

Roles of Family Doctors in Managing Hypertension

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Abstract: In this review we discuss the role of family doctors in prevention, diagnosis and treatment of hypertension in adults. We emphasize the diagnostic methods and management strategies as lifestyle changes, drugs and self-management. This descriptive review summarizes current efficiency on primary care setting in prevention, diagnosis and treatment of hypertension in adults, treatment outcome, several studies of concerning management of hypertension in primary care were identified through electronic searches of Medline, Cinahl, Embase, Psyclit, until JANUARY 2018. Family doctors and their groups have an essential duty to play in the identification and management of hypertension. The prevention and management of hypertension are major public health difficulties. If the increase in BP with age could be prevented or diminished, much of hypertension-related cardiovascular, renal disease and stroke may be avoided. Numerous aspects could account for FPs' absence of adherence to exercise guidelines for hypertension, consisting of understanding deficits, overestimation of compliance with standards, disagreement with standards, or reluctance making therapeutic modifications. Lifestyle changes, as weight loss and diet changes, physical activity are one of the most crucial management strategies.

Keywords: family doctors, diagnosis, hypertension.

1. INTRODUCTION

Hypertension is the number one threat factor for mortality worldwide and an important danger aspect for heart disease and stroke [1]. Hypertension is typically diagnosed and managed in the outpatient setting and is one of the most common needs to visit a family doctor (FP) [2]. With almost a quarter of the grown-up populace and almost half of individuals aged 50 years and older having hypertension, the burden of this illness is undeniably high [3]. As therapy of hypertension is connected with a 20% to 25% decrease in cardiovascular occasions [4] getting control of this normally asymptomatic disease may be among one of the most essential preventive measures that FPs could take [2], [4].

Regardless of indisputable scientific proof that decreasing blood pressure (BP) is substantially reliable in reducing heart disease events, as mentioned in all significant standards on hypertension management, [5], [6] arterial hypertension is known to be inadequately detected and dealt with as a whole method [7]. In industrialized countries, the percentage of hypertensive patients with well-controlled BP is usually much less compared to 30%. [8], [9]. Suitable antihypertensive therapy is hardly ever implemented even in risky patients, in which BP reductions could cause quite huge life-saving results [10].

This unsatisfactory BP control amongst cured hypertensive topics has several reasons, amongst which medical professional's habits and patient's compliance have gotten specific attention [11]. Although FPs are often criticized for not adhering to clinical method standards very closely and for falling short to satisfy therapy targets for many conditions, there is strong proof that they have made great strides in evaluating for and medical diagnosis and treatment of hypertension [2]. However, FPs adherence to evidence-based medication and to guidelines recommendations on effective BP control has never ever been fully explored.

OBJECTIVE:

In this review we discuss the role of family doctors in prevention, diagnosis and treatment of hypertension in adults. We emphasize the diagnostic methods and management strategies as lifestyle changes, drugs and self-management.

2. METHODOLOGY

This descriptive review summarizes current efficiency on primary care setting in prevention, diagnosis and treatment of hypertension in adults, treatment outcome, several studies of concerning management of hypertension in primary care were identified through electronic searches of Medline, Cinahl, Embase, Psychlit, until JANUARY 2018. The search also included checking the reference lists of retrieved papers. Restriction to only human subject studies published in English language.

3. DISCUSSION

• Diagnosis:

The medical diagnosis of hypertension makes use of both clinic blood pressure monitoring (CBPM) and ABPM analyses (Box 1). If blood pressure gauged in the clinic is 140/90 mmHg or higher, a second measurement ought to be taken during the consultation. If the second measurement is significantly various from the first, take a 3rd measurement [12]. The reduced of the last two measurements should be recorded as the facility blood pressure. Everyone with a center blood pressure of 140/90 mmHg or higher must have ABPM to make a diagnosis of hypertension.

Box 1. Hypertension stages [12].

