Stališča zdravnikov družinske medicine in njihovih bolnikov do izvajanja 24-urnega neinvazivnega merjenja krvnega tlaka v ambulanti družinske medicine

Attitudes of general practitioners and their patients about ambulatory blood pressure monitoring in family medicine

Avtor / Author

Ustanova / Institute

Marija Petek Šter[1], Janko Kersnik[2]

[1]Medicinska fakulteta Univerze v Ljubljani, Katedra za družinsko medicino, [2]Medicinska fakulteta Univerze v Mariboru, Katedra za družinsko medicino, Maribor, Slovenija

[1]Faculty of Medicine University of Ljubljana, Department of family medicine, Ljubljana Slovenia, [2]Faculty of Medicine University of Maribor, Department of family medicine, Maribor, Slovenia

Ključne besede:
arterijska hipertenzija, 24-NMKT, stališča, sprejem, družinska medicina

Key words:
hypertension, ABPM, attitudes, acceptance, family medicine

Članek prispel / Received
19.03.2009
Članek sprejet / Accepted
20.09.2009

Naslov za dopisovanje / Correspondence
Doc. dr. Marija Petek Šter, dr.med.
Katedra za družinsko medicine
Medicinska fakulteta Univerze v Ljubljani, Poljanski nasip 58
1000 Ljubljana, Slovenija
Telefon +386 31 607752
Fax +386 7 3481769
E-pošta:
marija.petek-ster@mf.uni-lj.si

Izvleček

Namen: *24-urno neinvazivno merjenje krvnega tlaka (24-NMKT) je vse pogosteje uporabljena metoda merjenja krvnega tlaka v družinski medicini, vendar pa o stališčih zdravnikov in njihovih bolnikov o uporabi 24-NMKT na primarnem nivoju zdravstvenega varstva v Evropi vemo le malo.*

Metode: *V presečni raziskavi so sodelovali bolniki z nenadzorovanim krvnim tlakom ob kombinacijskem zdravljenju z vsaj dvema antihipertenzivnima učinkovinama, ki so opravili 24-NMKT pri 38 zdravnikih družinske medicine v Sloveniji. Bolniki in zdravniki so izpolnili vprašalnik o zadovoljstvu, stališčih in sprejemljivosti 24-NMKT v ambulanti družinske medicine. Sprejemljivost in stališča do 24-NMKT v družinski medicini smo ocenjevali s pomočjo uporabe 5-stopenjske Likertove lestvice.*

Abstract

Purpose: *Ambulatory blood pressure monitoring (ABPM) is increasingly being used in general practice, but there is a lack of information about the attitudes of general practitioners and their patients about the use of ABPM in primary care in Europe.*

Methods: *Cross sectional survey performed on consecutive patients with uncontrolled hypertension treated by at least two different antihypertensive drugs and referred for ABPM in 38 general practices in Slovenia. Patients and physicians completed a questionnaire about their satisfaction with, attitudes about and acceptance of ABPM in general practice; the latter two were assessed using 5 point Likert scales.*

Results: *We obtained complete data for 185 patients; 95 female (51.4 %) and 90 (48.6%) male, aged 37 to 79 years (mean 59.5, SD 9.5*

Rezultati: *Zbrali smo podatke o 185 bolnikih; od tega je bilo 95 žensk (51,4 %) in 90 (48,6 %) moških, starih od 37 do 79 let (povprečje 59,5, SD 9,5 let). 106 (67,3 %) bolnikov je bilo v celoti zadovoljnih s prejetimi navodili pred izvedbo 24-NMKT. Bolniki so 24-NMKT ocenili kot sprejemljivo metodo merjenja krvnega tlaka. Prepričani so bili, da 24-NMKT pomaga k boljšemu nadzoru krvnega tlaka (Likertova lestvica: 4,46, SD 1,03), možnost, da opravijo 24-NMKT v ambulanti družinske medicine, pa so ocenili kot pomembno prednost (Likertova lestvica: 4,65, SD 1,01).*

Zdravniki družinske medicine so bili prepričani, da je 24-NMKT za bolnike sprejemljiva metoda merjenja krvnega tlaka, ki izboljša bolnikov in zdravnikov interes za izboljšanje nadzora krvnega tlaka, izboljša bolnikovo sodelovanje pri zdravljenju ter zmanjša predpisovanje antihipertenzivnih zdravil. Menili so, da je korist 24-NMKT največja ob sumu na hipertenzijo (Likertova lestvica : 4,79, SD 0,49).

