Cutting Edge EP Interventions and Novel Device Therapies

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Brief Outline

• New options for AF patients at risk for TE
• New development in pacemakers
• Next steps in nonpharmacologic management of AF
• Pushing the frontiers in ablation

Courtesy Dr. Dmitry Chuprun
CHA\textsubscript{2}DS\textsubscript{2}-VASc • Congestive heart failure
• Hypertension
• Age \( \geq 75 \) years
• Diabetes mellitus
• Stroke/TIA/TE
• Vascular disease
• Age 65-74 years
• Sex category (i.e., female)

HAS-BLED • Hypertension
• Abnormal renal/liver function
• Stroke
• Bleeding tendency
• Labile INRs
• Age > 65
• Drugs (ASA or NSAIDs) or alcohol
Percutaneous LAA Closure

- Epicardial
  - LARIAT

- Endocardial Three Currently Being Examined
  A. WATCHMAN device
  B. Amplatzer device
  C. WaveCrest device

WATCHMAN™ Clinical Data
**WATCHMAN™**
**FDA Approval**

Are at increased risk for stroke and systemic embolism based on CHADS2 or CHA2DS2-VASc scores and are recommended for anticoagulation therapy.

Are deemed by their physicians to be suitable for warfarin.

Have an appropriate rationale to seek a non-pharmacologic alternative to warfarin, taking into account the safety and effectiveness of the device compared to warfarin.

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**Watchman Implant**
AF Ablation

Cox Surgical MAZE III
Refractory/Permanent Atrial Fibrillation

AF Ablation

Maintenance of Sinus Rhythm

- 
  - Me (or minimal) heart disease
  - Dronedarone, Flecaïnide, Propafenone, Sotalol
  - Amiodarone, Dofetilide
  - Catheter ablation

- 
  - Hypertension
  - Substantial LVR
    - No
    - Yes
    - Amiodarone, Dofetilide, Sotalol
    - Catheter ablation

- 
  - Coronary artery disease
  - Dofetilide, Dronedarone, Sotalol
  - Amiodarone
  - Catheter ablation

- 
  - Heart failure
  - Amiodarone, Dofetilide
  - Catheter ablation
RHYTHMIA Mapping System

Canine RA Line of Block
Map, Ablate, Validate
OU 2011

Post AF Ablation Atrial Flutter
Implantable Device Complications

Pacemaker
Leadless Pacemaker

Micra™ Transcatheter

PACING SYSTEM

The Micra™ Transcatheter Pacing System is under investigational use only and is not CE marked or FDA approved.

Subcutaneous ICD
History

- Mr. VM is a 75 year old man from Cambodia who had been well for all his life.
- One night 12 years ago, his wife was awoken with his shaking in the middle of the night. Emergency Medical Service was called and they found Mr. VM to be in ventricular fibrillation.

History

- His ECG was noted to display ST segment elevation in the anterior precordial leads. An urgent cardiac catheterization revealed normal coronaries and preserved left ventricular function. Subsequently, an echocardiogram also showed no noted structural heart abnormalities.
Epicardial Access

Ablation Target
Ablation

Post Ablation

Cardiac Compania Trends (Dec-2011 to Feb-2013)

Treated VT/VF (4/day)

Jan-12/May-12/Aug-12/Jul-13/Nov-13/Jan-14/May-14
Thank you

- URMC Cardiac Electrophysiology
- 585-275-4775
VT Ablation: Considerations

- Refractory to medical therapy
- Benefits>Risks/Alternatives
  - Medical therapy, Transplant, LVAD, Complications
- 1-2 reproducible VT’s
- Hemodynamically stable
- Limited success
Ischemic Substrate Unstable VT
Thank you

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