Introduction

• The International Guidelines 2000 Conference on CPR and ECC was the first international conference on guidelines for Cardiopulmonary Resuscitation (CPR) and Emergency Cardiac Care (ECC).

• The International Guidelines 2000 Conference marked an international collaboration of the American Heart Association (AHA) and International Liaison Committee on Resuscitation (ILCOR).

Objectives of the International Guidelines 2000 Conference

• Create a consensus document to explain the development of evidence-based guidelines.

• Review and revise recommendations from past conferences on the basis of scientific evidence that had accumulated since the previous guidelines were instituted.

• Review and recommend changes in methods for teaching ECC, Basic Life Support (BLS), Pediatric Advanced Life Support (PALS), and Advanced Cardiovascular Life Support (ACLS).

• Promulgate valid, widely acceptable international resuscitation guidelines based on international science and produced by international resuscitation experts.
Evidence-Based Goals

- Evaluate safety and effectiveness of approaches for CPR/ECC.
- Acknowledge the ineffectiveness of some traditional approaches (not supported by evidence-based review).
- Include treatments that survive intensive, evidence-based evaluation.

Evidence-Based Review

- A systematic method to identify, evaluate, and appraise scientific publications to propose needed changes.
- All proposed changes were reviewed for:
  - Scientific accuracy
  - Safety
  - Cost
  - Effectiveness
  - Teachability

Evidence-Based Revisions

- Changes were based on a four-step process:
  - Gather evidence
  - Determine level of evidence
  - Assess quality of evidence
  - Make a class recommendation
- Changes to existing guidelines occurred for any of three reasons:
  - Lack of evidence to confirm effectiveness
  - Additional evidence to suggest harm or ineffectiveness
  - Evidence that superior therapies have become available
- Changes were facilitated by the ECC Evidence-Based Worksheet (Table 1).
**Table 1**

**Summary of AHA ECC Evidence-Based Worksheet**

**Step 1: State the Proposal**

- **Step 1A:** Refine the questions
- **Step 1B:** Gather the evidence

**Step 2: Assess the Quality of the Evidence (Studies)**

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prospective, randomized controlled trial (RCT), $P &lt; 0.05$</td>
</tr>
<tr>
<td>2</td>
<td>Neutral RCT</td>
</tr>
<tr>
<td>3</td>
<td>Prospective, nonrandomized observational study with control</td>
</tr>
<tr>
<td>4</td>
<td>Retrospective, nonrandomized observational study with control</td>
</tr>
<tr>
<td>5</td>
<td>Case series; no control</td>
</tr>
<tr>
<td>6</td>
<td>Animal/mechanical model</td>
</tr>
<tr>
<td>6A</td>
<td>Higher quality studies</td>
</tr>
<tr>
<td>6B</td>
<td>Less powerful design</td>
</tr>
<tr>
<td>7</td>
<td>Reasonable extrapolation from data gathered for other purposes</td>
</tr>
<tr>
<td>8</td>
<td>Common sense; current practice</td>
</tr>
</tbody>
</table>

- **Step 2A:** Sort studies by level
- **Step 2B:** Assess quality of research design/methods *(excellent, good, fair, poor, unacceptable)*
- **Step 2C:** Determine direction of results and statistics *(support proposal, neutral, oppose proposal)*
- **Step 2D:** Cross-tabulate by Level, Quality, and Direction

**Step 3: Determine Class of Recommendation**

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
</table>
| I     | Excellent  
definitely recommended; proven efficacy and effectiveness |
| IIa    | Acceptable/useful  
good evidence; safe, clinically useful |
| IIb    | Acceptable/useful  
fair evidence; safe, clinically useful |
| III    | Not acceptable  
not clinically useful; may be harmful |
| Indeterminate | No recommendation  
minimal evidence; preliminary research stage |

**Summarize Rationale for Proposal**

**Propose Experts for Evidence-Based Conference or Guidelines 2000 Conference**
Persistent or recurrent VF/VT

Resume attempts to defibrillate
1 x 360 J (or equivalent biphasic) within 30 to 60 seconds

Consider antiarrhythmics:
amiodarone (IIb), lidocaine (Indeterminate), magnesium (IIb if hypomagnesemic state), procainamide (IIb for intermittent/recurrent VF/VT).
Consider buffers.

Resume attempts to defibrillate

Adapted from American Heart Association.¹
**Evidence-Based Recommendations**

- Amiodarone received a class-IIb recommendation (acceptable and useful) for both persistent and intermittent/recurrent VF/pulseless VT.

- Lidocaine received a class-indeterminate rating based on lack of evidence to confirm usefulness.

- Procainamide received a class-indeterminate rating for persistent VF/pulseless VT but did receive a IIb classification for intermittent/recurrent VF/pulseless VT only.

IV amiodarone is indicated for initiation of treatment and prophylaxis of frequently recurring ventricular fibrillation and hemodynamically unstable ventricular tachycardia in patients refractory to other therapy. IV amiodarone can also be used to treat patients with VT/VF for whom oral amiodarone is indicated, but who are unable to take oral medication.

IV amiodarone is contraindicated in patients with cardiogenic shock, marked sinus bradycardia, and second- or third-degree AV block in the absence of a functioning pacemaker.

IV amiodarone should be administered only by physicians who are experienced in the treatment of life-threatening arrhythmias, who are thoroughly familiar with the risks and benefits of amiodarone therapy, and who have access to facilities adequate for monitoring the effectiveness and side effects of treatment.

Hypotension is the most common adverse effect seen with IV amiodarone and may be related to the rate of infusion. Hypotension should be treated by slowing the infusion or with standard therapy: vasopressor drugs, positive inotropic agents, and volume expansion.

In clinical trials, the most important treatment-emergent adverse effects were hypotension (16%), bradycardia (4.9%), liver function test abnormalities (3.4%), cardiac arrest (2.9%), VT (2.4%), congestive heart failure (2.1%), cardiogenic shock (1.3%), and AV block (0.5%).

Please see Prescribing Information available at this display.

**REFERENCES**