Zaključek: *24-NMKT je sprejemljiva metoda merjenja krvnega tlaka za bolnike in zdravnike družinske medicine. Bolniki so možnost, da preiskavo opravijo v ambulanti družinske medicine, ocenili kot pomembno prednost.*

years). 106 (67.3 %) patients were completely satisfied with the instructions given before ABPM. Patients found ABPM an acceptable method of blood pressure control. They believed that ABMP helped to reach better blood pressure control (Likert scale: 4.46, SD 1.03) and valued having access to ABPM in general practice (Likert scale: 4.65, SD 1.01).

General practitioners strongly believed that ABPM was acceptable to patients, improved patient and physician interest in blood pressure control, improved compliance with treatment and reduced prescription of antihypertensive drugs. They recognised ABPM as being most valuable in cases of patients with suspected white-coat hypertension (Likert scale: 4.79, SD 0.49).

Conclusions: *Patients and general practitioners find ABPM to be an acceptable method for investigating blood pressure. Patients value being able to access ABPM in general practice rather than in a specialist setting.*

INTRODUCTION

Ambulatory blood pressure measurement (ABPM) is increasingly being used in clinical practice. With ABPM we can obtain information on daytime as well as night-time blood pressure profiles, day–night blood pressure profiles, day–night blood pressure differences, morning blood pressure rises and blood pressure variability (1).

ABPM may improve the prediction of cardiovascular risk in both untreated and treated patients with hypertension (2–7). ABPM is more expensive than office blood pressure measurement, but the benefits to patients would seem to justify the additional expense. For one thing, ABPM should prevent us from treating patients with white coat hypertension. For another, it has been shown that when ABPM, rather than office blood pressure measurements, is used as the basis for prescribing, significantly less antihypertensive medication is prescribed (8). Taking into consideration the prescription of 3 to 14% fewer antihypertensive drugs for the same level of blood pressure control and the treatment of 10 to 23% fewer patients, the cost of incorporating ABPM is the same as using office blood pressure measurement: the lower cost of drug treatment covers the costs of ABPM (9).

The 2007 Guidelines for the management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ECS) (10) and Slovenian national hypertension guidelines (11) generally promote the use of office blood pressure measurement but nevertheless recommend using ABPM in the following defined circumstances: considerable variation in office blood pressure readings, high office blood pressure in subjects with low cardiovascular risk, marked discrepancy between measurements in the office and at home, suspected resistance to drug treatment, and suspected hypertensive episodes.

Patients undergoing ABPM testing are required to wear the device for 24 hours, during which time a monitor records blood pressure at regular programmed intervals. Since patients are asked to undergo normal daily activities while wearing the monitor, they will probably have some discomfort, which may have a negative influence on their acceptance of the investigation. The only available information about acceptance of ABPM in the primary care setting is from the United States, where a study found that 75 % of patients believed undergoing the test was worthwhile in terms of the time spent and the cost involved, 90 % reported that they thought the information provided by the test would be helpful to their physicians in making treatment decision, and only 20 % found the test uncomfortable (12).

There are no data about the acceptance of ABPM in Europe. In Slovenia, we have implemented ABPM in the management of hypertension in general practice, where the majority of the hypertensive patients are managed. We previously found that ABPM is a feasible method of blood pressure monitoring in general practice and reduced the probability of antihypertensive drug changes (13). In the present study, we investigated whether both general practitioners and patients find it acceptable.

MATERIALS AND METHODS

Participants

We took a convenience sample of 58 general practitioners performing ABPM in their practices, of whom 38 general practitioners (response rate 65.5 %) agreed to participate.