Stage 1 hypertension

Clinic blood pressure $\geq 140/90$ mmHg and subsequent ambulatory blood pressure monitoring (ABPM) or home blood pressure monitoring (HBPM) average blood pressure $\geq 135/85$ mmHg

Stage 2 hypertension

Clinic blood pressure $\geq 160/100$ mmHg and subsequent ABPM or HBPM average blood pressure $\geq 150/95$ mmHg

Severe hypertension

Clinic systolic blood pressure ≥ 180 mmHg, or clinic diastolic blood pressure ≥ 110 mmHg

ABPM was recognized as one of the most accurate and cost-efficient ways of verifying the medical diagnosis of hypertension. The advised procedure for ABPM dimensions is at least two times hourly during the person's regular waking hours (for instance, between 8am and 10pm). The average of a minimum of 14 dimensions taken control of that duration ought to be made use of to confirm the medical diagnosis. If ABPM is improper (for example, in people with atrial fibrillation) or otherwise endured, after that HBPM is an ideal option. Blood pressure should be determined utilizing the average of 2 readings in the early morning and 2 at night, over 4-7 days. The readings on the first day need to be discarded [12].

If blood pressure is ≥ 180 mmHg and/or 110 mmHg on CBPM, therapy must be taken into consideration immediately, prior to the results of the ABPM are offered.

CBPM ought to be used to keep an eye on the action to treatment in all patients other than those who have a disparity of $\geq 20/10$ mmHg between facility and HBPM/ABPM readings, in these patients HBPM or ABPM need to be used.

Thresholds and targets:

The guideline describes the seriousness of hypertension in phases (Box 1). Patients with stage 1 hypertension, who are more youthful than 80 years and that have target body organ damage or a 10-year cardiovascular risk of $\geq 20\%$, or established cardiovascular disease (CVD) or kidney illness, should be offered medicine, as must all patients with phase 2 hypertension. The target for therapy is a blood pressure $<140/90$ mmHg, as the evidence was not found to be sufficient to recommend a lower target. Stage 1 patients without target organ damage or CVD risk $><140/90$ mmHg, as the evidence was not located to be adequate to advise a reduced target. Stage 1 patients without target organ damages or CVD risk $> 20\%$ are treated with way of living guidance just, not medicine. Those identified with hypertension aged < 40 years need to be thought about for professional referral. This is because 10-year cardio danger assessments could ignore the lifetime danger of cardio events in these people. Those aged > 80 years with phase 2 hypertension should be dealt with, yet their blood pressure target ought to be $\leq 150/90$ mmHg or much less. The proof for treating those aged > 80 years is based on the results of the Hypertension in the Very Elderly Trial (HYVET) [13], that treated to a target of 150/90 mmHg.

It is especially essential to gauge standing blood pressure in individuals with symptoms that are suggestive of postural hypotension. The blood pressure must be determined with the individual resting or existing, and once again with the person standing. The person must be representing at least a min prior to the standing measurement is taken. If the systolic blood pressure decreases by 20 mmHg or even more, better investigation may be needed and the standing high blood pressure ought to be utilized in future.

- **Blood pressure measurement:**

Several techniques currently exist to measure BP. Manual measurement executed by a clinician using a stethoscope and a mercury or aneroid sphygmomanometer was initially introduced in 1896 by Riva-Rocci. Apart from the introduction of Velcro for securing the cuff, this method has changed little over the past 100 years. A number of essential researches in the 1940s and 1950s showed a strong correlation in between elevated manual BP analyses, taken with meticulously carried out standardized strategies, and enhanced cardiovascular danger. However, more than 30 researches published over the past 3 years have continuously and consistently showed that these standard techniques are seldom complied with in routine clinical practice and, consequently, most auscultatory measurements performed in professional method are imprecise [14]. A lot of regularly these hand-operated readings in the office are higher, but this is not constantly the case. For these factors CHEP is advising that electronic BP measurement is the favored approach for in-office BP analysis.

