Understanding the New ACC/AHA and JNC-8 Guidelines: Risk Assessment, Lifestyle, Hypertension and Cholesterol

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Understanding the New ACC/AHA and JNC-8 Guidelines

- Risk Assessment
- Lifestyle
- Hypertension
- Cholesterol

Validation of ASCVD Pooled Cohort Risk Equations – NEJM 2014

In this cohort of US adults for whom statin initiation may be considered based on the ACC/AHA Pooled Cohort risk equations

- observed and predicted 5-year atherosclerotic CVD risks were similar
- indicating that these risk equations were well calibrated in the population for which they were designed to be used,
- demonstrated moderate to good discrimination.

Muntner et al. JAMA March 2014

More adults eligible for statin treatment under the new ACC/AHA guideline:

- Statins: 43 million (37.5%) ➔ 56 million (48.6%)

Those who were reclassified upward as contrasted to those reclassified downward:

1) older
2) more men
3) higher systolic blood pressure,
4) had a significantly lower level of LDL-C
5) higher rate of obesity.

Pencina et al NEJM 2014

ASCVD Risk Calculator

New Threshold of 7.5% 10 yr risk for women and men

- Lifetime risk for lifestyle counseling and future treatment consideration

http://my.americanheart.org/professional/statements-guidelines/prevention-guidelines_UCM_457698_SubHomePage.jsp

No treatment at 4% risk; re-assess annually
ASCVD Risk Calculator
55 yo AA and White Women

Controversies – Risk Assessment
Criticism
• ASCVD risk “overestimates” risk in registry (Harvard Physician’s Study, Women’s Health (Nurses) Study
• Lifetime risk is 40% for essentially all persons!
• Use will increase the use of statin for primary prevention of ASCVD

Response
• Registries of convenience do not reflect US demographic/SES/ethnic diversity; study confirms improved risk prediction
• 40% of Americans die of CVD!
• ASCVD is the leading killer of Americans without a prior diagnosis of CVD

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Focus on Healthy Lifestyle
Two of the three guidelines presented at AHA were on lifestyle
Therapeutic lifestyle change remains the cornerstone of prevention of ASCVD
The cholesterol guidelines panel included three members with nutrition expertise including a co-chair of the lifestyle panel
The lifetime assessment of ASCVD risk from ages 20-79 is presented to help clinicians focus on lifestyle and risk factor improvement in those with elevated lifestyle but low 10 year ASCVD risk

Emphasis on healthy lifestyle
• For those 20-59 risk estimator provides lifetime risk estimate
• This is intended to drive discussions of greater adherence to heart-healthy lifestyle
• Part of risk discussion

Controversies – Lifestyle
Criticism
• Healthcare providers not trained/not compensated for therapeutic lifestyle change (TLC) counseling
• Patients rarely adherent to TLC; support not funded
• No randomized trial evidence to support TLC; recent weight loss trial in DM negative!

Response
• ACA has initiated some preventive measures
• Do we have the will to pass social smoking, food and physical activity legislation similar to Europe?
• Large, simple trials needed to advise public health guidelines.
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Comparison of JNC Guidelines

<table>
<thead>
<tr>
<th>JNC7</th>
<th>JNC8</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Nonsystematic literature review and expert opinion</td>
<td>- Systematic review</td>
</tr>
<tr>
<td>- Range of study designs</td>
<td>- Randomized, controlled trials (RCT) only</td>
</tr>
<tr>
<td>- No grading system for recommendations</td>
<td>- Graded recommendations</td>
</tr>
<tr>
<td>- Recommendations:</td>
<td>- Recommendations:</td>
</tr>
<tr>
<td>- Lifestyle modifications</td>
<td>- No specific lifestyle recommendations</td>
</tr>
<tr>
<td>- Initial therapy for HTN</td>
<td>- Initial therapy for HTN</td>
</tr>
<tr>
<td>- Compelling indications</td>
<td>- Racial, CKD, and diabetic subgroups addressed</td>
</tr>
<tr>
<td>- Addressed secondary HTN and resistant HTN</td>
<td>- Addressed three key questions</td>
</tr>
</tbody>
</table>

