Changing the Paradigm: Strategies for Improved Management of Hypertension

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Increasing Prevalence of Hypertension by WHO Region


BLOOD PRESSURE – TAKE CONTROL

ACC Middle East Conference 2016
Awareness, treatment, and control of hypertension in the Middle East and Africa

Despite prevalence of hypertension in >¼ of the populations, no more than 50% of hypertensive pts aware of condition in any region.

No more than 1 patient in 3 with hypertension were on therapy.
Awareness, Treatment, and Control of Hypertension: Saudi Arabia

- 44.7% known hypertensives confirmed by clinician
  - 71.8% on therapy
  - 37% controlled

- 55.3% unaware of disease
  - Higher awareness among females, older adults, eastern region, diabetes, active
Awareness, treatment, and control of hypertension in the US 2007-12 NHANES

- Prevalence of hypertension among US adults ≥20 years of age estimated to be 32.6%
- Awareness: 82.7%
- Treatment: 76.5%
- Control: 35.4-58.0%
Hypertension Control Rates in RCTs: Benchmarks for Healthcare Systems?

- Percent of participants achieving BP <140/90 mmHg
Global agreement in hypertension management
Global agreement in hypertension management

• Survey by International Society of Hypertension
  – 90 regional affiliated professional societies
  – 77 countries
  – 31 respondents (9 HIC, 17 UMIC, 5 LMIC/LIC)

• Remarkable consistency across countries from different regions and varying economic conditions
Global agreement in hypertension management

- Blood pressure measurement

<table>
<thead>
<tr>
<th>BP measures recommended for decision making</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic BP</td>
<td>27 (87)</td>
</tr>
<tr>
<td>Home BP</td>
<td>15 (48)</td>
</tr>
<tr>
<td>ABPM</td>
<td>19 (61)</td>
</tr>
</tbody>
</table>

ABPM, ambulatory blood pressure monitoring; BP, indicates blood pressure. 

*Percentage out of 31 responding societies.*
Global agreement in hypertension management

• Implementation of lifestyle measures

![Bar chart showing the frequency out of 31 responding societies for different lifestyle measures. The measures include Physical exercise, Salt restriction, Weight reduction, Other diets, Smoking cessation, Alcohol moderation, and Stress control. The chart indicates varying degrees of agreement with Physical exercise having the highest frequency.]
Medications preferred in various pt populations

• Uncomplicated HTN
  – All used 4 major drug classes
  – Less use of BB

• Elderly
  – Infrequent use of BB

• CHD
  – BB universally used
Global agreement in hypertension management

Preferred combination drug regimens

<table>
<thead>
<tr>
<th>Groups</th>
<th>RASI/CCB</th>
<th>RASI/D</th>
<th>CCB/D</th>
<th>CCB/BB</th>
<th>D/BB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertensive patients</td>
<td>27 (87)</td>
<td>22 (71)</td>
<td>5 (16)</td>
<td>6 (19)</td>
<td>3 (10)</td>
</tr>
<tr>
<td>Patients with type 2 diabetes</td>
<td>26 (84)</td>
<td>12 (39)</td>
<td>1 (3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

BB, β blocker; CCB, calcium channel blocker; D, diuretic; RASI, indicates renin–angiotensin system inhibitor (angiotensin-converting enzyme inhibitor or angiotensin receptor blocker).

*aPercentage out of 31 responding societies.*
Global agreement in hypertension management