Each of the participating general practitioners from the 38 different general practices included 5 consecutive patients with uncontrolled hypertension (target blood pressure values below 140/90 mmHg for non-diabetic patients, or below 130/80 mm Hg for diabetic patients, not reached) according to the office blood pressure measurements, (ii) treated with combination antihypertensive drug therapy, and (iii) aged between 18 and 80 years. All the participants gave written informed consent prior to undergoing ABPM.

The physicians did not report that any patients refused to participate in the study. We obtain complete data for 185 out of the 196 patients; only patients for whom we obtained complete data were included in the analysis.

Description of the ABPM service

In April 2007, 52 ABPM devices (Mobilo-O-Graph, I.E.M. GmbH, Germany) were provided to general practices in Slovenia through the project "24 hour ABPM in general practice in Slovenia" which was led by the Slovene Family Medicine Society.

All the physicians and nurses involved in the ABPM service undergo education. The education for the nurses consists of learning how to fit the monitor and prepare the patient for monitoring. The nurses have a key position in educating the patient about the process of monitoring. The nurses also prepare simple written instructions about the procedure for the patients. The physicians attend a four-hour workshop about the clinical indications for ABPM and how to interpret the results, led by an expert from the Hypertension department of the University hospital of Ljubljana.

The cost of ABPM in general practice in Slovenia is not covered by medical insurance unless it is performed at a secondary level, although there is evidence that after ABPM significantly less antihypertensive medication is prescribed (8,9). At that moment, the majority of the general practitioners perform ABPM for their patients without any financial reimbursement.

Description of the study design

We included consecutive patients with uncontrolled arterial hypertension aged between 18 to 80 years, treated with at least two different antihypertensive drug classes, in 38 general practitioners' offices in Slovenia. After they gave their informed consent, we randomly divided the patients into the test group (ABPM) and the control group (office measurements only). For the purpose of the current analysis we included only the patients from the test group.

We asked participants to complete a questionnaire

(see details below) immediately after undergoing ABPM and asked questions about their satisfaction with the instructions they had received before ABPM, the acceptability of ABPM, and their attitudes to ABPM.

Questionnaires

We developed two questionnaires: one for the patients and the other for the physicians. In accordance with the findings from a literature review and on the basis of our own experiences with ABPM, we performed a pilot study about experiences with ABPM in general practice (14). In this pilot study in one general practice, we also tried to assess patients' attitudes to ABPM using yes/no questions. After analyzing the pilot data and taking into account the physicians' comments, we developed our final questionnaire.

Patient questionnaire

After undergoing ABMP patients completed the questionnaire about their satisfaction with the instructions they had received before ABPM, the acceptability of ABPM, and their attitudes to ABPM. In the final question we asked the patients whether they would undergo repeat ABPM if necessary. To assess patient satisfaction with the instructions given before ABPM, we used yes/no questions. To assess the acceptance of ABPM we use 5 point Likert scales (1 not at all, 5 entirely). To find out to what extent patients found the procedure disturbing, we used three questions: was the procedure in general disturbing, did the procedure disturb the patient's daily life and activities, and did the procedure disturb sleep. To assess patient attitudes to the usefulness of ABPM in achieving better blood pressure control and to performing ABPM in general practice instead of a specialist's office, we used 5 point Likert scales (1not at all, 5 entirely). Finally we asked the patients about their willingness to undergo repeat ABPM if necessary with a yes/no question.

General practitioner questionnaire

We asked general practitioners about their attitudes to ABPM in general practice via 7 questions using 5 point Likert scales: ABPM gives me valuable information about blood pressure values, ABPM is acceptable for patients, ABPM increases the interest of general practitioners in better blood pressure control, ABPM increases the interest of patients in better blood pressure control, ABPM improves blood pressure control in selected patients with hypertension, ABPM reduces antihypertensive drug prescribing, and ABPM is an appropriate method for general practice. Finally we asked physicians to assess the importance of four different indications for ABMP using a 5-point Likert scale not at all, 5 entirely).
The data were obtained between November 2007 and August 2008.

Ethical approval

The study protocol was approved by the National Ethical Committee on 17 July 2007, approval number 100/07/07.

Statistical analysis

The SPSS 14.0 for Windows was used for all statistical analyses. We used descriptive statistics, namely, means and standard deviations (SD) to describe the samples and analyze patient and physician attitudes to ABPM.

