health policy. This study was carried out to identify the prevalence of, and factors associated with, uncontrolled hypertension in a group of hypertensive patients in Erbil.

PATIENTS AND METHODS:

A cross-sectional study conducted in Erbil city between April 1st, 2011 and March 31st, 2012 involved a convenience sample of 400 hypertensive patients attended outpatient clinics at Rizgary teaching hospital in Erbil city. A specially designed questionnaire used for data collection (direct interview). Blood pressure of all patients was measured by the investigator after a period of 10 minutes (or more) rest, in a sitting position using mercury sphygmomanometer. The mean of two readings of BP was considered. Controlled BP was defined as SBP of 140 mmHg or less and/or DBP of 90 mmHg or less. Readings above these levels were considered as uncontrolled BP.[8] Heights of barefooted patients were measured after standing with their backs close to the wall and their feet touching the wall. A fixed scale on the wall was used for height measurement in meter (m). Their weights in kilograms (kg) were measured using a standardized bathroom scale. The body mass index (BMI) was calculated according to Hanlon et al.[9] Current smoker was defined as a person who had smoked at least one cigarette per day, and non-smoker was defined as a person who never smoked. Ex-smoker was defined as anyone who had smoked at least 100 cigarettes in his or her lifetime but had stopped smoking at the time of the study for at least six months.[10] Practicing exercise was defined as walking at least 30 minutes per day.[11] The study protocol was approved by the scientific committees of the department of Community Medicine and the College of Medicine and finally approved by the ethical committee of College of Medicine and the council of

College of Medicine at Hawler Medical University. The clearance of ethical issues was taken from the ethics committee. Necessary corrections were made according to the comments of the committees. Verbal informed consent was obtained from all patients. The official permission for carrying out this study was obtained from the general directorate of health (DOH) of Erbil city and from the directorate of Rizgary teaching hospital. Data entry and data analysis was done by using Statistical package for social sciences (SPSS, version 18.0). P value $\leq$ 0.05 regarded as statistically significant. Statistical tests included Chi-square (χ^2) test to compare between the proportions, and logistic regression analysis to identify factors associated with uncontrolled hypertension.

RESULTS:

Table 1: Hypertension control by age

Age (years)	Hypertension		Total No. (%)	χ^2	P-value
	Controlled No. (%)	Uncontrolled No. (%)			
< 40	6 (50.0)	6 (50.0)	12 (100)		
40-49	19 (40.4)	28 (59.6)	47 (100)		
50-59	46 (37.4)	77 (62.6)	123 (100)	1.852	0.763
60-69	43 (41.0)	62 (59.0)	105 (100)		
≥ 70	51 (45.1)	62 (54.9)	113 (100)		
Total	165 (41.3)	235 (58.8)	400 (100)		

The sample included 400 patients (27.5% were males and 72.5% were females); their mean ± SD age was 61.07 ± 11.86 years (ranged from 24 to 85 years) with a male: female ratio of 0.38:1. The mean ± SD ages of controlled and uncontrolled hypertensive patients were 61.60 ±13.03 and 60.69±10.98 years, respectively. Results revealed that the prevalence of uncontrolled hypertension was 58.8% and the highest proportion (62.6%) of uncontrolled hypertension was in the age group 50-59 years, but there is no significant association between hypertension control and age (P=0.763) as shown in Table 1.

Table 2: Hypertension control by sex

Sex	Hypertension		Total No. (%)	χ^2	P-value
	Controlled No. (%)	Uncontrolled No. (%)			
Male	42 (38.2)	68 (61.8)	110 (100)		
Female	123 (42.4)	167 (57.6)	290 (100)	0.589	0.443
Total	165 (41.3)	235 (58.8)	400 (100)		

Table 2 show that the prevalence of uncontrolled hypertension in male (61.8%) was higher than that in females (57.6%), but there is no statistically significant association between hypertension control and sex (P=0.443).