Blood pressure thresholds and targets for BP-lowering drugs

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean mmHg</th>
<th>Most common value mmHg</th>
<th>N (%)a</th>
<th>Range mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thresholds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncomplicated HT</td>
<td>142/90</td>
<td>140/90</td>
<td>28 (90%)</td>
<td>140/90 to 155/90</td>
</tr>
<tr>
<td>Elderly</td>
<td>145/90</td>
<td>140/90</td>
<td>18 (58%)</td>
<td>140/90 to 155/85</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>136/86</td>
<td>140/90</td>
<td>12 (39%)</td>
<td>130/80 to 160/90</td>
</tr>
<tr>
<td>Strokeb</td>
<td>137/86</td>
<td>140/90</td>
<td>11 (35%)</td>
<td></td>
</tr>
<tr>
<td>Type 2 diabetes</td>
<td>132/83</td>
<td>130/80</td>
<td>16 (52%)</td>
<td>130/80 to 140/90</td>
</tr>
<tr>
<td>Adolescentsc</td>
<td>141/89</td>
<td>140/90</td>
<td>11 (35%)</td>
<td>120/80 to 160/90</td>
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<td>Blood pressure targets</td>
<td></td>
<td></td>
<td></td>
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<td>Coronary heart disease</td>
<td>136/84</td>
<td>130/80</td>
<td>13 (42%)</td>
<td>120/80 to 180/90</td>
</tr>
<tr>
<td>Stroke</td>
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<td>140/90</td>
<td>5 (16%)</td>
<td>120/70 to 140/90</td>
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Barriers to Implementation of Evidence-based Guidelines in Hypertension
Clinical Practice Guidelines

• Implementation of clinical practice guidelines is delayed and inconsistent.

• Limited effect on physician behavior change

• It takes on average 17 years for new knowledge to be incorporated into clinical practice.

• Guidelines do not implement themselves.

Barriers to implementation of evidence-based therapies

- Provider
- Patient
- Systems of care

Barriers to Guideline Implementation

The Provider
Why don’t clinicians follow clinical practice guidelines?

Figure. Barriers to Physician Adherence to Practice Guidelines in Relation to Behavior Change

- **Knowledge**
  - Lack of Familiarity
  - Volume of Information
  - Time Needed to Stay Informed
  - Guideline Accessibility
  - Lack of Awareness
  - Volume of Information
  - Time Needed to Stay Informed
  - Guideline Accessibility

- **Attitudes**
  - Lack of Agreement With Specific Guidelines
  - Interpretation of Evidence Applicability to Patient
  - Not Cost-Beneficial
  - Lack of Confidence in Guideline Developer
  - Lack of Agreement With Guidelines in General
  - "Too Cookbook"
  - Too Rigid to Apply
  - Biased Synthesis
  - Challenge to Autonomy
  - Not Practical
  - Lack of Outcome Expectancy
  - Physician Believes That Performance of Guideline Recommendation Will Not Lead to Desired Outcome
  - Lack of Self-Efficacy
  - Physician Believes that He/She Cannot Perform Guideline Recommendation
  - Lack of Motivation/Inertia of Previous Practice Habit Routines

- **Behavior**
  - External Barriers
  - Patient Factors
  - Inability to Reconcile Patient Preferences With Guideline Recommendations
  - Guideline Factors
  - Guideline Characteristics
  - Presence of Contradictory Guidelines
  - Environmental Factors
  - Lack of Time
  - Lack of Resources
  - Organizational Constraints
  - Lack of Reimbursement
  - Perceived Increase in Malpractice Liability

The Provider

Clinical Inertia
Clinical Inertia in CVD Risk Factor Management

- **Definition**
  - When a provider does not begin or does not intensify treatment when this is deemed necessary according to current clinical practice guidelines
  
  - Underutilization of therapies recognized as effective, with an adequate or even overwhelming level of proof in preventing the occurrence of... death, MI, CVA.
  
  - Guidelines recommending **elimination** of an established practice may be even more difficult (vitamins, niacin).

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Cabana, et al. JAMA. 199;282:1458-65
Clinical Inertia in CVD Risk Factor Management

• Particularly of concern for illnesses in which abnormal values may be the only manifestation of the disease: hypertension, dyslipidemia, diabetes.

• Clinicians must respond to abnormal values in absence of patient symptoms
  – Response must be a high priority during clinical encounters due to the morbidity and mortality associated with ASCVD.
Why don’t clinicians follow clinical practice guidelines?

