Electronic Journal of University of Aden for Basic and Applied Sciences

EJUA-BA Vol. 6 No. 4 (2025)

https://doi.org/10.47372/ejua-ba.2025.4.478

ISSN: 2708-0684

RESEARCH ARTICLE

EFFECTIVENESS OF ANTIHYPERTENSIVE THERAPY ACCORDING TO WHO AND ACC/AHA GUIDELINES AMONG HYPERTENSIVE PATIENTS ATTENDING OUTPATIENT CLINICS IN ADEN, YEMEN

Noura A.[1], Alaa M.[1], Ahmed A.[1], Muneer A.[1], Shatha J.[1], Zaina A.[1], Salah F.[1], Mohammed A.[1], Emad A.[1], Mohammed H.[1], Manal E.[1], Khattab A.[1], Maram S.[1], Fatima A.[1], Malak T.[1], Ayat S.[1], Mohammed M.[1], Mohsen M.[1], Samira M.[1], Saba A.[1,*]

[1] *Dept. of Pharmacology, Faculty of Pharmacy, University of Aden, Yemen*

***Corresponding author: Saba Adel Mohammed; E-mail: sa.abdullah@pharm.adenuniv.com**

Received: 15 November 2025 / Accepted: 07 December 2025 / Published online: 31 December 2025

Abstract

Hypertension remains a major global health challenge and is the leading modifiable risk factor for cardiovascular morbidity and mortality worldwide. Despite significant advances in pharmacological treatment, lifestyle-related factors such as physical inactivity, obesity, excessive dietary sodium intake, and tobacco or alcohol use continue to play a major role in the increasing burden of hypertension. Regular physical activity, including structured exercise programs, has been shown to improve vascular function and promote better blood pressure control. However, the optimal role and dose–response relationship of resistance training in the management of hypertension are not yet fully defined. Improved understanding of these relationships is essential for developing effective non-pharmacological interventions that complement pharmacological therapies. An analytical cross-sectional study was conducted between April and May 2025 among hypertensive outpatients attending randomly selected clinics in Aden, Yemen. A total of 422 patients were recruited using simple random sampling from clinic registration lists. Eligible participants were adults aged 18 years or older who had been receiving antihypertensive therapy for at least one year. Pregnant women and patients with irregular medication adherence were excluded. Data were collected using a structured, pretested, and validated Arabic questionnaire adapted from prior studies. Statistical analysis was performed using SPSS version 25. Descriptive analysis and chi-square tests were used for categorical variables, and a P-value of less than 0.05 was considered statistically significant. A total of 422 hypertensive patients were included in the analysis. The median age was 57 years, and males constituted 53.8% of participants. The prevalence of overweight and obesity was high (35.8% and 32.9%, respectively). Cigarette smoking was reported by 25.2% of patients, while 40.1% reported qat chewing, and only 9.7% engaged in regular physical exercise. Diabetes mellitus (37.9%) and heart disease (27.7%) were the most common comorbidities, followed by dyslipidemia (23.5%) and chronic kidney disease (9.2%). Calcium channel blockers (34.1%) and diuretics (30.8%) were the most commonly prescribed antihypertensive drug classes, followed by angiotensin-converting enzyme inhibitors and angiotensin receptor blockers (each 24.4%). According to both WHO and ACC/AHA guidelines, no antihypertensive class demonstrated statistically significant superiority in achieving blood pressure control ($P > 0.05$). Blood pressure control among hypertensive outpatients in Aden, Yemen, remains suboptimal. Although calcium channel blockers and diuretics were the most frequently prescribed medications, no single antihypertensive drug class was superior in achieving optimal blood pressure control. Lifestyle-related risk factors, particularly smoking, physical inactivity, and excess body weight, were highly prevalent, and comorbid conditions such as diabetes and cardiovascular disease further compounded the disease burden. These findings underscore the importance of integrating comprehensive lifestyle modification programs, smoking cessation interventions, and patient education into routine hypertension management strategies to improve clinical outcomes.