Comparison of JNC8 and IM HTN Algorithm: BP Goals

<table>
<thead>
<tr>
<th>JNC8</th>
<th>IM HTN Algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥ 60 years: &lt; 150/90</td>
<td>- Not addressed</td>
</tr>
<tr>
<td>General population: &lt; 140/90</td>
<td>- Grade A</td>
</tr>
<tr>
<td>Hypertension &amp; DM: &lt; 130/80</td>
<td>- Grade E (Grade A: DBP, age 30-59)</td>
</tr>
<tr>
<td>Hypertension &amp; DM: &lt; 140/80</td>
<td>- Grade E</td>
</tr>
<tr>
<td>Hypertension &amp; CKD: &lt; 140/90</td>
<td>- Grade E</td>
</tr>
</tbody>
</table>

Comparison of JNC8 and IM HTN Algorithm: Preferred Agents

<table>
<thead>
<tr>
<th>JNC8</th>
<th>IM HTN Algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>General population</td>
<td>- General population</td>
</tr>
<tr>
<td>- Thiazide, CCB, ACEI, ARB (Grade B)</td>
<td>- Thiazide Diuretic: HCTZ</td>
</tr>
<tr>
<td>Black population</td>
<td>- CCB or Thiazide (Grade B)</td>
</tr>
<tr>
<td>- Grade C for black patients with DM</td>
<td>- DM</td>
</tr>
<tr>
<td>- Thiazide, CCB, ACEI, ARB (Grade B)</td>
<td>- Thiazide, CCB, ACEI, ARB (Grade B)</td>
</tr>
<tr>
<td>CKD</td>
<td>- ACEI or ARB (Grade B)</td>
</tr>
</tbody>
</table>

Strategies to Dose Antihypertensive Drugs

- Titrate to max dose, then add a second drug
- Add a second drug before achieving max dose of the initial drug
- Start with 2 drugs at the same time
  - If SBP ≥ 160mmHg and/or DBP ≥ 100 mmHg
  - If SBP ≥ 20mmHg above goal and/or DBP ≥ 10mmHg above goal
- ***Consider scheduling follow-up with the Enhanced Care Clinic for titration of BP Meds
Controversies

- Recommendations not consensus – group members splinted/refused to sign off
- “No evidence” does not mean “Absence of Benefit” – how to handle subgroups including women, elderly, non-caucasian ethnicity with insufficient inclusion and therefore evidence
- Consequences of NIH-NHLBI getting out of the “Guideline business” – politics, controversy and public health

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NHLBI Charge to the Expert Panel

- Evaluate higher quality randomized controlled trial (RCT) evidence for cholesterol-lowering drug therapy to reduce ASCVD risk
  - Use Critical Questions (CQs) to create the evidence search from which the guideline is developed
  - RCTs and systematic reviews/meta-analyses of RCTs independently assessed for quality
  - Less expert opinion than in prior guidelines
  - Due to transfer of process to ACC-AHA for adjudication and implementation, guidelines included RCTs with major ASCVD outcomes until July 2013

Synopsis of Recommendations

1. Encourage adherence to a healthy lifestyle
2. Statin therapy recommended for adult groups demonstrated to benefit
3. Statins have an acceptable margin of safety when used in properly selected individuals and appropriately monitored
4. Engage in a clinician-patient discussion before initiating statin therapy – especially for primary prevention in patients with lower ASCVD risk

5. Use the newly developed pooled cohort equations for estimation 10-year ASCVD risk
6. Initiate proper intensity of statin therapy
7. Evidence is inadequate to support treatment to specific LDL-C or non-HDL-C goals
8. Regularly monitor patients for adherence to lifestyle and statin therapy
4 Statin Benefit Groups

1. Secondary Prevention - 40 to 75 yrs
   LDL-C: 70-189 mg/dL

   Rx: Optimal benefit with high intensity statins → lower LDL-C ≥ 50%
   Use moderate intensity if age >75 or can't tolerate high intensity