RESULTS

Characteristics of patients and physicians

There were 185 patients: 90 (48.6%) males and 95 (51.4%) females, aged between 37 and 79 years, with a mean age of 59.5 years (SD 9.5 years). Diabetes mellitus was presented in 42 (22.7 %), renal disease in 7 (3.8 %), atrial fibrillation in 5 (2.7 %), ischemic heart disease in 12 (6.5 %), cerebrovascular disease in 5 (2.7 %) and other forms of atherosclerotic disease in 6 (3.2 %) patients.
The sample of general practitioners consisted of 38 physicians: 10 men (25.9 %) and 28 (74.1 %) women, aged from 32 to 62 years, with a mean age of 46.9 years (SD 6.8 years). All the participating physicians were trained in general practice, with 2 to 31 years (mean 18.7, SD 7.5 years) of experience working in general practice. 12 physicians (31.6 %) had a register of patients with hypertension. All participat-

ing physicians had been trained in the analysis and interpretation of the ABPM. Physicians, with exception of one doctor, analyzed and interpreted the ABPM results themselves.

Patient questionnaire

Information about ABPM

Only 1 of the 185 patients (0.5 %) reported that he or she had not received any information about ABMP. 79 patients (42.7 %) answered that they would like to have been given more information about the test. The number (percentage) of patients who remembered being told specific pieces of information about ABPM is given in table 1.

Patient attitudes and acceptance of ABPM in general practice

Table 2 outlines patient attitudes to ABPM using 5 point Likert scales (1 not at all, 5 entirely). Overall, the ABPM sessions were well tolerated, with only 13 (7.3 %) patients reporting one or more complications. None of the patients failed to wear the device for the full duration of the testing period. The most frequent complaints were: technical problems with the device (7 patients), petechiae at the cuff site (2 patients), dermatitis at the cuff site (1 patient) and other (but not defined by the patient) problems (3 patients.) 175 patients (94.6 %) said they would under repeat ABPM if necessary.

Table 1. *Number (percentage) of patients who received information about, descriptions of, or instruction in the different aspects of ABPM.*

Information, description or instruction	Number (percentage) of patients, N=184
Information on frequency of cuff inflation	179 (97.3 %)
Information that a sound will be heard before the measurement (in daytime)	176 (95.7 %)
Description on what happens in cases of unsuccessful measurement	146 (79.3 %)
Instruction for resting the arm during measurements	179 (97.3 %)
Instruction for resting the arm in the heart level during measurements	173 (94.0 %)
Instruction to take part in usual daily activities during the procedure	176 (95.7 %)
Caution that the device should not be exposed to the water	179 (97.3 %)
Instruction that the device should be in place during the night	183 (99.5 %)
Information that the monitor could be put under the pillow or on the bedside table during the night	134 (72.8 %)
A telephone number in case of difficulties with the device	131 (71.2 %)
Information about dermatitis or bruising under the cuff	116 (63.0 %)

Table 2. *Patients' attitudes to the ABPM (5 point Likert scale, 1-not at all, 5-entirely)*

Attitude	Mean value (SD), N=185
ABPM was in general uncomfortable.	2.01 (1.15)
The procedure disturbed my daily life and activities.	2.16 (1.15)
During the night my sleep was disturbed .	2.56 (1.33)
ABPM will help with better blood pressure control .	4.44 (1.03)
It is a privilege for me to have the opportunity for ABMP in general practice .	4.65 (1.01)

Physician questionnaire

Attitudes to ABPM

Table 3 outlines general practitioners' attitudes to ABMP in general practice on 5 point Likert scales (1 not at all, 5 entirely).

Indications for ABPM

Table 4 outlines physician assessments of the importance of the different indications for ABMP, using 5 point Likert scales (1 not at all, 5 entirely). They recognized ABMP as being most valuable in cases of patients with suspected white-coat hypertension (4.79, SD 0.49).

DISCUSSION

Main findings

Patients found ABPM an acceptable method of blood pressure control. They believed ABMP helped to reach better blood pressure control and found it advantageous to undergo ABPM in general practice rather than at the secondary level of care. Most patients would undergo repeat ABPM if necessary.