Table 3: Logistic regressions analysis of factors for uncontrolled hypertension

Factors	B	S.E.	P-value	OR	95% CI for OR	
					Lower	Upper
Age	-.018	.011	.104	.982	.960	1.004
Sex (female)	-.808	.609	.184	.446	.135	1.469
Occupation (earner)	-1.195	.686	.082	.303	.079	1.162
Occupation (employee)	-.615	.528	.244	.541	.192	1.521
Occupation (retired)	.287	.612	.639	1.332	.402	4.417
Smoking (ex-smoker)	.144	.296	.627	1.154	.646	2.062
Smoking (current smoker)	2.171	.456	**<0.001**	**8.770**	3.590	21.422
Exercise	-.882	.313	**.005**	**.414**	.224	.764
Duration of hypertension	.003	.017	.864	1.003	.969	1.038
History of DM	-.373	.260	.152	.689	.413	1.147
History of heart disease	.515	.266	.053	1.674	.994	2.819
On treatment	-1.298	.824	.115	.273	.054	1.372
Regular treatment	-1.217	.326	**<0.001**	**.296**	.156	.561
On diet regime	-.462	.276	.094	.630	.367	1.082
Beta -blocker	1.959	.863	**.023**	**7.096**	1.306	38.547
CCB	1.970	.952	**.039**	**7.169**	1.109	46.352
ACEI	2.068	.892	**.020**	**7.907**	1.377	45.402
Diuretic	2.480	.910	**.006**	**11.938**	2.006	71.063
BMI	.028	.031	.353	1.029	.969	1.092
Constant	1.495	1.320	.257	4.460		

B: Regression coefficient **S.E: Standard error** **CI: Confidence interval**

Table 3 reveals that uncontrolled hypertension was significantly associated with current smoker (OR=8.77), exercise (OR= 0.414), regularity of treatment (OR=0.296), antihypertensive drugs like Beta blocker (OR=7.096), CCB (OR=7.169), ACEI (OR=7.907) and diuretic (OR=11.938).

DISCUSSION:

Hypertension is a serious public health problem due to its high prevalence, and good control of the disease has always considered being essential for reducing its morbidity and mortality.[12] Non-adherence is a serious problem and should be understood as one of the major obstacles to the success of the treatment. Identifying factors determining low compliance of hypertensive patients to treatment is, therefore, of vital importance in applying therapeutic strategy and in obtaining satisfactory results.[13] The results of this study show that old age contributed to the state of uncontrolled hypertension, this is similar to the result observed in several other studies where the median age of

patients was about 50-60 years.[14] A study done in Iraq shows that majority of the patients (84.7%) with uncontrolled BP were older than 50 years,[15] and this indicates the degenerative aging process resulting in thickening and loss of elasticity of arteries which is a contributing factor for high blood pressure.[16] This study show that an association between sex and BP control was not found, similar result was found in a study done in Baghdad.[15] Another study show that female patients were more compliant than males.[17] Similarly in the USA females tended to adhere better to antihypertensive drugs and to reach blood pressure control than males did, and this might be due to differences in the sample or collection site.[18] In all WHO regions, men have slightly higher prevalence of raised blood pressure than women, but this difference was only statistically significant in the Region of the Americas and the European Region.[7] This study showed a significant association between house ownership and uncontrolled hypertension, this might be related to low socioeconomic status of the patients.[19] Low and high incomes may be associated with psychological tensions which may be associated with hypertension.[20,21] The current study showed a significant association between current smoking status and uncontrolled hypertension, similar to another study which was done in Saudi Arabia.[22] Similar to the current study, several studies have shown significant association between treatment regularity (adherence to treatment) and hypertension control.[23,24] This coincides

with many studies that emphasize the role of compliance as an important determinant of hypertension control.[25] In Iraq antihypertensive drugs are usually available almost free of charge to patients. Accordingly the non-compliance observed in this study was associated with reluctance to take drugs rather than non-availability. The latter was frequently found to be an important cause in other countries.[26,27] Results showed that diet regimen plays an important role in hypertension control. This role had been studied by many authors and researchers, and had been proven as an important determinant of hypertension control.[25,27]Results revealed there is no significant association between antihypertensive drugs and hypertension control except for diuretic where 66.7% of uncontrolled hypertensive patients treated by diuretics. Similar result seen in other studies but the antihypertensive drug which is mostly associated with uncontrolled hypertension was ACEI (captopril). [15]

CONCLUSIONS:

More than half of the hypertensive patients were uncontrolled. The factors associated with uncontrolled hypertension were smoking, lack of exercise, irregularity of treatment (non adherence to treatment). There is a need to stimulate researches and further studies, such as complete community-based case ascertainment, to study uncontrolled hypertension, incidence and detect which treatment regiment and the factors that lead to better survival.

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