4. Primary Prevention - 40 to 75 yrs
   LDL-C: 70-189 mg/dL

   Rx: Moderate intensity or high intensity statin

Statin Rx not automatic, requires clinician-patient discussion

Intensity of Statin Therapy

High- Moderate- and Low-Intensity Statin Therapy [Used in the RCTs reviewed by the Expert Panel]*

<table>
<thead>
<tr>
<th>Statin Type</th>
<th>High-Intensity</th>
<th>Moderate-Intensity</th>
<th>Low-Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atorvastatin (40-80 mg)</td>
<td>Daily dose lowers LDL-C on average, by approximately ≥50%</td>
<td>Daily dose lowers LDL-C on average, by approximately ≥35%</td>
<td>Daily dose lowers LDL-C on average, by &lt;35%</td>
</tr>
<tr>
<td>Rosuvastatin 20 (40) mg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Individual responses to statin therapy varied in the RCTs and should be expected to vary in clinical practice.

Controversies – Cholesterol

14% ↓ mortality
27% ↓ CHD (fatal and non fatal) events
22% ↓ in stroke (fatal and non fatal)
33% ↓ in nonfatal MI
38% ↓ in revascularization

18% ↓ in diabetes (2.8% on statin vs. 2.4% controls)
No significant increase in short-term risk of:
- Muscle adverse events
- Liver adverse events
- Cancer, memory loss
- Hemorrhagic stroke


CVD Risk Reduction vs New Diabetes Mellitus Risk

Moderate & High Intensity Statins

Statin Effects on Major Vascular Events

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Events [%] Treatment</th>
<th>Events [%] Control</th>
<th>Rate Ratio (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-fatal MI</td>
<td>2061 (4-4)</td>
<td>2706 (6-2)</td>
<td>0.74 (0.75 - 0.79)</td>
</tr>
<tr>
<td>CHD death</td>
<td>1548 (3-4)</td>
<td>1960 (4-4)</td>
<td>0.81 (0.75 - 0.87)</td>
</tr>
<tr>
<td>Any major coronary event</td>
<td>3337 (7-4)</td>
<td>4420 (9-8)</td>
<td>0.77 (0.74 - 0.80)</td>
</tr>
<tr>
<td>CABG</td>
<td>713 (3-3)</td>
<td>1006 (4-7)</td>
<td>0.75 (0.69 - 0.82)</td>
</tr>
<tr>
<td>PTCa</td>
<td>510 (2-4)</td>
<td>658 (3-1)</td>
<td>0.79 (0.70 - 0.89)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>1397 (3-1)</td>
<td>1770</td>
<td>0.76 (0.69 - 0.84)</td>
</tr>
<tr>
<td>Any coronary revascularisation</td>
<td>2620 (5-8)</td>
<td>3434 (7-6)</td>
<td>0.76 (0.73 - 0.80)</td>
</tr>
<tr>
<td>Hemorrhagic stroke</td>
<td>105 (2-0)</td>
<td>99 (2-2)</td>
<td>1.05 (0.73 - 1.41)</td>
</tr>
<tr>
<td>Presumed ischemic stroke</td>
<td>1235 (2-8)</td>
<td>1518 (3-4)</td>
<td>0.81 (0.74 - 0.89)</td>
</tr>
<tr>
<td>Any stroke</td>
<td>1340 (3-0)</td>
<td>1617 (3-7)</td>
<td>0.83 (0.78 - 0.88)</td>
</tr>
<tr>
<td>Any major vascular event</td>
<td>6354 (14-1)</td>
<td>7994 (17-8)</td>
<td>0.79 (0.77 - 0.81)</td>
</tr>
</tbody>
</table>

CTT. Lancet 2013;371: 117-125

Favors statin

9/11/2014
Understanding the New ACC/AHA and JNC-8 Guidelines

- **Risk Assessment** – validated and ready for use
- **Lifestyle** – good ideas but not evidence based
- **Hypertension** – may harm women and elderly
- **Cholesterol** – strong evidence and ready for use