

Optimized model to increase treatment adherence in hypertensive patients in the family physician's office

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Abstract

The CombatAsist sessions led to the development of teams trained in the management of hypertensive patients in the family physician's office. The physician-nurse team has a central role in advising and educating the patient in order to increase treatment adherence. The objectives of this study consisted in identifying the major factors involved in decreasing compliance with antihypertensive drug regimens and in establishing the appropriate time needed to advise and educate patients in order to maintain blood pressure values below 140/90 mmHg. Eight family physicians from across the country have enrolled 150 hypertensives uncontrolled under antihypertensive treatment in whom factors that decrease adherence have been identified through a questionnaire. The selected group has been randomly assigned to three subgroups, with follow-up visits established at one month, for 90 days. The first subgroup underwent a standard 15 minute consult every month. The second subgroup underwent a personalized additional 10 minute consult the first month and a 5 minute consult the second month. The third subgroup underwent an additional personalized 15 minute consult in the first month, 10 minute consult in the second month and a 5 minute consult the third month, respectively. According to our results, the increase in treatment adherence depends directly on a personalized consult, on the number and the duration of the consult for each patient. This optimized model could be implemented in a national programme within the primary health care system in Romania, in order to decrease cardiovascular morbidity and mortality.

Keywords: arterial hypertension, personalized counseling, compliance, adherence, family physician

Introduction

The CombatAsist sessions developed under the auspices of the Romanian Society of Hypertension have

trained between 2014–2015 mixed teams made up of family physicians and nurse practitioners in order to manage hypertensives in the family physicians' office. Such teams have a central role in advising and educating the hypertensive patients [1]. Involving the patient in the decision making process regarding his drug treatment increases adherence to medical recommendations, pharmacological and

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non-pharmacological. [2, 3] The main goal is to achieve and maintain normal blood pressure values.

The objectives of this study are:

- identifying major factors that decrease compliance in hypertension treatment [4].
- identifying an appropriate supplementary consult duration, in addition to the standard visit duration, thus offering hypertensives a personalized counseling, with the ultimate goal of achieving blood pressure readings below 140/90 mmHg [5].

Material and methods

We developed an observational descriptive and quantitative study, enrolling 150 patients seen at eight offices of family medicine in Romania, previously diagnosed with hypertension and undergoing treatment.

Inclusion criteria were: patients diagnosed with hypertension for at least one year (secondary causes already excluded), with blood pressure readings persistently higher than 140/90 mmHg at the last three visits, despite having been prescribed a drug regimen. In addition, patients with neurocognitive disorders (dementia, schizophrenia, mental retardation) that could impact compliance to treatment were excluded. All patients gave their consent to participate in the study.

In order to identify individual risk factors impacting compliance, we have developed a questionnaire that consisted of six sections: general information about the patients, information related to respecting their drug prescription, lifestyle, awareness about hypertension and its complications, understanding the benefits of following treatment and factors that prevent treatment administration. Each patient enrolled in the study was asked to fill in the questionnaire.

Based on the data obtained, individual factors that impact treatment adherence and define the personalized counseling for each patient were identified.

The selected group was randomly assigned to three other subgroups, followed-up for 90 days, with monthly established visits. The first subgroup underwent a standard 15 minute consult every month.

The second subgroup underwent a personalized additional 10 minute consult the first month and a 5 minute consult the second month. The third subgroup underwent an additional personalized 15 minute consult in the first month, 10 minute consult in the second month and a 5 minute consult the third month, respectively.

Patients in the second and third subgroup received at the end of the first consult a blood pressure monitoring journal and were asked to measure their blood pressure once a week, at two different times in the day and to note them down in the journal. In order to ensure that blood pressure measurement is done correctly and in similar conditions, patients were instructed by nurses how to take their blood pressure and they received instructions in writing, as well.

1. Measure your BP at least 30 min after meals/coffee/smoking
2. Quiet room, thermal comfort, about 22-23 C°
3. Sit down for 3-5 min before measuring your BP
4. Supported legs (not crossed)
5. Supported back
6. Cuff at heart level
7. Supported forearm/elbow
8. Do not talk while your BP is measured

NB: three measurements are required, taken at 2 minute-intervals; the mean of the last two should be noted down.

Data were analyzed using the SPSS 16 version software. The Chi-squared test was used to identify factors that influence treatment adherence. The T test was utilized to compare mean blood pressure values among the three subgroups at each visit.

