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EC CARDIOLOGY
Research Article

Knowledge of General Practitioners on the Recommendations for the Management of Essential HTA in Adults in Antananarivo

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Received: January 29, 2023; **Published:** February 23, 2023

Abstract

Introduction and Aim: Hypertension is a major public health concern worldwide. General practitioners provide a large proportion of the primary care management of hypertension. The aim of this study was to assess physicians' knowledge of the recommendations for the management of essential hypertension.

Methods: The study was carried out in the form of a declarative cross-sectional survey of general practitioners in the urban commune of Antananarivo over a 3-month period from March 2016 to May 2016.

Results: The rate of participation of doctors in a post-graduate course or congress on hypertension was 44% in the last 3 years. The definition of hypertension was not in line with the recommendations in 58%. Initial systematic clinical and paraclinical check-ups were performed by 44.5% of the doctors. Treatment was lifelong for 67% of participants. Physicians' adherence to the recommendations depended on the year of experience, the place of practice and, above all, on attendance of continuing education courses.

Conclusion: The recommendations on essential hypertension in adults were fairly well known and poorly followed. There is a need for greater awareness among physicians of the recommendations designed to reflect clinical reality.

Keywords: *Essential Hypertension; General Practitioner; State of Knowledge; Recommendation*

Introduction

High blood pressure (HBP) is a public health problem worldwide. It is responsible for approximately 9.4 million deaths per year [1]. In Africa, hypertension affects about 30% of adults. In Madagascar, the prevalence of hypertension was estimated at 19.10% in 2000; 24.3% in 2005 according to the STEPS study and 28.05% in 2009 [2,3]. The quality of management of hypertension is still unsatisfactory in many countries. The rate of poor control of hypertension is increasing despite the policy of rationalising management through expert recommendations based on randomised controlled trials [1]. In France, only 15.97% are treated and controlled correctly [1]. The management of hypertension is very challenging in Africa due to the low socio-economic status. More than 90% of hypertensive patients are managed by general practitioners [4]. The prevalence of hypertension in urban areas (40%) is higher than in rural areas, which led us to conduct our work in the urban commune of Antananarivo [5].

Objective of the Study

The main objective of the study is to evaluate the knowledge of physicians on the recommendations for the management of essential hypertension in adults.

Methodology

Our study was based on a survey of general practitioners in the city of Antananarivo (Madagascar) practising in public sectors (Basic Health Centre level II and University Hospital Centre) or in private sectors (dispensary, medical practice, clinic). We conducted a prospective cross-sectional descriptive and analytical study. It evaluated the professional practices of doctors in comparison with the recommendations issued by international learned societies on hypertension. The survey lasted 3 months from March to May 2016. The list of doctors involved was provided by the National Order of Physicians of Antananarivo. On the basis of 1000 general practitioners installed in the 6 districts of the urban commune, it was decided to survey 20% of this population, or 200 practitioners. This sampling was made up according to the principle of drawing lots in a cluster in two stages according to the district, then according to the district's neighbourhood. Thus, the survey was carried out among the 200 practitioners established in the 1st, 2nd and 3rd arrondissements, including 6, 7 and 6 districts respectively (in general 10 doctors per district). The expected answers had to concern essential hypertension in adults, excluding severe hypertension, infantile hypertension, hypertensive emergencies and secondary hypertension. All physicians who accepted our survey form were included in the study. We excluded those who returned an empty questionnaire, or irrelevant answers as mentioned above.

We studied the parameters:

- Socio-demographic parameters such as the age of the doctors, their year of experience and their place of (public or private establishment).
- Professional parameters such as doctors' knowledge of hypertension (definition, clinical and paraclinical diagnostic approach, treatment, therapeutic objective and follow-up of hypertensive patients) and their updating by participating in a postgraduate course or a congress on hypertension in the last 3 years.

We used Epi info 3.5.4 software in the registration and analysis of the databases. The comparison of the groups was performed using chi^2 tests with a significance level of $p < 0.05$.

Results

We distributed 221 investigations sheets, of which 21 sheets were returned without answers and were excluded. Thus our survey is based on the views of 200 general physicians out of 1000, or 20%.

The average age of the doctors was 47.8 years. Those with more than 10 years experience represented 84.5% of them. The majority, 62.5%, practised in private centres. The rate of participation of general practitioners in postgraduate education or a congress on hypertension in the last 3 years was 44.0%. Regarding the diagnosis of essential hypertension, 42% of the doctors provided the exact definition. For reliability reasons, according to 47% of the physicians, only fifty-five (27.5%) of them used the electronic arm device. Confirmation of the diagnosis before treatment was mentioned by 92% of the doctors. This confirmation was done by close consultations (75%), self measurement of blood pressure (3.5%). Nearly half of the physicians (44.5%) systematically requested paraclinical tests. Only 11.5% of practitioners were able to state that the blood pressure goal for adults on treatment should be below 140/90 mm Hg. The recommended first-line therapeutic class was used by 84.5% of our practitioners.