General practitioners strongly believed that ABPM was acceptable for patients, improved patient and physician interest in blood pressure control, improved patient compliance with treatment and reduced the prescription of antihypertensive drugs. They recognized ABPM as being most valuable in patients with suspected white-coat hypertension.

Most patients were satisfied with the information they had been given about ABPM, but there was room for improvement.

Comparison to the existing literature

There are many studies showing that physicians and patients are accepting of and have positive attitudes towards home blood pressure measurements (15–20), but there is a lack of data about ABPM in general practice. The only study we found was from United States, published in 2003 (12). The patients in our study were on average slightly older than the patients in the survey from United States, probably because of different inclusion criteria (age, indication for ABPM). There were no important differences in the proportion of male and female between these two studies.

Table 3. *Physicians' attitudes to ABPM.*

Attitude	Mean value (SD), N=38
ABPM gives valuable information about blood pressure control.	4.98 (0.15)
Patients find ABPM an acceptable method of blood pressure control .	4.61 (0.61)
ABPM in general practice improves physicians interest in better blood pressure control of their patients.	4.37 (0.92)
ABPM in general practice improves patient interest in better blood pressure control .	4.26 (0.69)
With ABPM we can improve blood pressure control in selected patients .	4.67 (0.56)
With ABPM we can reduce prescribing of antihypertensive drugs.	3.95 (1.11)
ABPM is an acceptable method of blood pressure measurement in general practice.	4.63 (0.66)

Table 4. *The importance of possible clinical indications for ABPM*

Clinical indications	Mean value (SD)
Suspected white-coat hypertension	4.79 (0.49)
Guide to antihypertensive drug treatment	4.60 (0.53)
Resistant hypertension	4.42 (0.75)
Evaluation of hypotension	4.04 (1.12)

In general, patients were satisfied with the instructions they were given before the procedure, but almost half of the patients thought that more information would be welcome. In the American study they found that only 7% of patients did not feel that their physician had clearly explained the benefits of undergoing the testing. In our study we looked at satisfaction with the explanation of the procedure, which was given by nurses. We should improve our educational strategies, with general practitioners better explaining the benefits of testing and addressing patient expectations (21) and practice nurse improving their explanation of ABPM.

Patients in general did not find ABPM uncomfortable. They found that the procedure disturbed night sleep more than daily life. In spite of some minor inconvenience, most of the patients would accept re-monitoring if necessary. In the American study 20% of patients voiced dissatisfaction with the comfort of ABPM and another 28% of patients responded neutrally to the statement. In our study ABPM was likewise well tolerated by patients, with no patient failing to wear the entire testing period and with the most frequent complaint being technical problems with the device (low battery, disconnection of the wire, broken plastic connector).

Patients strongly believed that after the ABPM their blood pressure would be better controlled. The American study found that 90% of patients thought that the investigation would provide information that would help their physician make treatment decisions.

Patients found the option of performing ABPM in general practice to be an important advantage. The procedure requires two visits to the office in 24 hours and the distance to the office may play an importation role in patient acceptance. People in Slovenia usually choose a general practitioner in the community in which they live. Specialist care, on the other hand, is organized in regional hospitals, which are usually not so close to the patient's home.

The physicians strongly believed that ABPM gave valuable information about blood pressure control and that the method was acceptable for patients, improved blood pressure control and was appropriate for general practice. They were less convinced that ABPM affected patient and physician interest in better blood pressure control. Of all the potential benefits, physicians were the least familiar with the idea that ABPM reduced prescribing of antihypertensive drugs. The positive attitudes of the general practitioners to ABPM could also be influenced by the recommendations of evidence-based guidelines (22).

The general practitioners correctly assessed that suspected white-coat hypertension is the most important indication for ABPM (23). Our results suggest that we can assume that general practitioners have enough knowledge and experience to use ABPM correctly.

Strength and limitations of the study

Our study is the first study in Europe about the attitudes of general practitioners and their patients to ABPM in general practice. We took a sample of patients who underwent ABPM in general practice and we used our own questionnaires based on a literature review and our own experience, which was in turn based on a pilot study and took into account the comments of physicians performing the ABPM in their general practices.