Results

Among the 150 patients enrolled in the study, 72 (47.9%) of these were female. The mean age (SD) of the participants was 61.81 (11.14) years (interval 37-87 years).

Regarding drug regimen adherence, results show that a quarter of patients (26%) are compliant (they take their medication on a daily basis). Less than a quarter (n=33, 22%) take only one antihypertensive

Table 1. Percentage distribution of patients according to responses, identifying patient awareness regarding hypertension.

	Completely agree	Agree	I don't know	Completely disagree
Hypertension is a serious disease	24	44	26	6
Hypertension cannot be cured	38	43	16	3
Hypertension can complicate with other diseases	35	47	13	5
HTN affects the heart and blood vessels	47	30	18	5
HTN can lead to stroke	85	15	0	0
HTN affects the eyes	16	38	38	8
HTA affects the kidneys	9	39	46	6
HTN affects the brain	27	49	17	7
I could become disabled due to HTN related complications	36	40	18	6
I could die due to HTN related complications	47	45	8	0

drug from their regimen and a significant percentage – 78% (n=117 patients) take the medication prescribed for other comorbidities on a regular basis.

The main reason to discontinue treatment was symptom improvement – 38% (n=57) and a statistically significant correlation has been observed between lack in adherence and symptom improvement (p=0.000). Sixteen per cent (n=24) of patients discontinue drug treatment for fear of adverse reactions and 8% (n=12) because they consider their treatment to be inefficient. Moreover, a statistically significant association has been noted between these parameters and lack in treatment adherence (p=0.03, p=0.01 respectively).

With regard to patient awareness concerning hypertension and its complications, results are shown in Tabel 1. All patients enrolled in the study recognize stroke as a complication of hypertension and 92% (n=138) of subjects agree that death can occur due to complications related to hypertension. Approximately half of patients recognize that hypertension can affects the eyes (54%) or kidneys (48%).

The Chi-squared test showed a statistically significant correlation between the perceived risk of stroke (p=0.001) and death (p=0.003) due to hypertension and following treatment.

There is also a statistically significant correlation between decreased treatment adherence and alcohol consumption (p=0.023), smoking (p=0.002), increased salt intake (p=0.000).

The three subgroups were homogenous with regard to age and blood pressure values at the first visit.

In the first subgroup, which did not benefit from additional counseling (regarding hypertension and the importance of treatment) there was no significant decrease in blood pressure values (p=0.92) at the end of the study, while the mean blood pressure readings was above 140/90 mmHg (155/88 mmHg).

In the second subgroup, which benefited from additional counseling (10 minutes in the first month and 5 minutes in the second month), there was a significant decrease in blood pressure readings (p=0.036) at the end of the study, however, the mean blood pressure value was higher than 140 mmHg (143/83 mmHg).

In the third group, which benefited from additional counseling of longer duration (15 minutes in the first month, 10 minutes in the second month and 5 minutes in the third month), there was a significant lowering of blood pressure readings (p=0.000), while the mean blood pressure values was lowe than 140 mmHg (136/79 mmHg).

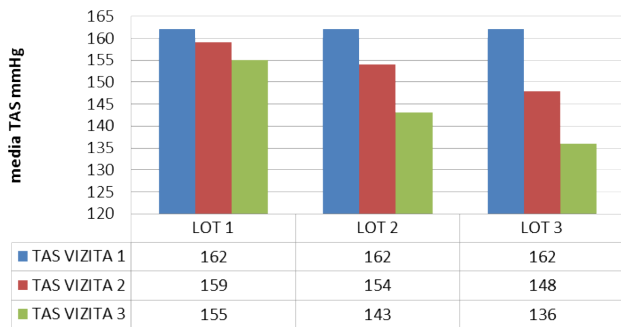


Figure 1. Systolic blood pressure dynamic in the three subgroups according to each visit.

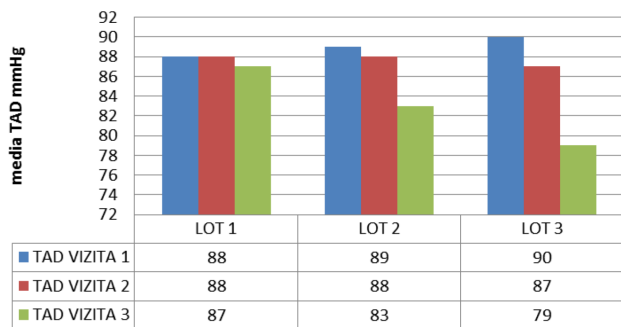


Figure 2. Diastolic blood pressure values in the three subgroups, according to each visit.