Keywords: Hypertension; Hypertensive drugs; WHO guideline; ACC/AHA guideline.

Introduction:

Hypertension represents the most important risk factor for cardiovascular mortality worldwide and is considered one of the leading causes of death from cardiovascular diseases, affecting nearly one billion individuals globally [1]. Despite significant advances in pharmacological treatment, lifestyle factors such as physical inactivity, obesity, excessive dietary sodium intake, and tobacco or alcohol use continue to drive the increasing prevalence of hypertension [2]. Regular physical activity, including structured exercise programs, has been shown to improve vascular function and promote better blood pressure control; however, the optimal role and dose–response relationship of such interventions remain unclear [3]. Guideline recommendations for hypertension diagnosis and management differ internationally. The World Health Organization (WHO) and the American College of Cardiology/American Heart Association (ACC/AHA) guidelines show discrepancies in screening strategies, diagnostic thresholds, and treatment targets, highlighting the need to evaluate the real-world effectiveness of antihypertensive therapies according to both guidelines [4],[5]. This study generates important evidence regarding the most commonly prescribed antihypertensive medications and their relative effectiveness in lowering blood pressure when evaluated against the ACC and WHO treatment targets. Such findings will be highly relevant for clinicians, policymakers, and researchers seeking to improve hypertension management in Yemen. Assessment the effectiveness of commonly prescribed antihypertensive medications in this context is essential for developing effective strategies to improve blood pressure control and reduce cardiovascular risk.

Methodology

1- Study Design and Population:-

An analytical cross-sectional study was conducted between April and May 2025 among hypertensive outpatients attending randomly selected clinics in Aden, Yemen

2-Sample size and sampling technique

2025 in selected outpatient clinics in Aden Governorate, Yemen. The study population consisted of all hypertensive patients aged 18 years and older who attended the outpatient clinics during the data collection period. The sample size was estimated based on the target population size, assuming a 50% response rate, a margin of error of 5%, and a 95% confidence level, using the following formula:

Sample size = $Z^2 \times P\,(1 - P) \div d^2$

Based on this calculation, the required sample size was determined to be 385 patients. An additional 10% was added to compensate for possible non-response, resulting in a final sample size of 422 participants to enhance the reliability of the study.

Inclusion criteria:

1. Patients who had been receiving antihypertensive medications for more than one year.
2. Patients aged 18 years and older.

Exclusion criteria:

1. Patients who were not using antihypertensive medications on a regular basis.
2. Pregnant women.
3. Patients who refused to participate in the study.

3-Data collection:

The self-reported questionnaire was designed and adapted by the authors based on similar studies. Mixed (close-open) structured questionnaire developed into English, after that translated into Arabic, and then translated back into English to confirm the validity of the translation and the integrity of the content. The survey used the Arabic text to administer the study. Similarly, the scientific reliability and validity of the tool were evaluated by three independent public health experts, who provided feedback on the accuracy, relevance, and simplicity of the included questions and statements. 5%of the questionnaire was pretested, and the final version was reviewed and approved by the research team. A calculated Cronbach alpha of more than 0.7 will be obtained from the overall domains.

4-Statistical analysis:

For the statistical analysis, coded data were entered and analyzed using IBM SPSS Statistics median and interquartile ranges are applied for non-normal variables. In addition. On the other hand, qualitative data is expressed by percentage and proportion.

The relation between categorical variables analyzed with a chi-square test and a P-value less than 0.05 was considered statistically significant. The topic and tables were written in the ward office, while the Graphs were drawn using the Excel program.

5-Ethical consideration:

The context and objectives of the study were explained to respondents on the first page of the questionnaire; they had the freedom to leave at any moment, without explanation, and all data and opinions would be kept private and anonymous. Verbal informed consent to participate was obtained from the patients who agreed to participate in the study before participation and from the

doctors who own the clinics. The study protocol was also approved by the Research Ethics Committee at the Faculty of Medicine and Health Sciences, University of Aden, with code: (Re-238-2025)

Result:

A- Univariate analysis:

1- Patients' characteristics:

Males constituted a slight majority (53.8%) compared to females (46.2%), indicating a relatively balanced gender distribution. The median age of the participants was 57 years (range: 26–92), reflecting a wide age variation and emphasizing the study's focus on middle-aged and older adults, who are typically at higher risk of hypertension. Most participants were married (79.3%), followed by widowed individuals (11.7%).