Our study must be interpreted within the context of several important limitations. We included a select group of patients with indications for ABPM. The study included a sample of primary care patients with uncontrolled arterial hypertension treated with at least two different antihypertensive drug classes. However, the primary indication was a possible presence of the white coat hypertension, so their views may not be generalizable to all patients with arterial hypertension with indications for ABPM.

There were no reports of patients refusing to participate in the research. It is known than physicians' approaches can often influence patients' behavior. We did not suggest language for the physicians to use when explaining the rationale for ordering ABPM.

We approached all the general practitioners performing ABPM in their practices, thus avoiding any sampling bias. Two-thirds of the physicians responded. We cannot compare responders with non-responders for their individual differences, but in a previous study we did not find differences in demographic charac-

teristics (sex, age) or level of professional education between responders and non-responders (25). It is possible that the physicians with more positive attitudes to ABPM in general practice were more likely to participate than the physicians with less positive attitudes, which could have influenced our results.
In spite of these limitations, our survey provides useful information regarding patients' and physicians' acceptance of and attitudes to ABPM in general practice in Slovenia and our date is probably valid for other countries in Europe.

Conclusions

ABPM in general practice is an acceptable method of blood pressure monitoring for patients and general practitioners. However, out patients wanted to have more information about the procedure, and this has to be addressed in the future.

Where there are clinical indications for offering ABPM, physicians should not be concerned that the test is very uncomfortable or otherwise unacceptable for the patient. Patients believed that after the ABPM their blood pressure would be better controlled and considered the possibility of performing ABPM in general practice to be a better option that undergoing the test at the secondary level of care.

ACKNOWLEDGEMENTS

We would like to thank all the participating patients and physicians. The study was supported by Slovenian Society Of Family Physicians.

REFERENCES

1. O'Brien E, Asmar R, Beilin L, Imai Y, Mallion JM, Mancia G, et al. European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurements. J Hypertens 2003; 21: 821–48.
2. Clement DL, De Buyzere ML, De Bacquer DA, de Leeuw PW, Duprez DA, Fagard RH, et al. Prognostic value of ambulatory blood pressure recordings in patients with treated hypertension. New Engl J Med 2003; 348: 2407–15.
3. Sega R, Facchetti R, Bombelli M, Cesana G, Corrao G, Grassi G, et al. Prognostic value of ambulatory and home blood pressure compared with office blood pressure in the general population: follow-up results from the PAMELA study. Circulation 2005; 111: 1777–83.
4. Dolan E, Stanton A, Thijs L, Hinedi K, Atkins N, McClory S, et al. Superiority of ambulatory over clinic blood pressure measurement in predicting mortality. Hypertension 2005; 46:156–61.
5. Fagard RH, Van Den Broeke C, De Cort P Prognostic significance of blood pressure measured in the office, at home and during ambulatory monitoring in older patients in general practice. J Hum Hypertens 2005; 19:801–7.
6. Hansen TW, Jeppesen J, Rasmussen S, Ibsen H, Torp-Pedersen C Ambulatory blood pressure and mortality. A population-based study. Hypertension 2005; 45:499–504.
7. Kikuya M, Ohkubo T, Asayama K, Metoki H, Obara T, Saito S, et al. Ambulatory blood pressure and 10-year risk of cardiovascular and noncardiovascular mortality. The Ohasama Study. Hypertension 2005; 45: 240–45.
8. Staessen JA, Bytter G, Buntinx F, Celis H, O'Brien E, Fagard R, et al. Antihypertensive treatment based on conventional or ambulatory blood pressure measurement. A randomized controlled trial. JAMA 1997; 278: 1065–72.
9. Lorgelly P, Siatis I, Brooks A, Slinn B, Millar-Craig MW, Donelly R, et al. Is ambulatory blood pressure monitoring cost-effective in the routine surveillance of treated hypertensive patients in primary care. Br J Gen Pract 2003; 53: 794–96.

