Self- medication among Iranian hypertensive patients in central Iran

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Research Article

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Abstract

Context: OTC or CAM self-medication in hypertensive patients could be the cause of unpredicted effects, drug interactions, compromised blood pressure and cardiovascular disorders. **Aim:** This study was conducted to evaluate self-medication with OTC or CAM and its pattern among hypertensive patients in Qom, a central state of Iran. **Settings and Design:** A descriptive cross-sectional questionnaire-based study was conducted on a sample of 200 hypertensive patients randomly chosen from patients attending a cardiovascular clinic, affiliated to Qom University of Medical Sciences in 2012. Data was analyzed using SPSS19, an analysis was conducted with descriptive analysis procedures. **Results:** 13.6% of hypertensive patients have used OTC or CAM via self-medication in the past six months, with no significant difference among different ages and genders. 76.8% of hypertensive patients used OTC and CAM without asking their practitioner or pharmacist. Painkillers by 92.4% and among them Aspirin (38.2%) were the most self-medicated OTC, while Mentha by 17.3% and Calcium by 20.6% were the most self-treated agents respectively among herbs and supplements. The most common problem, which led hypertensive respondents to self-medicate with OTC and CAM was vertigo by 37.7% and after it headache, angina and nausea. **Conclusion:** In conclusion self-medication with OTC or CAM, is not high among Iranian hypertensive patients in Qom city and it could be an index for other Iranian hypertensive patients, but we suggest a complete study in all states of Iran. As the source of information about OTC or CAM self-treatment is not an appropriate one, we suggest some radio and TV programs to aware people and furthermore, some CME courses about OTC or CAM for physicians and awareness of patients with them.

Keywords: Hypertension, OTC, CAM, self-medication, Iran.

Introduction

Hypertension is a common serious high prevalent, public health problem in many countries.[1] It is associated with increasing the risks of renal and cardiovascular diseases.[2] Epidemiologic surveys on hypertension in Iran have reported that 25% of Iranian adults have hypertension while 46% of them have pre-hypertension.[3]

On the other hand, self-medication that is defined as the use of drugs for self-diagnosed diseases or symptoms or is intermittent or continued use of a drug that has been prescribed for a chronic or recurrent symptom[4], is a common problem worldwide[5]. It is seen in developing as well as developed countrie[6-7] and is influenced by some factors such as law, economy, education, advertisement and availability of drugs[8].

The use of Over The Counters (OTC) or Complementary and Alternative Medicine (CAM) that is consisted of herbal medicines and natural supplements among patients

attending a variety of health care settings is high. 9 WHO reported, about 70% of the worldwide people use herbs as complementary and alternative medicine (CAM).[9] Such therapies in cardiovascular patients could be the cause of unpredicted effects, drug interactions, compromised blood pressure[1, 10-11] and even other cardiovascular disorders[12].

For example, use of OTC NSAIDs elevate blood pressure, particularly in patients with a history of hypertension who are already on antihypertensive medications. [13]

Also, phenylpropanolamine and Pseudoephedrine which are common agents of adult colds and OTC decongestants are sympathomimetics that reduce nasal congestion. It is documented that Ephedrine and pseudoephedrine ingestion, cause CNS stimulation, hypertension, and tachycardia, while phenylpropanolamine induces bradycardia.[14]

On the other hand, several interactions have been reported between CAM (herbs or supplements) which has been used increasingly among the community in past decade[15-17] and cardiovascular drugs[18]. For example, Capsicum, Ginseng, Licorice and ephedra Increase blood pressure[18]. Butcher's broom Decreases effects of alpha-blockers and Fumitory, Lily of the valley and Night-blooming cereus, Increase effects of beta-and calcium-channel blockers. While, Ephedra decreases effects of beta-blockers. [18] On the other hand, some supplements such as coenzyme Q10, fish oil, garlic and vitamin C reduce blood pressure. [19]

On the basis of mentioned evidences and lack of information about the pattern and prevalence of self-medication among hypertensive patients, this study designed to determine the pattern and prevalence of self-medication with OTC and CAM and to evaluate factors associated with self-medication among hypertensive patients in the Qom state (a central state in Iran). The results of our study will contribute to existing knowledge and help to enhance the health of patients suffering of high blood pressure.

Materials and Methods

A descriptive cross-sectional questionnaire-based study was carried out in cardiovascular clinic of the Shahid Beheshti hospital, affiliated to Qom university of Medical sciences, Qom, Iran, between April to August 2010. Data was collected through a structured validated questionnaire which was composed by a pharmacist, a pharmacologist and a cardiologist.