- Reasons most often by providers for failure to titrate BP medications
  - Uncertainty on the reality of elevated blood pressure readings
  - BP readings are improving and it is too soon to make a decision
  - Patient nonadherence
  - Management of hypertension is difficult, especially in diabetic patients
  - Lack of time during appointments that are too short, where hypertension was not a priority
Barriers to Guideline Implementation

The Patient
Primary Non-Adherence

- Patients do not get a new prescription filled after the prescription was written (statins)
  - 13% not filled at 30 days
  - 34.1% not filled at 60 days
Strategies to Improve Patient Adherence in Management of Hypertension

- Factors associated with poor adherence
  - Ethnic-related factors
  - Change from generic to branded medication
  - Higher co-pay/out-of-pocket medication costs
  - Perceived or actual adverse effects

- Factors associated with higher adherence
  - Primary place/provider of care
  - Each 10-year increase in age
  - Availability of generic alternative
  - Eliminating or reducing co-pay
  - Use of coupons to reduce costs
  - Auto-prescription refill
Strategies to Improve Patient Adherence in Management of Hypertension

• Factors associated with higher adherence
  – Use of PharmD to:
    • Synchronize medication refills
    • Reconcile of medication regimen
    • Reminder of refill/prescription pick-up
    • Review and discuss medications

• Factors associated with higher adherence
  – Meds-to-Bed Programs
  – Discharge review and discussion of medications
Barriers to Guideline Implementation

Systems of Care
Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

• Medical practices organized to respond to the **acute and urgent needs** patients, or symptom-relieving treatments...

• **Less time** to addressing the needs of patients with chronic illness to **prevent** deleterious sequelae.
Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

• Systems-level interventions
  – Change the way a healthcare system operates
    • Delegating responsibility for key care functions to non-physician members of the health care team
    • Putting systems in place to identify patients with hypertension and ensure appropriate follow-up with patients
    • Providing regular feedback to physicians on how well they manage patients’ conditions
Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

• Interventions that improve outcomes for hypertension include:
  – **Standardized protocols** that are consistent with evidence-based guidelines
  – **Multidisciplinary clinical care teams**
  – **Specialized clinics** for prevention/treatment, focused management
  – **Health information technology**
    • EMR, automatic prescription systems, paper and electronic reminder **systems** for health care providers
  – **Patient education**
The Role of Team-based Care in Successful Management of Hypertension
Team-based Care and Improved Blood Pressure Control

- Definition: adding new staff or changing the roles of existing staff to work with a provider

- Team includes:
  - Patient
  - Provider
  - Nurses, pharmacists, dietitians, social workers, community health workers
Team-based Care and Improved Blood Pressure Control

- **Multidisciplinary team** provides process support and shares the responsibilities of hypertension care
  - Medication management
  - Active patient follow-up
  - Evaluation and support of adherence
  - Self-management support
Team-based Care and Improved Blood Pressure Control: Systematic Review

• Proportion of patients with controlled blood pressure (≤140/90 mmHg) increased by a median of 12.0%.
  – Systolic blood pressure decreased by a median of 5.4 mmHg
    • (IQI: 2.0 to 7.2, 44 studies)
  – Diastolic blood pressure decreased by 1.8 mmHg
    • (IQI: 0.7 to 3.2, 38 studies)
Team-based Care and Improved Blood Pressure Control

![Graph showing the effect of team-based care on blood pressure control]

- Significant (p<0.05)
- Not Significant (p>0.05)
- Not Known
- 95% CI

33 studies
Median=12 pct pts
(IQR: 3.2, 20.8 pct pts)

Favors Intervention

Absolute percentage point change (95% CI) in the proportion of patients with controlled blood pressure
Team-based Care and Improved Blood Pressure Control

- Also effective in improving other CVD risk factors, including:
  - Diabetes (HbA1c and Blood Glucose levels)
  - Cholesterol (Total and LDL cholesterol)
- Teams with pharmacists: greater improvement in control
- Allow non-physician team members to modify regimen independent of the provider, or with provider approval or consultation: greater improvement in control
Strategies for establishing policy, environmental and systems-level interventions for management of hypertension

- Environmental interventions
  - Changes to economic, social, or physical environments
  - Making community resources available
  - Environment that permits healthier choices

Prev Chronic Dis 2008;5(3).
Accessed 23 October 2016
Summary: Changing the Paradigm for Improved Management of Hypertension

- Interventions
  - Provider
  - Patient
  - Team
  - Systems of care
  - Environment