ECC

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Handbook of Emergency Cardiovascular Care for Healthcare Providers

Summary of Revisions for 2004

This document provides a summary of new information and key revisions that appear in the ECC Handbook, published 6/04. This is not an all-inclusive list. Page numbers listed refer to the pages in the new Handbook where the stated information is found.

1. **AEDs and Children:** Information on AEDs and children 1 to 8 years of age updated throughout the publication.

2. **Lay Rescuer AED Programs:** Replaced term "Public Access Defibrillation" with "Lay Rescuer AED Programs (page 4)

3. **5 Quadrads Approach:** Primary-Secondary Survey replaced with the 5 Quadrads Approach from ACLS for Experienced Providers (page 5)

4. **Atrial Fibrillation and Flutter and Wolff-Parkinson-White Syndrome:** (pages 14 & 15) Two tables from the ACLS Reference Text, with recent updates
   - For converting atrial fibrillation, duration 48 hours or less:
     - — DC cardioversion is recommended as Class I and "or Amiodorone (IIb) or" was deleted.
     - — Under "Ventricular Function Preserved" the list was changed to procainamide, amiodarone, ibutilide, flecainide*, propafenone*, in that order (footnote says "*Parenteral form not available in the United States").
   - Under "Ventricular Function Impaired", amiodarone only drug that appears as Class IIb (changed from IIa).

5. **Acute Pulmonary Edema, Hypotension, Shock Algorithm** (page 21): In the last box, "Further Diagnostic and Therapeutic Considerations" three additional considerations were added:
   - identify and treat reversible causes
   - surgical interventions
   - additional drug therapy.

6. **Stroke:** Revised checklist for the use of tPA in acute ischemic stroke (page 26); new tables from the ACLS Reference Text for the emergency treatment of hypertension in ischemic and hemorrhagic strokes (page 27)

The tPA checklist from the *ACLS Reference Text* replaces the old checklist with the following changes

- The following relative contraindications are now contraindications: known arteriovenous malformation, neoplasm, or aneurysm; witnessed seizure at stroke onset; and systolic pressure remaining over 185 mm Hg at the time treatment should begin.
- The relative contraindication, "Recent myocardial infarction (within previous 21 days)" was changed to "3 months."
- A note was added to the top of the checklist: "The following checklist includes FDA-approved indications and contraindications for tPA administration for acute ischemic stroke. A physician with expertise in acute stroke care may modify this list."

7. **Stable Ventricular Tachycardia Algorithm:** New section describing the relationship between QT interval and heart rate and a new table, Maximum QT Interval (Upper Limits of Normal) for Men and Women Based on Heart Rate (pages 18 – 19)

8. **Electrical Cardioversion Algorithm:** Precaution to turn off oxygen or divert flow away from patient's chest when clearing before a shock (page 20)

9. **New section on The Acute Coronary Syndromes** –pages 28 - 50: This section was completely revised following the recommendations from the ACC/AHA 2002 Guideline Update for the Management of Patients With Unstable Angina and Non–ST-Segment Elevation Myocardial Infarction and the ACC/AHA Guideline for the Management of Patients With ST-Segment Elevation Myocardial Infarction, 2004 Update. New tables and figures taken from the ACLS Reference Text were also added to this section.

   Changes include

   - New terminology:
     - — ST-segment elevation myocardial infarction (STEMI) replaces Q-wave infarction
     - — Non–ST-segment elevation myocardial infarction (NSTEMI) replaces non–Q-wave infarction

   - Risk stratification and triage of patients into 3 groups based on 12-lead ECG and ST-segment deviation:
     - — ST elevation >1 mm in 2 or more contiguous leads or new or presumably new LBBB (BBB obscuring ST-segment analysis)
     - — ST depression ≥0.5 mm in 2 or more contiguous leads; marked symmetrical T-wave inversion in multiple precordial leads; or dynamic ST-T changes with pain