A total of 18 questions was stated concerning the following: socio-demographic characteristics, patterns of self-medication (e.g., The pattern of self-medicated OTC or CAM), source of information regarding OTC or CAM self-medication and health condition that pushed hypertensive patients to self-medicate with OTC or CAM.

The survey was conducted by two trained undergraduate (1st-year, nursing) students of Qom University of Medical sciences. The interviewers carried out face-to-face interviews in Persian language with 200 hypertensive respondents.

On completion, the data were reviewed, organized, tabulated and analyzed by Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) version 19.

Descriptive analysis was conducted by calculating means and proportions for continuous and discrete data respectively. The chi square test and independent T test were used to test statistical significance. The limit for statistically significant differences was $P<0.05$.

Results

Of 200 patients treated for hypertension 199 (99.5%) agreed to participate in our random cross-sectional study (simple randomized sampling) and filled questionnaire between April to August 2010. Table 1 shows the demographic characteristics of participants. Among respondents, 28.6% were male, 71.4% female and mean age of them was 62 ± 0.99 years.

99.5% of respondents mentioned that they visit a general physician at least once a year, while 97.5% of them said that they visit a cardiologist once or more in a year. There was no significant difference in visiting cardiologist between male and female respondents (P=0.14) and among different ages (P=0.37). Also, there was no significant difference in visiting a general physician between male and females (P=0.22) and among different ages of respondents (P=0.48).

The prevalence of OTC and CAM self-medication within past six months of the study period was 13.6% (n= 27), with 15.5% of female and 8.8% of male patients. There was no significant difference (P=0.21) between male and female respondents in their self-medication (Table 2). Also there was no significant difference (p=0.5) in self-medicating among different groups of ages.

Furthermore, 21.2% of them reported that they usually use consultation of a physician for OTC or CAM consumption

while 2% mentioned they ask from a pharmacist and 76.8% said that they use OTC or CAM with any practitioners consult.

We didn't find any significant difference (P=0.29) between the genders and no significant difference (P=0.49) among different ages in asking a practitioner before OTC or CAM consumption.

Table 1: Socio-demographic characteristics of respondents (n=199)

Characteristic	n	Percentage
Gender		
Male	57	28.6%
Female	142	71.4%
Age, years		
28-48	34	17.1%
49-68	92	46.2%
69-90	73	36.7%
Educational level		
Non-educated	143	71.9%
Elementary school	36	18.1%
Guidance and High school	10	5%
Diploma and University education	10	5%
Marriage		
Married	150	75.4%
Single	2	1%
Divorced	2	1%
Widow or widower	45	22.6%
History of Treatment		
Life style modification	2	1%
Medications	52	26.1%
Life style modification + Medications	145	72.9%

Table 2: Correlation of gender and OTC or CAM self-medication

Variable	Self-medicated	Did not self-medicate
Male	5(8.8%)	52 (91.2%)
Female	22(15.5%)	120 (84.5%)

There was no significant difference (P=0.37) between males and females, Figures in parentheses are in percentage.

The most OTC which was self-medicated in the past two weeks of the study were pain killers by 92.4% of self-medicated respondents and among pain killers, Aspirin (38.2%), acetaminophen (31.2%), and then Iboprophen (21.1%) were the most used agents (Figure 1). While, among herbal medicines Mentha (17.3%) and borago (11.1%) were the most self-medicated herbs (Figure 2), and the most self-medicated supplements were Calcium (20.6%) followed by Folic acid (16.1%) as mentioned in figure 3.

Our findings revealed that the illnesses which led the participants to self-treat with OTC or CAM, the most common was vertigo (37.7%), headache (20.1%), angina (18.1%), nausea (4.5%) and etc (Figure 4).

Response to questions concerning health seeking behavior and self-medication with OTC or CAM, according to differences in Sociodemographic variables are shown in table 3. The only significant relationship was identified for age and knowledge of respondents about side effects of OTC or CAM and their effects on hypertension or

interactions with hypertensive agents. Results show that the knowledge of age 69-90 years is significantly (P=0.01) less than the other ages. There is no other statistically significant relationship for any question and Sociodemographic variables.