Furthermore, overweight (35.8%) and obesity (32.9%) were highly prevalent, indicating a substantial burden of weight-related risk factors among the study population. The majority of participants were non-smokers (74.8%); however, 25.2% reported a history of smoking, including both heavy and moderate smokers. Qat chewing was a common practice among participants (40.1%), which is considered an important local habit of interest due to its potential cardiovascular effects. Only 9.7% of participants reported engaging in regular physical exercise, reflecting a generally sedentary lifestyle (Table 1)

Table 1: Patients' characteristics of the study sample, Aden, Yemen 2025 (n= 422)

Patients' characteristics	No	%
Sex		
Males	227	53.8
Females	195	46.2
Age (median) 57 (26-92)		
Marital status		
Single	17	4
Married	335	79.3
Divorced	21	5
Widowed	49	11.7
body mass index		
under weight	12	2.8
normal weight	120	28.5
over weight	151	35.8
obese	139	32.9
Cigarette smoking		
Heavy smoker	42	10
moderate smoker	64	15.2
Non smoker	316	74.8
Qat chewing		
Yes	169	40.1
No	253	59.9
Doing Exercises		
Yes	41	9.7
No	381	90.3

2- The medical features (comorbidity) of the study sample:

Diabetes mellitus (37.9%) and heart diseases (27.7%) were the most prevalent comorbidities among the participants. In addition, dyslipidemia (23.5%), kidney disease (9.2%), and fatty liver disease (10.9%) were also commonly reported. In contrast, cerebrovascular disease was present in 7.3% of the sample, indicating an advanced stage of cardiovascular involvement in a subset of patients (Table 2)

Table 2: Distribution of the study sample by medical features (comorbidity), Aden, Yemen 2025 (n=319)

Comorbidity diseases	No*	%
Diabetes Mellitus	160	37.9
Hypothyroidism	8	1.9
Hyperthyroidism	3	0.7
Heart diseases	117	27.7
Fatty liver	46	10.9
Cerebral vascular diseases	31	7.3
Kidney disease	39	9.2
Dyslipidemia	99	23.5
Others	86	20.4

*Total of multiple response answers

3- Antihypertensive Drug Classes Used among the study sample:

Calcium channel blockers (34.1%) and diuretics (30.8%) were the most frequently used, followed by ACE inhibitors and ARBs (each 24.4%). Beta-blockers (12.6%) and adrenergic receptor antagonists (14.2%) had moderate use. Combination therapy was noted in 7.3% of cases. (Table 3)

Table 3: Drug classes utilized by the study sample, Aden, Yemen 2025

Antihypertensive class	No*	%
Calcium channel blockers.	144	34.1
Angiotensin-converting enzyme inhibitors (ACEi)	103	24.4
Angiotensin II receptor antagonists (ARBs).	103	24.4
Beta blocker	53	12.6
Adrenergic receptor antagonists(except beta blockers)	60	14.2
Vasodilators	5	1.2
Renin inhibitors (RI)	5	1.2
Aldosterone receptor antagonist (MRAs)	8	1.9
Diuretics	130	30.8
Combination	31	7.3

*Total of multiple response answers

B- Bivariate analysis:

1- Relation between antihypertensive class and Hypertensive patients according to the WHO guide:

This table shows the relationship between different classes of antihypertensive medications and blood pressure control status according to WHO treatment guidelines. Out of the total study population, 162 patients (38.4%) had controlled blood pressure, while 260 patients (61.6%) had uncontrolled blood pressure There were no significant associations found (*P*-values all > 0.05), indicating no single drug class was statistically superior in achieving control. While ARBs and calcium channel blockers showed slightly better control rates, but not significant.(Table4)

Table 4: Relation between antihypertensive class and Hypertensive patients, according to the WHO guide Aden, Yemen 2025

Antihypertensive Class	Hypertensive patients (WHO) guide		P
	Controlled N=162(38.4%)	Uncontrolled N=260(61.6%)	
Calcium channel blockers. YES NO	54(33.3%) 108(66.7%)	90(34.6%) 170(65.4%)	0.787
ACEi YES NO	36(22.2%) 126(77.8%)	67(25.8%) 193(74.2%)	0.409
ARBs. YES NO	70(43.2%) 92(56.8%)	108(41.5%) 152(58.5%)	0.735
Beta blocker YES NO	19(11.7%) 143(88.3%)	34(13.1%) 226(86.9%)	0.684
Adrenergic receptor antagonists YES NO	24(14.8%) 138(85.2%)	30(11.5%) 230(88.5%)	0.404
Vasodilators YES NO	2(1.2) 160(98.8%)	3(1.2%) 257(98.8%)	0.941
Renin inhibitors YES NO	1(0.6%) 161(99.4%)	4(1.5%) 256(98.5%)	0.395
Aldosterone receptor antagonist YES NO	4(2.5%) 158(97.5%)	4(1.5%) 256(98.5%)	0.490
DUERITICS YES NO	48(29.6%) 114(70.4%)	82(31.5%) 178(68.5%)	0.680

*Total of multiple response Answers *Chi-square test

2- Relation between antihypertensive class and Hypertensive patients according to the ACC/AHA guide:

According to ACC/AHA guidelines, only 10% of patients achieved controlled blood pressure, while 90% remained uncontrolled, and there were no significant associations found between drug class and BP control (*P* > 0.05). ARBs had a slightly better profile, but the difference was not statistically significant .(Table 5)

Table 5: Relation between antihypertensive class and Hypertensive patients, according to the ACC/AHA guide Aden, Yemen 2025

Antihypertensive class	Hypertensive patients (ACC/AHA guide)		P
	Controlled N=42(10%)	Uncontrolled N=380(90%)	
Calcium channel blockers. YES NO	13(31%) 29(69%)	131(34.5%) 249(65.5%)	0.648
ACEi YES NO	10(23.8%) 32(76.2%)	93(24.5%) 287(75.5%)	0.924
ARBs. YES NO	21(50%) 21(50%)	157(41.3%) 223(58.7%)	0.280
Beta blocker YES NO	2(4.5%) 40(95.5%)	51(13.4%) 329(86.6%)	0.108
Adrenergic receptor antagonists YES NO	6(14.3%) 36(85.7%)	47(12.4%) 332(87.4%)	0.890
Vasodilators YES NO	0(0) 42(100%)	2(0.5%) 378(99.5%)	0.99
Renin inhibitors YES NO	1(2.3) 41(97.7%)	5(1.3%) 375(98.7%)	1
Aldosterone receptor antagonist YES NO	1(2.4%) 41(97.6%)	7(1.8%) 373(98..2%)	0.571
Diuretics YES NO	13(31%) 29(69%)	117(30.8%) 263(69.2%)	0.983

*Total of multiple response Answers *Chi-square test

Discussion:

This study was conducted to evaluate the effectiveness of antihypertensive medications among patients with hypertension attending outpatient clinics in Aden. The results showed that patients were treated with various classes of antihypertensive drugs, with calcium channel blockers being the most frequently used (34.1%), followed by diuretics (30.8%), while renin–angiotensin system inhibitors were prescribed to 24.4% of patients. This distribution is inconsistent with the findings of some studies, that reported renin–angiotensin system inhibitors were the most commonly prescribed antihypertensive agents [6].

The sex distribution among hypertensive patients varies considerably across studies. some of them reported a higher proportion of females than males [7,8]. In contrast, other study found a higher proportion of males. [9]. Similarly, the findings did study not align with the results of the study performed in Ethiopia [10].

According to the World Health Organization, the age-standardized prevalence of hypertension among adults aged 30–79 years in Yemen is estimated at 28%–29.3%, indicating that nearly one-third of adults within this age group are affected [11]. This represents a major public health challenge and reflects a higher burden of hypertension in Yemen compared with global averages, highlighting the urgent need for targeted prevention and treatment strategies. In the present study, the median age of participants was 57 years, and this agree with study performed in Tanzania which reported the same age [12].

Evidence suggests that regular physical activity can induce beneficial hemodynamic changes, increase nitric oxide production, and improve peripheral vascular resistance [2]. In the present study, only 9.7% of participants reported engaging in regular physical exercise, reflecting a predominantly sedentary lifestyle. Physical inactivity is a well-established risk factor for chronic diseases, including hypertension, and may partly explain the high proportion of uncontrolled blood pressure observed in this population [2,12].

This study also evaluated the impact of the 2017 ACC/AHA hypertension definition and its recommended treatment target (<130/80 mmHg). Under this definition, the diagnostic threshold for hypertension was lowered from ≥140/90 mmHg to ≥130/80 mmHg, resulting in a higher estimated prevalence of hypertension compared with the WHO definition [13].

Regarding antihypertensive drug classes, angiotensin II receptor blockers (ARBs) demonstrated the highest blood pressure control rates according to both ACC/AHA and WHO guidelines. This finding is consistent with a study that reported that ARBs may achieve greater blood pressure reduction compared with other antihypertensive agents [14].

Overall, the blood pressure control rate declined markedly when applying the ACC/AHA guideline compared with the WHO guideline, whereas the proportion of uncontrolled hypertension increased substantially under the ACC/AHA criteria.

References:

[1] K. Kario, S. Hoshide, and M. Mogi, “Five special focuses of hypertension research: digital hypertension, home blood pressure-centered approach, renal denervation, Asians, for guidelines,” *Hypertension Research*, vol. 46, pp. 2557–2560, 2023.

[2] A. Mandal, R. Singh, K. Patel, and V. Sharma, “Lifestyle factors contributing to systemic arterial hypertension: a multifactorial approach,” *Journal of Hypertension and Public Health*, vol. 12, no. 3, pp. 145–153, 2025.

[3] P. P. Toth, “Cardiovascular disease epidemiology and risk factors: general concepts,” in *Nutraceuticals and Cardiovascular Disease: An Evidence-Based Approach for Clinical Practice*. Cham, Switzerland: Springer, 2021, pp. 1–22.

[4] J. Flack and B. Adekola, “Blood pressure and the new ACC/AHA hypertension guidelines,” *International Journal of Clinical Medicine*, vol. 30, pp. 160–164, 2020.

[5] World Health Organization, *Guideline for the Pharmacological Treatment of Hypertension in Adults*. Geneva, Switzerland: WHO, 2021.

[6] M. Bronsert, W. Henderson, R. Valuck, P. Hosokawa, and K. Hammermeister, “Comparative effectiveness of antihypertensive therapeutic classes and treatment strategies in the initiation of therapy in primary care patients: a DARTNet study,” *Journal of the American Board of Family Medicine*, vol. 26, no. 5, pp. 529–538, 2013.

[7] A. Alenazi and B. Alqahtani, “National and regional prevalence rates of hypertension in Saudi Arabia: a descriptive analysis using national survey data,” *Frontiers in Public Health*, vol. 11, p. 1092905, 2023.

[8] A. Gebrie, N. Gnanasekaran, M. Menon, and M. Alemayehu, “Gender differences in the prevalence of hypertension: a systematic review and meta-analysis,” *BMC Cardiovascular Disorders*, vol. 20, no. 1, pp. 1–9, 2020.

[9] E. Jadidi, H. Moradi, M. Amini, and S. Rezaei, “Epidemiological trends and management challenges of hypertension: a population-based study,” *Journal of Hypertension and Global Health*, vol. 15, no. 2, pp. 87–95, 2025.

[10] B. Sileshi, F. Urgessa, and M. Wordofa, “A comparative study of hematological parameters between hypertensive and normotensive individuals in Harar, eastern Ethiopia,” *PLoS One*, vol. 16, no. 12, e0260751, 2021.

[11] World Health Organization, “Age-standardized prevalence of hypertension among adults aged 30 to 79 years (%),” *Global Health Observatory Data Repository*, 2025.

[12] D. Katatwire and A. Meremo, “Prevalence of and factors associated with uncontrolled hypertension among patients with early chronic kidney disease attending tertiary hospitals in Dodoma, Tanzania: a cross-sectional study,” *BMJ Open*, vol. 13, e074441, 2023.

[13] C. Chotruangnapa, T. Thammarux, and P. Thongdang, "Prevalence and clinical characteristics including patterns of antihypertensive drug administration of different home blood pressure phenotypes in treated hypertensive patients," *International Journal of Hypertension*, vol. 2022, Article 6912839, 2022.

[14] J. Parikh, A. Randhawa, S. Wharton, H. Edgell, and J. L. Kuk, "The association between antihypertensive medication use and blood pressure is influenced by obesity," *Journal of Obesity*, vol. 2018, Article 4573258, 2018.

مقالة بحثية

فعالية العلاج الخافض لضغط الدم وفق إرشادات منظمة الصحة العالمية (WHO) والكلية الأمريكية لأمراض القلب/الجمعية الأمريكية للقلب (ACC/AHA) لدى مرضى ارتفاع ضغط الدم المترددين على العيادات الخارجية في عدن، اليمن

نورا أ.[1]، آلاء م.[1]، احمد ع.[1]، منير ع.[1]، شذى ج.[1]، زينة ع.[1]، صلاح ف.[1]، محمد ع.[1]، عماد ع.[1]، محمد ح.[1]، منال ع.[1]، خطاب أ.[1]، مرام س.[1]، فاطمة ع.[1]، ملك ط.[1]، ايات س.[1]، محمد م.[1]، محسن م.[1]، سميرة م.[1]، سباء ع.[1،*]

[1] قسم علم الادوية والسموم، كلية الصيدلة، جامعة عدن، اليمن

* الباحث الممثّل: سباء عادل محمد؛ البريد الالكتروني: sa.abdullah@pharm.adenuniv.com