  - ST depression <0.5 mm; T-wave inversion or flattening in leads with dominant R waves; or normal ECG

- *Triple pharmacotherapy* for high-risk patients with ST-segment depression:
  - Aspirin (antiplatelet agent) or clopidogrel (if stent or aspirin allergy)
  - Glycoprotein IIb/IIIa inhibitors (planned cath and troponin positive)
  - Unfractionated heparin (UFH) or low-molecular-weight heparin (LMWH)

- Use of intravenous UFH in patients treated with nonselective fibrinolytic agents (streptokinase, APSAC) who are at increased risk for systemic emboli (large anterior MI, atrial fibrillation, known LV thrombus, or previous embolic event.)

- New tables and algorithms from ACLS Reference Text added: TIMI Risk Score for Patients With Unstable Angina and Non–ST-Segment Elevation MI; Risk Stratification and Treatment Strategies for Patients With Unstable Angina and Non–ST-Segment Elevation MI; Likelihood of Ischemic Etiology and Short-Term Risk

10. Recommendations for Critical Incident Stress Debriefing: Deleted

11. ACLS Drugs and Electrical Therapy Section: New recommendations on aspirin, clopidogrel, fibrinolytics, heparin, and nitroglycerin

- **Aspirin:** immediate general treatment dose changed to 162 to 325 mg

- **Clopidogrel:** new drug. Should be given to high-risk ST-segment depression or dynamic T-wave inversion (NSTEMI or unstable angina) if an in-hospital conservative approach is planned or catheterization and PCI are planned and the risk of bleeding is not high. Also recommended for patients who have undergone catheterization with planned PCI and as an antiplatelet therapy, especially for patients who have an aspirin allergy or who have a coronary stent. Recommended dose: 300 mg PO, followed by 75 mg PO q day for 1 to 9 months; full effects will not develop for several days. Precautions: do not administer to patients with active pathologic bleeding or patients who have received a CABG within 7 days. Use with caution in patients with hepatic or renal impairment.

- **Fibrinolytics:** recommended administration of heparin and aspirin conjunctively with reteplase, recombinant

- **Heparin:** Bivalirudin replaces desirudin and leprudin as a direct antithrombin alternative for heparin administration for use with patients

whose platelet counts fall below 100 000 or for patients with a history of heparin-induced thrombocytopenia.

- **Nitroglycerin contraindications:** hypotension (SBP <90 mm Hg), severe bradycardia (<50 bpm), or tachycardia (>100 bpm), or use of phosphodiesterase inhibitor for erectile dysfunction (sildenafil within 24 hours or tadalafil with 48 hours). Use with caution if at all for borderline hypotension (90 to 100 mm Hg) or borderline bradycardia (<60 bpm). Use with extreme caution in patients who may have RV infarction.

12. **Cardiotoxic Drug Overdoses:** New tables for useful calculations and formulae, treatment sequence for hyperkalemia, and cardiotoxic drugs and drug-induced emergencies and treatments and contraindications were added from the ACLS Reference Text. (page 72 - 76)

13. **Adult RSI Protocol:** A new pre-event equipment checklist for tracheal intubation and revised protocol and tables for RSI were added. (page 77)

14. **Newborn Resuscitation Section:** Rearranged and new table added, "Medications Used in Resuscitation of the Newborn" (page 81)

15. **Color-Coded Resuscitation Tape:** The Broselow color-coded tape updated to match the 2002 edition (page 97)

16. **Preparation of Standard Infusions ("Rule of 6's"):** Deleted

17. **Rapid Sequence Intubation:** New table comparing adult and pediatric RSI steps (page 90)

18. **RSI in children:** Two drugs added to list: glycopyrrolate and propofol

19. **Treatment of Septic Shock:** New algorithm from the PALS Provider Manual added (page 93)

20. **Use of biphasic waveforms in children:** Information on when use of biphasic waveforms is acceptable. (pages 101 and 102)

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