For essential hypertension, continuous treatment was recommended by 67% of the physicians with periodic monitoring of 1 to 3 months (83%).

In the analysis of the results, a significant difference in the knowledge of the exact definition of essential hypertension (p = 0.0001), the blood pressure target (p = 0.0005) and their participation in continuing education on hypertension (p = 0.0010) was demonstrated between young doctors with less than 10 years of experience and the others (Table 1). The young doctors were more competent and active. This significant difference was detected between doctors working in private and public facilities. The difference concerned the definition of essential hypertension (p = 0.0444), the use of the electronic arm device (p = 0.0001), the prescription of systematic clinical and paraclinical check-ups (p = 0.0001), definition of target blood pressure (p = 0.0068), prescribing medication according to recommendations (p = 0.0258), continuous monitoring (p = 0.0048), lifetime treatment (p = 0.0034) and participation in a post-graduate education/Congress (p = 0.0001) (Table 2). Physicians in private facilities were more up-to-date compared to other physicians.

Questionnaires	Years of experience				p
	[1-10]		[10-30]		
	n	(% Yes)	n	(% No)	
Definition of essential HBP	10	32,3	6	3,6	0,0001
Using an electronic upper arm monitor	10	32,3	45	26,6	NS
Confirmation of HBP	30	96,8	154	91,1	NS
Systematic paraclinical assessment	15	48,4	73	43,2	NS
Target blood pressure	10	32,3	13	7,7	0,0005
Medication prescribed as recommended	3	9,7	28	83,4	NS
Continuous control	27	87,1	139	82,2	NS
Life-time treatment	22	71	112	66,3	NS
Participation in a postgraduate course/congress	22	71	66	39,1	0,0010

Table 1: *Distribution of correct management by year of experience of physicians.*

NS: Not Significant; n: Size.

Questionnaires		Place of practice			p
		Private		Public	
	n	(% Yes)	n	(% No)	
Definition of essential HBP	13	10,40	2	2,70	0,0444
Using an electronic upper arm monitor	49	39,20	6	8	0,0001
Confirmation of HBP	117	93,6	67	89,3	NS
Systematic paraclinical assessment	70	56	19	25,30	0,0001
Target blood pressure	20	16	3	4	0,0068
Medication prescribed as recommended	111	88,80	58	77,30	0,0258
Continuous control	111	88,80	55	73,30	0,0048
Life-time treatment	93	74,40	41	54,70	0,0034
Participation in a postgraduate course/Congress	72	57,60	16	21,30	0,0001

Table 2: *Distribution of correct responses by location of practice.*

Participation in a UPR in the last three years allowed some doctors to differentiate themselves from others in their definition of essential hypertension (p = 0.0001), in their belief in the reliability of the electronic arm device (p = 0.0001), in the need for paraclinical check-ups (p = 0.0001), and in the need for life-long treatment (p = 0.0001) (Table 3).

Questionnaires	Participation in a postgraduate education/conference				p
	Yes		No		
	n	(% Yes)	n	(% No)	
Definition of essential HBP	14	15,90	1	0,90	0,0001
Using an electronic upper arm monitor	36	40,90	19	17	0,0001
Confirmation of HBP	82	93,2	102	91,1	NS
Systematic paraclinical assessment	55	62,50	34	30,40	0,0001
Target blood pressure	15	17	8	7,10	NS
Medication prescribed as recommended	80	90,90	89	79,50	NS
Continuous control	79	89,80	87	77,70	NS
Life-time treatment	71	80,70	63	56,30	0,0001

Table 3: *Distribution of correct responses according to participation in a postgraduate education/conference.*

Discussion

The management of essential hypertension is a challenge in developing countries like Madagascar. The socio-economic problems of patients considerably limit the provision of care according to recommended standards. Our study showed a higher level of competence in the management of hypertension among young doctors (less than 10 years experience), doctors practising in private institutions and doctors who had participated in UPRs than among other doctors.

A blood pressure value of 135/85 mmHg defines the threshold for hypertension in adults. More than half of the doctors in our study (58%) were unable to specify this threshold. Kone's study, conducted in Mali in 2010, found fewer cases of inaccurate definition of hypertension (41%) [6]. Younger doctors provided more of the correct definition of hypertension than more experienced doctors. The difference was statistically significant (p = 0.0001). This could be explained by the renovation of teaching in medical schools in Madagascar in recent years. The change, both in the teaching system and style, coincided with the widespread dissemination of expert recommendations on hypertension in developed countries [7]. This precise definition of HBP was more prevalent in the responses of physicians practising in the private sector than in those practising in the public sector (p= 0.04). The high rate of participation of the private sector in congresses or post-university teaching could explain this difference.