Table 3: Response to questions about self-medication and health-seeking behavior, differences by demographic variables (n=199)

| Characteristic	Q1			Q2			Q3		
	Yes, n (%)	No, n (%)	P value	Yes, n (%)	No, n (%)	P value	Yes, n (%)	No, n (%)	P value
Gender			0.4			0.8			0.55
Male	5(8.8%)	52 (91.2%)		6(10.5)	51(89.4)		13(22.8%)	44(77.2%)	
Female	22(15.6%)	119(84.4%)		17(12%)	125(88%)		41(28.9%)	101(71.1%)	
Age, years			0.7			0.4			0.01**
28-48	6 (17.6%)	28 (82.4%)		6(17.6%)	28(82.4%)		13(38.2%)	21(61.8%)	
49-68	12 (13%)	80 (87%)		10(10.9%)	82(89.1%)		30(32.6%)	62(67.4%)	
69-90	9 (12.3%)	64 (87.7%)		7(9.6%)	66(90.4%)		11(15.1%)	62(84.9%)	
Educational level			0.63			0.8			0.13
Non-educated	17(11.8%)	126(88.1%)		19(13.3%)	124(86.7%)		35(24.5%)	108(75.5%)	
Elementary school	6(16.7%)	30(83.4%)		2(5.6%)	34(94.4)		13(36.1%)	23(63.9%)	
Guidance and High School	1(10%)	9(90%)		1(10%)	9(90%)		4(40%)	6(60%)	
Diploma and University education	3(30%)	7(70%)		1(10%)	9(90%)		2(20%)	8(80%)	
Marriage			0.45			0.1			0.06
Married	19(12.7%)	131(87.3%)		14(9.3%)	136(90.7%)		42(28%)	108(72%)	
Single	1(50%)	1(50%)		0(0%)	2(100%)		2(100%)	0(0%)	
Divorced	0(0%)	2(100%)		1(100%)	1(0%)		1(50%)	1(50%)	
Widow or widower	7(15.5%)	38(84.4%)		8(17.8%)	37(82.2%)		8(17.8%)	37(82.2%)	
History of Treatment			0.2			0.3			0.78
Life style modification	1(50%)	1(50%)		2(100%)	0(0%)		1(50%)	1(50%)	
Medications	10(19.2%)	42(80.8%)		4(7.7%)	48(92.3%)		13(25%)	39(75%)	
Life style modification + Medications	16(11%)	129(89%)		17(11.7%)	128(88.3%)		40(27.6%)	105(72.4%)	
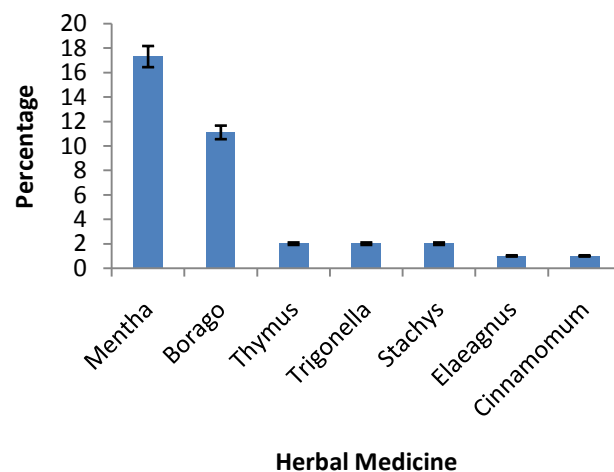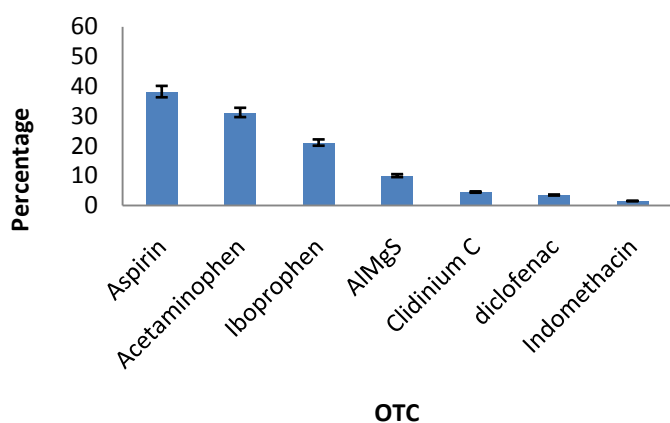
Figure 1: Self-medicated OTC used by hypertensive patients

