Investor Relations Update: Tissue Ablation via Irreversible Electroporation (IRE)

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Co-Founder, President and CEO
Outline

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- Technology Summary
- Potential Applications
- Project Milestones
Overview

- Angiodynamics has acquired a platform technology called Irreversible Electroporation (IRE), which was discovered at The University of California Berkeley and exclusively Licensed to Oncobionic Inc. for development.

- The technology has the potential to be revolutionary or “game changing” in that it addresses many of the significant limitations of current focal tumor ablation technologies.

- This acquisition allows Angiodynamics to gain use of the technology beyond the distributor agreement that was established with Oncobionic in June, 2004.
Technology Summary
What is the technology?

- Oncobionic’s technology uses irreversible electroporation to ablate tissue non thermally, quickly, and controllably.

- Needle electrodes are placed by image guidance at locations at the edge or center of the target tissues.

- A very brief electrical field is then generated between the electrodes. The electrical field permanently opens the pores in the membranes of all the cells in the tumor and margin. The tumor dies over the next 24 hours. The healing process is swift (two weeks) and critical structures (Nerves, blood vessels, and ducts) are not destroyed.
Irreversible Electroporation: A new tissue ablation platform technology

- **Quickly**: Irreversible electroporation delivers full treatment to a targeted area in seconds

- **Controllably**: Irreversible electroporation is controlled with real time imaging (ultrasound), so treatment margins can be closely controlled.

- **Non Thermal**: Irreversible electroporation solves the problems that thermal based ablation technologies have of inconsistent treatment effects due to reliance on thermal conduction, and destruction of critical structures.

The two leading technologies currently in the market place are radio frequency (RF) and Cryoablation. Irreversible Electroporation (IRE) offers significant advantages over both of these technologies.
Irreversible Electroporation

Needle applicators deliver energy to targeted tissue.

Skin puncture with small diameter needles applicators deliver energy to targeted tissue.

Kill zone includes target tissue plus a "safety" margin of healthy tissue.
## Tissue Ablation Modalities

<table>
<thead>
<tr>
<th></th>
<th>IRE</th>
<th>RF</th>
<th>CRYO</th>
</tr>
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<tbody>
<tr>
<td>Speed</td>
<td>1 - 2 seconds</td>
<td>12 minutes</td>
<td>10 min x 2</td>
</tr>
<tr>
<td>Planning</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Real-time</td>
<td>Yes</td>
<td>Misleading</td>
<td>Misleading</td>
</tr>
<tr>
<td>Visualization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesion resolution</td>
<td>2 weeks</td>
<td>years</td>
<td>years</td>
</tr>
<tr>
<td>Heat sink effect</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Structure sparing</td>
<td>Yes</td>
<td>No</td>
<td>Limited</td>
</tr>
<tr>
<td>Probe size</td>
<td>20 gauge or less</td>
<td>14-17 gauge</td>
<td>14 gauge</td>
</tr>
<tr>
<td>Uniform destruction</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Immuno +</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
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</table>
Ablation Equipment – Probes and Generator
Current status of the development

- Extensive testing on prototypes in animal model
- Human cancer cell testing successfully completed
- Initial FDA submission on file
- 15+ patents and patent applications filed in the last 2 years
Potential Applications
Potential Applications

- Existing Tissue Ablation Market Opportunities for Irreversible Electroporation (IRE):
  - Focal Tumor Ablation for all soft tissues including:
    - Prostate
    - Liver
    - Lung
    - Bone
    - Brain
    - Breast
  - Benign Prostatic Hyperplasia (BPH)
  - Cardiac Arrhythmia Ablation (Potentially out licensed)
The company believes that the potential market in the USA for focal cancer therapy with IRE is in excess of $1.6 Billion per year.
The company estimates that the number of BPH patients seeking treatment in the USA is approximately 2.2 million representing a potential $4.4 billion market.

Procedure speed, control, preservation of critical structures (nerves, urethra) and lack of thermal injury are key areas of competitive advantage for irreversible electroporation (IRE).
Project Milestones
Milestones

**Milestone #1** – Signing of Distribution and Purchase Option Agreement.
Status – **Completed** on June 2004.

**Milestone #2** – Demonstration of prototype generator and probes.
Status – **Completed** January 2005.

**Milestone #3** – Large animal clinical testing.
Status – **Completed** May 2005

**Milestone #4** – Initial FDA 510k submission
Status – **Completed** January 2006

**Milestone #5** – FDA Clearance of products.
Status – Expected late calendar 2006

**Milestone #6** – Human use on prostate and liver cancers begins
Status – Expected mid calendar 2007

**Milestone #7** – Initial Marketing
Status – Expected mid calendar 2008
Published articles on Irreversible Electroporation

  
  [http://www.springerlink.com/content/wu65433k07211216/?p=36f2d622ac0a460ba87c60380ac3f2326pi=10](http://www.springerlink.com/content/wu65433k07211216/?p=36f2d622ac0a460ba87c60380ac3f2326pi=10)

  

  