The above mentioned are illustrated in figures 1 and 2 below.

Discussions

Treatment adherence is a complex and multidimensional phenomenon. It generally implies that a patient is actively involved in monitoring his health status and it requires professionalism, time and communication abilities.

Factors identified by each patient after the questionnaire has an impact over the patient’s decision. Understanding how these factors determine the relationship the patient has with his disease is an important instrument when the family physician takes on different educational strategies to increase acceptance and adherence to every therapeutic aspects in the treatment of hypertensive patients.

→ On the first visit of a hypertensive patients, a 15 minute counseling is recommended. Any

information the patient should know about risk factors, hypertension and the importance of following treatment in order to prevent complications should be offered at this time.

→ The optimal duration to reinforce the personalized information offered is 15 minutes at the first visit, 10 minutes at the second visit and 5 minutes at the third visit, respectively.

Increasing adherence is directly related to offering personalized counseling, its duration and the number of such visits, as well as counseling for lifestyle modifications.

The professional and communication abilities developed by nurse practitioners during and following the CombatAsist sessions have created the premise for the family physician-nurse practitioner team to offer personalized information for each hypertensive patients in an optimal time interval, in addition to usual consultation times, in order to increase patient adherence to their personalized drug regimen and lifestyle recommendations.

This model can be optimized and implemented within a national programme addressing primary care in Romania, with the main goal to decrease cardiovascular morbidity and mortality rates.

Conflict of interest

The authors confirm that there are no conflicts of interest.

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QUESTIONNAIRE

Factors involved in the hypertensive patients’ adherence to treatment

Part of the research project: **Optimized model of increasing treatment adherence in hypertensive patients in the family physician’s office**

Responder identification code:

Investigator identification code:.....

Section 1. GENERAL INFORMATION

1. Age
2. Gender: Female Male
3. For how long have you been diagnosed with high blood pressure?years
4. How many antihypertensive drugs are you taking?
5. Does your daily treatment involve other drugs? If yes, how many per day?

Section 2. FOLLOWING YOUR DRUG REGIMEN

1. How often do you forget to take your medication? Daily Frequently Rarely Never
2. Do you stop taking your treatment if you feel better? no yes
3. Do you stop taking your treatment if you believe they are inefficient? no yes
4. Do you stop taking your treatment for fear of adverse reactions?
(Dizziness/weakness/headache etc.) no yes
5. Do you stop taking your treatment in order to avoid drug dependence? no yes
6. Do you stop taking your treatment because you prefer using traditional medicines? no yes

Section 3. LIFESTYLE

1. Do you smoke? no yes
2. Do you drink alcohol? no yes
3. Do you exercise/walk at least 30 min daily? no yes
4. Do you add salt to your food? no yes
5. Do you eat animal fats? no yes

Section 4. UNDERSTANDING DISEASE SEVERITY

To what extent do you agree with the following:

	Completely agree	Agree	I don't know	Disagree	Completely disagree
1. Having high blood pressure worries me					

2. Hypertension is a dangerous disease					
3. Hypertension is incurable					
4. Hypertension can complicate with other diseases:					
4.1 Heart and vascular disease					
4.2 Stroke					
4.3 Eye disease					
4.4 Kidney disease					
4.5 Brain disease					
5. I could become disabled due to complications					
6. I could die due to complications					

Section 5. UNDERSTANDING BENEFITS

To what extent do you agree with the following affirmations regarding the benefits of treatment adherence?

	Completely agree	Agree	I don't know	Disagree	Completely disagree
1. Adequate blood pressure control					
2. Complication prevention					
3. Improved quality of life					
4. Improved wellbeing					
5. Lower drug costs					
6. Lower death rates					
7. The following measures can contribute to lower blood pressure					
7.1 Smoking cessation					

7.2 Alcohol abstinence					
7.3 Salt reduction					
7.4 Renouncing animal fats					
7.5. Exercise					

Section 6. BARRIER PERCEPTION

To what extent do you believe the following prevent you from following your treatment as prescribed?

	Completely agree	Agree	I don't know	Disagree	Completely disagree
1. Too many pills					
2. Adverse reactions					
3. Treatment is costly					
4. Lack of motivation due to lack of cure					

THANK YOU!