The use of an electronic arm device is strongly recommended by the experts to get an accurate blood pressure reading. This technique was adopted by only 27.5% of our physicians. The electronic device is increasingly used in developed countries. A study in Canada in 2017 by Kaczorowski JP., *et al*. had shown a rate of use of automated BP measurement of 42.9% in clinic [8]. In our study, physicians who had received training in the management of hypertension (postgraduate courses or congress) were convinced to use the electronic arm device (p = 0.0001). The use of the electronic arm device was higher in the private sector than in the public sector (p = 0.0001). In Madagascar, the public sector did not have enough funding to equip the centre with medical equipment. The absence of electronic equipment, especially in the public sector, was found in 33% of cases. The main reason for the reluctance of doctors to use the electronic arm device was the doubt about its reliability mentioned in 47% of cases.

It is recommended to confirm hypertension before starting medication, except for severe hypertension. The recommendations are to measure blood pressure on an outpatient basis by self-measurement or by blood pressure monitoring (MAPA). Otherwise, three to five close consultations can be adopted [9]. A large majority of doctors in our study (91%) confirmed hypertension before starting treatment. Out-of-office measurement was mentioned by only 9.5% of the physicians. In Canada in 2017, the most common method used to diagnose hypertension was ABPM (31.1%), followed by home BP measurement (22.4%) and manual clinic BP measurement (21.4%). In the study by Hodgkinson J., *et al*. conventional and self measurement of blood pressure had low sensitivity and specificity compared to ambulatory blood pressure measurement [10]. The latter had a high prediction of cardiovascular morbidity. In our context, the cost of performing MAPA is a barrier to physicians' adherence to the recommendations.

Initial check-ups are used to assess target organ damage, detect associated risk factors and search for underlying diseases. In our study, about half of the physicians (49.5%) reported prescribing initial paraclinical check-ups. According to Kone's study, cardiovascular risk factors were known by 67.66% of general practitioners [6]. We found that doctors practising in the private sector prescribed more paraclinical check-ups than doctors in the public sector ($p = 0.0001$). The financial problem of patients as an obstacle to prescribing certain tests. In the private sector, most patients had financial means or a health cover.

Pharmacological treatment contributes to the reduction of blood pressure and the prevention of cardiovascular events. The 5 classes of antihypertensive drugs (Angiotensin-Converting Enzyme inhibitors, angiotensin receptor blockers, diuretics, calcium channel blockers, beta-blockers) can be offered as first-line treatment according to expert recommendations. The majority (84.5%) of the participating physicians in our study prescribed one of the 5 recommended pharmacological classes. The lower cost, efficacy and availability of the drugs would have determined their choice.

The permanent nature of essential hypertension justifies life-long treatment. More than half (67%) of our physicians stated that there were no criteria for stopping treatment of essential hypertension, especially in the private sector ($p = 0.003$). A proportion of 78.19% of doctors chose life-long treatment in the Kone study [6].

The target blood pressure value to be achieved is generally 135/85 mm Hg. The exact value of the blood pressure target was mentioned by 11.5% of our participants. According to Kone's study, the majority of doctors (60%) had chosen a value of less than 130/80 mm Hg in cases of diabetes and renal failure [6]. In our study, younger doctors were more familiar with the target blood pressure value compared to experienced doctors ($p = 0.0005$). This difference also existed between private and public physicians ($p = 0.006$). The rate of participation in a post-graduate courses on hypertension by young doctors and private practitioners could explain these differences. According to the study by Chen., *et al*. in China in 2013, younger, less experienced doctors and those practising in community clinics (private sector) provided greater accuracy in their responses compared to the others [11].

The follow-up interval is 3 - 6 months in case of controlled hypertension. If not, the consultation should be increasingly frequent. Periodic monitoring was adopted by 83% of the doctors in our study. However, most patients only consulted their doctor if they had symptoms. Patients' knowledge of hypertension was insufficient [12]. The physician should strengthen patient education. The participation rate of general practitioners in congresses or post-graduate courses on hypertension was 44% in our study. Chen., *et al*. had reported a participation rate of 92.5% of physicians in training on blood pressure in China in 2013 [11].

In our study, the rate of participation in a post-graduate education or congress was higher in private than in public sectors ($p = 0.0001$). Lack of information was the main reason given by physicians in the public sector. Most doctors in the public sector and those with more experience ($p = 0.0001$) did not have time to attend continuing education.

Conclusion

Hypertension is the first reason for consultation in general medicine. The management of essential hypertension in adults by general practitioners in Antananarivo was not consistent with the recommendations of experts. The adherence of doctors to the recommendations depends on the year of experience, the place of practice and especially on the attendance of continuing education courses. The training of general practitioners should be strengthened. Recommendations should be less debatable and easy to apply. The health system should meet the requirements of the recommendations.

Conflicts of Interest

The authors declare no conflicts of interest.

Authors' Contributions

All authors have contributed to this work and have read and approved the final version of the manuscript.

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Volume 10 Issue 3 March 2023