**Novel 3D Mapping System Reduced Procedure and Fluoroscopy Time for Persistent Atrial Fibrillation Ablation**

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**Discussion**

Use of the cryoballoon aided by Navik 3D for additional lesions beyond pulmonary vein isolation resulted in lower fluoroscopy use and procedure time for complex persistent AF cases.

**Navik 3D is a novel cardiac mapping system that allows localization of radiopaque structures.**

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**Background**

Navik 3D is a novel mapping system that can locate radiopaque objects including RF catheter and Cryoballoons in 3 dimensions. Pulmonary vein isolation, roof line, and posterior wall debulking can be performed using radiofrequency guided by electroanatomic mapping (EAM), or cryoballoon guided by Navik 3D, EAM, or both. We compared these approaches during consecutive complex ablations for persistent atrial fibrillation.

**Methods**

Pulmonary veins isolation (PVI) with cryoballoon ablation was performed in all 57 patients with persistent atrial fibrillation. