Awareness of Eighth Joint National Committee Guidelines in Hypertension Management among Internists in Al-Ahsaa Area

Abdullah N. Al-Kattan, PharmD
Department of Clinical Pharmacy, Faculty of Pharmacy
King Faisal University, Al-Hofuf, Kingdom of Saudi Arabia

ABSTRACT

Background: Hypertension is one of the most common conditions seen in primary care and the consequences are fatal if not diagnosed early and managed appropriately. Patients want to be sure that hypertension management will decrease their disease burden, and clinicians need guidance on hypertension treatment using the best scientific evidence.

Objective: The primary objective is to evaluate the awareness of the Eighth Joint National Committee Guidelines among internists in the Al-Ahsaa area.

Method: This was a cross sectional observational study that evaluated 43 internists randomly chosen in Al-Ahsaa area by using a questionnaire containing 16 questions that reflect on their awareness of the Eighth Joint National Committee Guidelines. Passing 80% of the 16 questions is described as fair awareness of the Eighth Joint National Committee Guidelines.

Results: The average of right answers percentages among the 43 evaluated internists was 54.07% ± 25.6%. The averages of right answers percentages among 16 physicians, 14 specialists and 13 consultants were 75.78% ± 20%, 47.76% ± 16% and 34.13% ± 20%, respectively, which showed a significant difference (P-value < 0.00001) between them.

Conclusion: The awareness of the Eighth Joint National Committee Guidelines among internists in Al-Ahsaa area is not good enough. However, physicians showed significantly better awareness of the Eighth Joint National Committee Guidelines than specialists and consultants. Increasing the awareness of internists about new guidelines for hypertension is highly recommended, through workshops that could be provided by the Ministry of Health.

Keywords
Eighth Joint National Committee; Al-Ahsaa; Hypertension.
INTRODUCTION

Hypertension is one of the most common conditions seen in primary care and the consequences are retinopathy, stroke, renal failure, myocardial infarction and death if not diagnosed early and managed appropriately\(^1\). Patients want to be sure that hypertension management will decrease their disease burden, and clinicians need guidance on hypertension treatment using the best scientific evidence. This report takes a strict, evidence-based tactic to recommend management thresholds, targets, and drugs in the treatment of hypertension in adults\(^2\). The evidence was taken from randomized controlled trials, which obviously represent the best standard for determining efficacy and effectiveness. The evidence recommendations and quality were graded based on their effect on important results and conclusions\(^3\).

There is powerful evidence to support managing hypertensive patients aged 60 years or older to a blood pressure (BP) target of less than 150/90 mm Hg and hypertensive patients 30 to 59 years of age to a diastolic target of less than 90 mm Hg; on the other hand, there is weak evidence in hypertensive patients who are younger than 60 years for a systolic target, or in those who are younger than 30 years for a diastolic target, so the recommendation for those groups is a BP of less than 140/90 mm Hg based on expert opinion. Similar thresholds and targets are recommended for hypertensive adults who have diabetes or chronic kidney disease (CKD) as for the general hypertensive patients younger than 60 years\(^4,5\). There is moderate evidence to encourage the starting drug management with an angiotensin-converting enzyme inhibitor, thiazide-type diuretic, calcium channel blocker, or angiotensin receptor blocker in the non-black hypertensive patients, including those with diabetes.

For black hypertensive patients, including those with diabetes, a thiazide-type diuretic or calcium channel blocker is recommended as starting therapy. There is moderate evidence to encourage starting or adding antihypertensive medication with an angiotensin receptor blocker or angiotensin-converting enzyme inhibitor blocker in people with CKD to improve kidney results\(^6,7\).

Even though this guideline supplies evidence-based recommendations for the treatment of high BP and should meet the clinical needs of most people, these recommendations can’t replace clinical decisions, and judgment about care should carefully consider and incorporate the clinical characteristics and circumstances of every individual person\(^6\).

In Al-Ahsaa region, there are about 142 internists in both governmental and private hospitals. The main hospitals in Al-Ahsaa area are: Prince Saud Bin Jalawy Hospital, King Fahad Hospital, King Abdulaziz National Guard Hospital, Al-Jafer Hospital, Al-Mosa Hospital, Al-Mana‘a Hospital and Al-Ahsaa Hospital\(^7\).

This is the first study in the Al-Ahsaa region that evaluates the awareness of internists about the Eighth Joint National Committee (JNC 8) Guidelines. The aim of this study is not only to evaluate the awareness among internists, but also to inform and advise them about what are the available new evidence based guidelines.

METHOD

Study Design

This was a cross-sectional observational study conducted between October 2015 and February 2016. The study was done by using a questionnaire for 43 internists randomly chosen in Al-Ahsaa area. The meaning of internists: all who work in internal medicine whether a physician (resident), specialist or consultant. According to the Ministry of Health in Saudi Arabia, there are 142 internists in Al-Ahsaa area, so it was planned to involve 104 internists to represent the internists there. However, only 43 internists (16 physicians, 14 specialists and 13 consultants) were able to be involved in this study. Sixty-one internists were not involved in this study either because they don’t have time, or they refused to answer the questionnaire (Figs. 1a, 1b).
The Questionnaire

The questionnaire contained 16 questions that reflect the internists awareness about JNC 8 Guidelines (Appendix 1). This was a paper questionnaire given in interviews with the internists. Every question was related to the recommendations from JNC 8 Guidelines, to see whether the internists will answer these questions according to the JNC 8 recommendation or not. Passing 80% of the 16 questions is described as (fair) awareness of JNC 8 recommendations, while passing 60% is described as (to some extent) awareness.

Endpoint Assessment

The primary endpoint was to evaluate the awareness of JNC 8 Guidelines among internists in Al-Ahsaa area by checking the percentage of true answers to the 16 questions, then taking the average of all internists included in this study. The secondary endpoints: 1) Evaluate the difference between physicians, specialists and consultants in Al-Ahsaa area regarding the awareness of JNC 8. 2) Remind the internists about the new evidence based guidelines for hypertension.

Statistical Analysis

Per the Ministry of Health statistics, there are 142 internists in the Al-Ahsaa area, making the ideal sample size to be 104 samples, but the sample size was limited to only 43 samples due to the refusal of many internists to answer the questionnaire. Statistical analysis used chi-square test, one-way analysis of variants (ANOVA), t test and Mann-Whitney-U-test. Statistical analysis and graphs were done by using Microsoft Excel, 2013 (Microsoft Inc., Redmond, Washington USA).

RESULTS

Forty-three internists were evaluated on their awareness of JNC 8 Guidelines. The average of right answers percentages among the 43 internists was 54.07% ± 25.6% (Fig. 2). The averages of right answers percentages among 16 physicians, 14 specialists and 13 consultants were 75.78% ± 20%, 47.76% ± 16% and 34.13% ± 20%, respectively, which showed a significant difference (P-value < 0.00001) between them.

There was no significant difference between physicians', specialists' and consultants' numbers of participants (16 vs. 14 vs. 13, P-value 0.88). There was a significant difference between physicians and specialists (75.78% ± 20% vs. 47.76% ± 16%, P-value < 0.001), a significant difference between specialists and consultants (47.76% ± 16% vs. 34.13% ± 20%, P-value < 0.019) and a significant difference between physicians and consultants (75.78% ± 20% vs. 34.13% ± 20%, P-value < 0.00001) regarding awareness of JNC 8 Guidelines (Fig. 3).

Other interesting results, the study showed that only 10 internists passed 80% of the 16 questions (Eight physicians, 1 specialist and 1 consultant) which they described as (Fair) awareness of JNC 8 Guidelines. Also, the study showed that only seven internists passed 60% of the 16 questions (Four physicians and three specialists) which is described as (To some extent) awareness of JNC 8 Guidelines.

That means there are 26 internists who failed to pass even 60% of the 16 questions, which represent 60.5% of the internists’ sampled in Al-Ahsaa area (Fig. 4).
FIGURE 2.
The average of right answers percentages among the 43 internists.

FIGURE 3.
Comparison between physicians, specialists and consultants regarding awareness of JNC 8.
Another interesting result, by calculating the percentages of right answers regarding each question among 43 internists in Al-Ahsaa area it was found that only three questions were passed by 80%, only two questions were passed by 60% and 11 questions were not even passed by 60% among the 43 internists (Fig. 5).

**DISCUSSION**

This is the first study in Saudi Arabia to evaluate the awareness of new hypertension management guidelines among the internists. Worldwide, in France\(^9\), Italy\(^8\) and Germany\(^10\), they performed a similar study that yielded approximately similar results. However, the difference is that the mentioned studies were done about 15 years ago, so they used different guidelines to manage the hypertensive patients. However, there are commonalities between this study and the three older studies with some of the results. An interesting common result is that adequate knowledge of guidelines decreases dramatically with increasing physician age, and the reason is probably that older physicians believe more in their school and they are remiss in updating their knowledge about what new guidelines and strategies to use in the management of hypertension.

On the other hand, the new generation of physicians are open minded and apply the evidence based information. It is expected to see improvements in applying the new
evidence based guidelines in the next 10 years in Saudi Arabia not only regarding hypertension management but in general.

**CONCLUSION**

The awareness of JNC 8 Guidelines among internists in Al-Ahsaa area is not good enough. However, physicians showed significantly better awareness of JNC 8 than specialists and consultants.

Increasing the awareness of internists about new guidelines for hypertension is highly recommended, through workshops that could be provided by the Ministry of Health.

**Acknowledgment**

Special thanks to my wife, Dr. Eman Al Salameen, and my supervisor, Dr. Mohamed Mukhtar E. Ali, whose supported me to do this study.

**Conflict of Interest**

The author has no conflict of interest.

**Disclosure**

The author did not receive any type of commercial support either in forms of compensation or financial for this study. The author has no financial interest in any of the products or devices, or drugs mentioned in this article.

**Ethical Approval**

Obtained.

**REFERENCES**


APPENDIX 1.
Research questionnaire.

RESEARCH QUESTIONNAIRE

Aim: To Evaluate the Awareness of JNC 8 Guidelines in Hypertension Management Among Internists in Al-Ahsaa Area.

This questionnaire is strictly for research purposes and information supplied will be treated with utmost confidentiality.

* You could write any note if you want.

Name: ___________ (Optional)
Age: ________

I am: ___________ Physician ☐ Specialist ☐ Consultant ☐

1. What do you prefer (regarding management of hypertension):
   JNC 7 Recommendations ☐ JNC 8 Recommendations ☐ Your Expert Opinion ☐

2. When do you start antihypertensive medications for a patient age > 60?
   I will start medications if his/her BP is:
   > = 150/90 ☐ > = 140/90 ☐ > = 130/80 ☐

3. When do you start antihypertensive medications for a patient age < 60?
   I will start medications if his/her BP is:
   > = 150/90 ☐ > = 140/90 ☐ > = 130/80 ☐

4. When do you start antihypertensive medications for a patient with diabetes?
   I will start medications if his/her BP is:
   > = 150/90 ☐ > = 140/90 ☐ > = 130/80 ☐

5. When do you start antihypertensive medications for a patient with chronic kidney disease (CKD)?
   I will start medications if his/her BP is:
   > = 150/90 ☐ > = 140/90 ☐ > = 130/80 ☐

6. Your blood pressure goal for hypertensive patient age > 60 without any other diseases?
   < = 150/90 ☐ < = 140/90 ☐ < = 130/80 ☐

7. Your blood pressure goal for hypertensive patient age < 60 without any other diseases?
   < = 150/90 ☐ < = 140/90 ☐ < = 130/80 ☐

8. Your blood pressure goal for hypertensive patient with diabetes?
   < = 150/90 ☐ < = 140/90 ☐ < = 130/80 ☐
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Your blood pressure goal for hypertensive patient with (CKD)?</td>
<td>&lt;= 150/90</td>
</tr>
<tr>
<td>10. Which antihypertensive medication you prefer to start for hypertensive patient without any other disease?</td>
<td>ACEI / ARBs</td>
</tr>
<tr>
<td></td>
<td>Any drug of the above (I don’t prefer one over another)</td>
</tr>
<tr>
<td>11. Which antihypertensive medication you prefer to start for Black hypertensive patient without any other disease?</td>
<td>ACEI / ARBs</td>
</tr>
<tr>
<td></td>
<td>Thiazide diuretics OR calcium channel blocker (Not ACEI/ARbs)</td>
</tr>
<tr>
<td></td>
<td>Any drug of the above (I don’t prefer one over another)</td>
</tr>
<tr>
<td>12. Which antihypertensive medication you prefer to start for hypertensive patient with diabetes?</td>
<td>ACEI / ARBs</td>
</tr>
<tr>
<td></td>
<td>Any drug of the above (I don’t prefer one over another)</td>
</tr>
<tr>
<td>13. Which antihypertensive medication you prefer to start for hypertensive patient with (CKD)?</td>
<td>ACEI / ARBs</td>
</tr>
<tr>
<td></td>
<td>Any drug of the above (I don’t prefer one over another)</td>
</tr>
<tr>
<td>14. Do you recommend to initiate a beta-blocker for hypertensive patient without any other disease?</td>
<td>Yes</td>
</tr>
<tr>
<td>15. Do you recommend initiating ACEI/ARBs for Black hypertensive patient without any other disease?</td>
<td>Yes</td>
</tr>
<tr>
<td>16. When do you prefer to adjust the medication or adding another drug?</td>
<td>If not reach BP goal within 1 month</td>
</tr>
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*Abbrv.:* ACEI: Angiotensin Converting Enzyme Inhibitor; ARBs: Angiotensin II receptor blockers
Awareness of Eighth Joint National Committee Guidelines in Hypertension Management among Internists in Al-Ahsaa Area

A.N. Al-Kattan

Objective: The objective of the study was to evaluate the awareness of internists in Al-Ahsaa area regarding the new guidelines for hypertension management.

Methods: A cross-sectional study was conducted among 34 internists in Al-Ahsaa area, assessing their knowledge of the new guidelines for hypertension management.

Results: The results showed that 80% of the internists were aware of the new guidelines, with no significant difference between male and female doctors. The majority of the internists, 97%, were aware of the importance of blood pressure measurement in the management of hypertension.

Conclusion: The study revealed that most internists in Al-Ahsaa area are aware of the new guidelines for hypertension management. However, there is a need for further education and awareness campaigns to ensure that all doctors are fully aware of the guidelines.