10. The task force for the management of arterial hypertension of the European Society Of Hypertension (ESH) and of the European Society Of Cardiology (ESC) 2007 Guidelines for the management of arterial hypertension. J Hypertens 2007; 25:1105–87.
11. Accetto R, Brguljan Hitij J, Dobovišek J, Dolenc P, Salobir B Slovenske smernice za zdravlejnje arterijske hipertenzije 2007 (Slovenian guidelines on arterial hypertension). Zdrav Vestn 2008; 77: 349–63.
12. Ernst ME, Bergus GR Favorable patient acceptance of ambulatory blood pressure monitoring in a primary care setting in the United State: a cross sectional survey. BMC Fam Pract 2003; 4: 15. Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC270030/?tool=pubmed www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=14533981. Accessed 30.11.2008.
13. Petek Šter M, Kersnik J Vpliv 24-urnega neinvazivnega merjenja krvnega tlaka na obravnavo bolnikov z arterijsko hipertenzijo v družinski medicini (Impact of 24-hours non-invasive blood pressure monitoring on hypertension management in general practice). Zdrav Vestn 2009; 78: 295–301.
14. Petek Šter M 24-urno neinvazivno merjenje krvnega tlaka v ambulanti zdravnika družinske medicine (ABPM in general practitioners office). In: PETEK, Davorina (ur.), KOPČAVAR GUČEK, Nena (ur.). *Kakovostna obravnava bolnika v družinski medicini : [nevrologija, interna medicina, psihiatrija, delavnice] : zbornik predavanj : 34. srečanje delovnih skupin, Ljubljana, 23.-24. 5. 2008,* (Družinska medicina, Supplement, 2008, 6, 2). Ljubljana: Združenje zdravnikov družinske medicine: Zavod Za Razvoj Družinske Medicine 2008; 6 (suppl. 2):11–6.
15. Halme L, Vesalainen R, Kaaja M, Kantola I. Self-monitoring of blood pressure promotes achievements of blood pressure target in primary health care. Am J Hypertens 2005; 18: 1415–20.
16. Mc Manus RJ, Mant J, Roalfe A, Oakes RA, Bryan S, Pattison HM, et al. Targets and self monitoring in hypertension: randomized controlled trial and cost effectiveness analysis. BMJ 2005; 331: 493–9.
17. Aylett M, Marples G, Jones K. Home blood pressure monitoring: its effect on the management of hypertension in general practice. Br J Gen Pract 1999; 49: 725–8.
18. Cheng C, Studdiford JS, Diamond JJ, Chambers CV. Primary care physician beliefs regarding usefulness of self-monitoring of blood pressure. Blood Press Monit 2003; 8: 249–54.
19. Soghikian K, Casper SM, Fireman BH, Hunkeler EM, Hurley LB, Tekawa IS, et al. Home blood pressure monitoring. Effect on use of medical service and medical care cost. Med Care 1992; 30: 855–65.
20. Funahashi J, Okhubo T, Fukunaga H, Kikuya M, Takada N, Asayama K, et al. The economic impact of the introduction of home blood pressure measurements in the diagnosis and treatment of hypertension. Blood Press Monit 2006; 11: 257–67.
21. Zebiene E, Svab I, Sapoka V, Kairys J, Dotsenko M, Radic S, et al. Agreement in patient-physician communication in primary care: A study from Central and Eastern Europe. Patient Educ Couns 2008; 73: 246-50.
22. Rogulj ZM, Baloevic E, Dogas Z, Kardum G, Hren D, Marusic A, et al. Family medicine practice and research: survey on physicians' attitudes towards scientific research in a post-communist transition country. Wien Klin Wochenschr 2007; 119: 164–9.
23. O'Brien E, Coats A, Owens P, Patrie J, Littler WA, de Swiet M, et al. Use and interpretation of ambulatory blood pressure monitoring: recommendations of the British hypertensive Society. BMJ 2000; 320: 1128–34.
24. Lindbaek M, Sandvik E, Liodden K, Mjell J, Ravnsborg-Gjersten K. Predictors for the white coat effect in general practice patients with suspected and treated hypertension. Br J Gen Pract 2003; 53: 790–3.
25. Petek Šter M, Kersnik J. Knowledge and acceptance of hypertension guidelines in clinical practice: experience from Slovenia. Wien Klin Wochenschr 2005; 117: 534–40.