Electronic BP dimension making use of the oscillometric method was presented in the 1960s and has become ubiquitous in medical method. Several organizations have produced recognition protocols to contrast these gadgets to standard manual measurements to verify their accuracy [15], [16]. Verified gadgets are currently readily available for medical usage in offices and for 24-hour ambulatory monitoring, as well as for personal usage by patients in their residences. These tools remove most of the errors that happen when nonstandardized auscultatory measurements are done (fast depreciation, rounding the outcomes, etc). The essential advantage of electronic devices is that the dimensions are reproducible and exact when confirmed.

A particular sort of OBPM called automated office BP (AOBP) dimension uses electronic oscillometric devices that are preprogrammed to take a collection of readings automatically (3 to 6 readings over 4 to 7 mins) and determine an average. When done appropriately, the patient is left alone in the room. This technique has been revealed to significantly decrease the white-coat impact ($P < 0.001$) [17] and associate extra very closely with the criterion standard of 24-hour ambulatory BP daytime standard, which then associates well with the risk of negative cardiovascular outcomes [17], [18].

The crucial distinctions in between these 2 approaches of office BP dimension is whether the health and wellness care specialist remains in the space with the patient during the readings (OBPM) or otherwise (AOBP), and whether several analyses are instantly executed and averaged (AOBP) or not (OBPM). The top limitation for the AOBP standard is 135 mm Hg systolic BP and 85 mm Hg diastolic BP; the upper limit for OBPM is 140 mm Hg systolic BP and 90 mm Hg diastolic BP.

- **Role of family physicians:**

Family doctor should have much of the credit for the high rates of treatment and control of hypertension that already exist. Improvements in diagnostic precision are critical to attaining the objective of further maximizing hypertension management, which can not be accomplished without buy-in from primary care companies. The availability of ABPM has been restricted owing to set you back and lack of reimbursement in numerous provinces.

In order to attain the objective of better diagnosis and much better control of hypertension, family members physicians need to be urged to purchase both AOBP and ABPM devices and to utilize them consistently and appropriately in medical technique. Some provincial health insurance plan already provide compensation for ABPM, and initiatives are under means in other provinces to develop new billing codes. A "best-practice" table has been created by CHEP to aid providers with doing and translating ABPM (Box 2) [19] In numerous techniques the functions of measuring BP, enlightening patients concerning HBPM, and providing ABPM are carried out by nurses and pharmacologists; this is one more factor for supporting the relocate to a team-based medical residence design for household practice.

Box 2. Standardized protocol for ABPM[19].

The Canadian Hypertension Education Program makes the following recommendations for ABPM for 2015:

The properly sized cuff ought to be related to the nondominant arm unless the SBP difference between arms is > 10 mm Hg, where instance the arm with the highest worth acquired ought to be utilized

The tool needs to be readied to record for a duration of at the very least 24 h, with the dimension regularity evaluated 20- to 30-min periods throughout the day and 30- to 60-min intervals at night

A patient-reported diary to define daytime (time awake), nighttime (time sleeping), tasks, symptoms, and drug management serves for research study interpretation

Daytime and nighttime ought to preferrably be specified making use of the patient's journal. Conversely, predefined thresholds can be used (eg, 8 AM to 10 PM for day and 10 PM and 8 AM for evening).

The ABPM report ought to include every one of the specific BP readings (both numerically and graphically), the portion of effective readings, the standards for each amount of time (daytime, nighttime, 24 h), and the "dipping" portion (the percentage the ordinary BP changed from daytime to nighttime).

Criteria for a successful ABPM study are as follows:

- at least 70% of the readings are successful and
- at least 20 daytime readings and 7 nighttime readings are successful

ABPM—ambulatory blood pressure measurement, BP—blood pressure, SBP—systolic blood pressure.

• **Treatments:**

One of the most difficult aspects of managing high blood pressure is achieving effective, tight blood pressure control. Full engagement with the patient on all aspects of their care is essential if targets are to be met. Lifestyle measures to reduce blood pressure are important and must not be overlooked [20]. The patient should be advised to:

- eat a healthy, low calorie diet, and control their weight
- avoid excess coffee intake and consumption of caffeine-rich products
- take less dietary salt or use a salt substitute
- undertake aerobic exercise—30 to 60 minutes exercise three to five times each week
- reduce alcohol intake—<21 units per week for men and <14 units per week for women
- consider relaxation therapies—stress management, meditation, cognitive therapies, muscle relaxation, and biofeedback.