استلم في: 15 نوفمبر 2025 / قبل في: 07 ديسمبر 2025 / نشر في 31 ديسمبر 2025

المُلخّص

يُعد ارتفاع ضغط الدم من أبرز التحديات الصحية العالمية، وهو العامل القابل للتعديل الأكثر ارتباطًا بالإصابة بالأمراض القلبية الوعائية والوفيات الناتجة عنها على مستوى العالم. وعلى الرغم من التقدم الكبير في العلاجات الدوائية، ما تزال عوامل نمط الحياة مثل قلة النشاط البدني، السمنة، الإفراط في تناول الصوديوم الغذائي، واستخدام التبغ أو الكحول تسهم بشكل كبير في زيادة انتشار المرض. وقد ثبت أن النشاط البدني المنتظم، بما في ذلك التمارين المنظمة، يُحسن من وظيفة الأوعية الدموية ويساعد على ضبط ضغط الدم. ومع ذلك، لا يزال دور الاستجابة لتمارين المقاومة في علاج ارتفاع ضغط الدم غير واضحين بشكل كامل. ويُعد فهم هذه العلاقة أمرًا ضروريًا لتطوير تدخلات غير دوائية فعالة تُكمل العلاج الدوائي. جُريت دراسة مقطعية تحليلية خلال الفترة من ابريل إلى مايو 2025 على مرضى ارتفاع ضغط الدم المراجعين للعيادات الخارجية في عدد من العيادات المختارة عشوائيًا في مدينة عدن، اليمن. تم اختيار عينة مكوّنة من 422 مريضًا بطريقة العينة العشوائية البسيطة من سجلات العيادات. شملت الدراسة البالغين ممن تبلغ أعمارهم 18 عامًا فأكثر، والذين تلقوا علاجًا خافضًا لضغط الدم لمدة لا تقل عن سنة واحدة. وتم استبعاد النساء الحوامل والمرضى غير الملتزمين باستخدام العلاج بانتظام. جُمعت البيانات باستخدام استبيان عربي مُنظَّم، مُختبَر مسبقًا ومُتحقق من صدقه وثباته، ومُعدّل من دراسات سابقة. جرى تحليل البيانات باستخدام برنامج SPSS الإصدار 25، حيث استُخدمت الإحصاءات الوصفية واختبار كاي تربيع للمتغيرات التصنيفية، واعتُبرت القيمة الاحتمالية (P) أقل من 0.05 ذات دلالة إحصائية. شملت الدراسة 422 مريضًا مصابًا بارتفاع ضغط الدم، وكان متوسط العمر الوسيط 57 سنة، مع غلبة طفيفة للذكور (53.8%). وبلغت نسبة زيادة الوزن 35.8%، بينما بلغت السمنة 32.9%. أفادت الدراسة ان 25.2% من المرضى مدخنين، في حين أ 40.1% منهم يتعاطون القات، ولم يُمارس النشاط البدني المنتظم سوى 9.7%. وكان داء السكري (37.9%) وأمراض القلب (27.7%) أكثر الأمراض المصاحبة شيوعًا، يليه اضطراب شحوم الدم (23.5%) ومرض الكلى المزمن (9.2%). وكانت حاصرات قنوات الكالسيوم (34.1%) ومدرات البول (30.8%) أكثر الفئات الدوائية استخدامًا، تلتها مثبطات الإنزيم المحول للأنجيوتنسين وحاصرات مستقبلات الأنجيوتنسين (24.4% لكل منهما). ووفقًا لمعايير كل من منظمة الصحة العالمية والكلية الأمريكية لأمراض القلب/جمعية القلب الأمريكية، لم تُظهر أي فئة دوائية ذا دلالة إحصائية في تحقيق التحكم في ضغط الدم. لا تزال السيطرة على ضغط الدم بين المرضى المراجعين للعيادات في عدن، اليمن، دون المستوى المطلوب. وعلى الرغم من شيوع استخدام حاصرات قنوات الكالسيوم ومدرات البول، لم تُثبت أي فئة دوائية تفوقها في تحقيق السيطرة المثلى على ضغط الدم. وكانت عوامل الخطورة المرتبطة بنمط الحياة، لا سيما التدخين، قلة النشاط البدني، وزيادة وزن الجسم، منتشرة على نطاق واسع، في حين زادت الأمراض المزمنة المصاحبة مثل السكري وأمراض القلب من العبء الصحي العام. وتؤكد هذه النتائج على أهمية دمج برامج تعديل نمط الحياة، وتدخلات الإقلاع عن التدخين، وتعزيز التثقيف الصحي ضمن الاستراتيجيات الروتينية لإدارة ارتفاع ضغط الدم بهدف تحسين النتائج السريرية.

الكلمات المفتاحية: ارتفاع ضغط الدم؛ أدوية ارتفاع ضغط الدم؛ إرشادات منظمة الصحة العالمية (WHO)؛ إرشادات الكلية الأمريكية لأمراض القلب/جمعية القلب الأمريكية (ACC/AHA).

How to cite this article:

Noura A., Alaa M., Ahmed A., Muneer A., Shatha J., Zaina A., Salah F., Mohammed A., Emad A., Mohammed H., Manal E., Khattab A., Maram S., Fatima A., Malak T., Ayat S., Mohammed M., Mohsen M., Samira M., Saba A., "EFFECTIVENESS OF ANTIHYPERTENSIVE THERAPY ACCORDING TO WHO AND ACC/AHA GUIDELINES AMONG HYPERTENSIVE PATIENTS ATTENDING OUTPATIENT CLINICS IN ADEN, YEMEN", *Electron. J. Univ. Aden Basic Appl. Sci.*, vol. 6, no. 4, pp. 265-271, Dec. 2025. DOI: https://doi.org/10.47372/ejua-ba.2025.4.478