Directional Atherectomy: Hong Kong Experience

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Disclosure

Speaker name:

...............Bryan Yan...............................................................

I have the following potential conflicts of interest to report:

Consulting: Cook Medical, Boston Scientific, Medtronic
Rationale for Atherectomy

- Less barotrauma & dissection
- Avoid stenting (leave nothing behind)
  - Long diffuse non-occlusive disease
  - Highly calcified lesion
  - ‘No stent zone’ (CFA, popliteal artery)
  - BTK lesion
- Modify & preserve vessel compliance
- Preserve bypass landing zones
- Vessel preparation before DCB (new)
Limitations of Atherectomy

- Distal embolization
- Need for embolic protection device (some)
- High costs (not reimbursed in Hong Kong)
- Time consuming
- Higher radiation exposure
**Devices & Data**

(*Available in HK*)

**Directional Atherectomy**
- Hawk family: SilverHawk, TurboHawk, HawkOne (Medtronic)
- Pathesis (Avinger)

**Orbital Atherectomy**
- Diamondback 360 (CSI)

**Rotational Atherectomy**
- JetStream (Boston Scientific)
- Phoenix (Volcano)

**Photoablation Atherectomy**
- Turbo-Elite & Turbo-Tandem (Spectranetics)

**Trials**

1. DEFINITIVE LE (n=800)
2. DEFINITIVE Ca\(^{2+}\) (N=133)
3. DEFINITIVE AR (n=121)
4. VISION (n=130)
5. OSASIS (n=124)
6. COMPLIANCE (n=50)
7. CALCIUM 360 (n=50)
8. Pathway PVD (n=172)
9. CELLO (n=65)
10. EXCITE ISR (n=250)
## Comparing Atherectomy Devices

<table>
<thead>
<tr>
<th></th>
<th>Directional</th>
<th>Rotational</th>
<th>Laser</th>
<th>Orbital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HawkOne</td>
<td>JetStream</td>
<td>Turbo-Elite</td>
<td>Diamondback 360</td>
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<tr>
<td></td>
<td>SilverHawk</td>
<td>Rotablator</td>
<td>Turbo-Power</td>
<td>Stealth 360</td>
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<tr>
<td></td>
<td>TurboHawk</td>
<td>Phoenix</td>
<td>Turbo-Tandem</td>
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<tr>
<td></td>
<td>Pantheris</td>
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<tr>
<td>Eccentric lesion</td>
<td>XX</td>
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<tr>
<td>Severe calcium</td>
<td>XX</td>
<td>X</td>
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<td>XX</td>
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<tr>
<td>Soft-medium plaque</td>
<td>XX</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Maximize lumen gain</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Thrombotic lesions</td>
<td></td>
<td>XX</td>
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<td></td>
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<tr>
<td>BTK lesions</td>
<td>X</td>
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<td>XX</td>
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<tr>
<td>ISR</td>
<td>(X)</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>CTO</td>
<td>X</td>
<td>X</td>
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<td>XX</td>
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Treat All Morphologies

Procedural Efficiency
Streamline procedural efficiency with improved crossing and cleaning capabilities

Note: Product claims for the HawkOne™ device are made in comparison to the TurboHawk™ platform.
HawkOne vs. TurboHawk

- More effective in calcium
  - 50% ↑ rotational speed (8k - 12k RPMs)
  - 4 contoured blades
- Improved engagement
- Improved deliverability
- Enhanced visualization
- Faster cleaning time
  - Preloaded distal flush tool
- Simplified device selection
## Simplified Device Selection from 7 to 4

### Current Devices

<table>
<thead>
<tr>
<th>TurboHawk™ High Efficiency Cutter</th>
<th>TurboHawk™ Smooth Cutter</th>
</tr>
</thead>
<tbody>
<tr>
<td>THS-LS-C</td>
<td>TH-LS-M</td>
</tr>
<tr>
<td>THS-LX-C</td>
<td>TH-LX-M</td>
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</tbody>
</table>

### NEW! Devices

<table>
<thead>
<tr>
<th>HawkOne™ System</th>
<th>Femoro-popliteal Artery</th>
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</thead>
<tbody>
<tr>
<td>H1-LS</td>
<td>7F</td>
</tr>
<tr>
<td>H1-LX</td>
<td>7F</td>
</tr>
<tr>
<td>H1-M</td>
<td>6F</td>
</tr>
</tbody>
</table>
Case 1: TurboHawk

CFA Pre

Post
+ DEB

SFA Pre

Post
Case 2: HawkOne

- Proximal SFA
- Focal
- Eccentric
- Calcified
DEB (aka. DAART)
DA+DCB combination therapy can overcome limitations of stand-alone SFA therapies

- DA mechanically recanalize the vessel without overstretch
- DA remove perfusion barrier for better & more homogenous drug uptake
- DA reduce likelihood of bailout stenting & preserve native vessel
The REALITY Study evaluates patient outcomes with adjunctive use of Medtronic HawkOne™ or Medtronic TurboHawk™ and Medtronic IN.PACT™ Admiral™ drug-coated balloon.

- The multi-center, international, prospective, single-arm study will enroll up to 250 subject at up to 15 sites.
- The study includes angiographic and duplex ultrasound core lab adjudication. Primary patency is assessed by duplex ultrasound at 12-months.
- Patients are followed up to 24 months to determine clinically driven target lesion revascularization (CD-TLR).
- The study is sponsored and managed by VIVA physicians with support from Medtronic through an external research project grant.

ClinicalTrials.gov Identifier: NCT02850107
Thank You

Prince of Wales Hospital, Friday 17th March
Directional Atherectomy Live Case Workshop
with
Dr. Lawrence Garcia & Prof. Bryan Yan
Directional Atherectomy: Hong Kong Experience

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