The treatment algorithm has been changed, with a greater emphasis on using CCBs for those aged ≥ 55 years and patients of African or Caribbean descent.

First-line treatment is now ACEI, ARB, or CCB, with an option of diuretic if CCB is not tolerated or the person has oedema or heart failure, or is at high risk of heart failure. ACEI or ARB should be used for those aged <55 years.

The second step is now ACE/ARB with a CCB for most patients.

The therapy algorithm has been transformed, with a higher emphasis on using CCBs for those aged ≥ 55 years and patients of African or Caribbean descent.

First-line therapy is currently ACEI, ARB, or CCB, with an option of diuretic if CCB is not tolerated or the person has oedema or cardiac arrest, or goes to high risk of heart failing. ACEI or ARB ought to be used for those aged <55 years.

The second action is now ACE/ARB with a CCB for the majority of patients.

The third action stays a diuretic yet there is a choice for thiazide-like drugs. If diuretic treatment is to be initiated or altered, a thiazide-like diuretic, such as chlortalidone (12.5-25.0 mg daily) or indapamide (1.5 mg modified-release as

soon as everyday or 2.5 mg daily) must be given up preference to a conventional thiazide diuretic such as bendroflumethiazide or hydrochlorothiazide. There was a lack of evidence for thiazide diuretics at the doses frequently prescribed in present practice but the guideline is clear that people who are currently well controlled on a thiazide diuretic should advance the treatment they are taking [12].

The 4th action for those with resistant hypertension is now to think about utilizing the aldosterone villain spironolactone in a reduced dosage (25 mg) if the patient's potassium is below 4.5 mmol/l. For those where the potassium is more than 4.5 mmol/l, it could be better to make use of a higher dose of a thiazide-like diuretic [12].

There is very little evidence offered relating to fourth-line treatment alternatives, but what there is indicate spironolactone being the likely best choice for several patients. Spironolactone is certified for the treatment of hyperaldosteronism as opposed to hypertension, although patients with immune hypertension and low or low normal potassium are likely to have some aspect of aldosteronism. Care has to be taken with spironolactone if the patient comes to be dehydrated; therefore, it is a smart idea to recommend the patient to momentarily quit the medication if they develop diarrhoea and vomiting or if their liquid consumption is restricted.

Patient self-management:

The self-management of hypertension is a vital part of its therapy. Canadian Hypertension Education Program (CHEP) suggestions remain to emphasize the duty the patient can play in the management of their condition. For instance, house blood pressure surveillance has been significantly stressed over the years, with present 2006 referrals suggesting that all patients with hypertension display themselves. Not just does this outcome in more prognostically helpful blood pressure readings, however research studies have shown that patients that do monitor their very own blood pressure accomplish far better blood pressure control [21], [22]. In a similar way, adherence to way of living recommendations could also significantly boost blood pressure levels and lower various other cardiovascular danger aspects. The primary care medical professional is vital in both presenting and continually encouraging patient self-management. In a similar way, primary care teams or the health system itself could promote self-management with the provision of educational and inspirational programs, patient portals and interaction of various other neighborhood resources.

4. CONCLUSION

Family doctors and their groups have an essential duty to play in the identification and management of hypertension. The prevention and management of hypertension are major public health difficulties. If the increase in BP with age could be prevented or diminished, much of hypertension-related cardiovascular, renal disease and stroke may be avoided. Numerous aspects could account for FPs' absence of adherence to exercise guidelines for hypertension, consisting of understanding deficits, overestimation of compliance with standards, disagreement with standards, or reluctance making therapeutic modifications. Lifestyle changes, as weight lose and diet changes, physical activity are one of the most crucial management strategies.

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