Figure 2: Self-medicated herbal medicines used by hypertensive patients
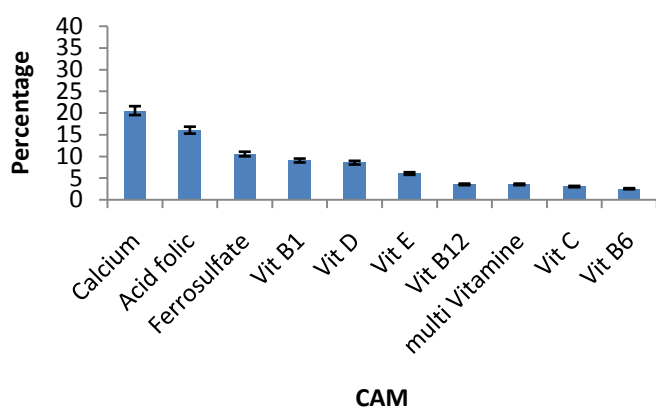
Figure 3: Self-medicated supplements and natural products used by hypertensive patients
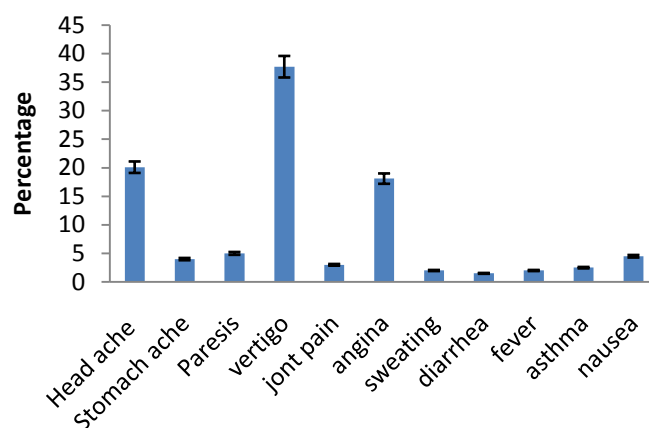
Figure 4: Medical conditions pushed hypertensive patients to self-medicate (Other causes: constipation, bloody nose, arthritis, insomnia and fever.)

Discussion

This study evaluated self-medication with OTC or CAM among hypertensive patients in Qom, (a central state of Iran). The population of this study consisted of hypertensive patients admitted cardiovascular clinic of the Shahid Beheshti hospital, affiliated to Qom university of Medical sciences.

The present results indicated that self-medication with OTC or CAM among hypertensive patients was about 13.6% that is not high. Our finding was in accordance with the results of another study in Singapore[15] which revealed 14.5% of CAM self-medication in a hypertensive population. In contrast, there are some higher prevalence of CAM use among UK[1] and US[20] hypertensive patients, respectively by 43.1% and 69.5%.

The variation of findings could because of differences in studying population, time periods and kind of study CAM. For example, UK study added praying and Yoga to CAM and it could be the reason of higher prevalence of CAM use in that study.

In our findings, there was no significant difference between genders or ages in self-medication. It was in agreement with findings of Gohar *et al.*, (2008)[1], while there are some other studies that mention women use more CAM[21].

The most used herbal product was Mentha (17.3%), while Amira *et al.*,(2007) reported Garlic as the most used herbal medicines in Nigerian cardiovascular patients by 69%[22]

and pharand *et al.*,(2003) mentioned the same herb (Garlic) by 13%[23] among Canadian cardiovascular patients as the most consummated herb. This difference could because of the difference in personal values, religious, cultures, traditional medicines, health philosophies and availability of plants.[16, 24-27]

The present results indicate that the most commonly used OTC were painkillers by 92.4%. Our finding was in agreement with an earlier study[23], while most studies on self-medication in cardiovascular diseases reported CAM consumption and not OTCs.[28]

Two recent studies have found that code liver oil1, and Vitamins[29] were the most used supplements among cardiovascular patients, while our results don't agree with them, and reveals that calcium (20.5%) and folic acid (16%) are the most used supplements.

In another part of the study, we found that 76.8% of respondents use CAM or OTC without physicians consult. There are higher results in two studies in Singapore[15] among patients with chronic diseases and UK[1] in hypertensive patients, respectively by 84% and 93.3%, while findings of two other studies from Australia[30] and Italy[31] revealed lower consumption of CAMs without physicians consult, by 57.2% and 59.3% respectively.

In the last part of our study, we found that hypertensive patients with vertigo, headache and angina were more likely to self-medicate with OTC or CAM. However, it was in agreement with the results of other studies in Singapore[15], Sweden[32] and Italy[33] which revealed that

chronic diseases are the main reasons of CAM consumption.

Conclusion

In summary, self-medication with OTC and CAM (herbal medicines and natural supplements) is not very high among Iranian hypertensive patients in Qom city. However, we suggest a complete study on the OTC and CAM consumption in Iran. In addition, we suggest some CME (Continued Medical Education) courses about OTC, CAM and their interactions with official medicines for physicians and pharmacists to be aware of their probable interactions and even dangers of them. So, they could aware patients of the dangers associated with self-medication and the importance of consulting with their practitioners for OTC, herbal medicines and natural supplements. Also, we believe that booklets and some programs in Radio and TV could be useful for these patients and even society.

Acknowledgment

Limitations

As this study was a cross-sectional survey, it illuminates the current situation which could be different in other seasons of the year.

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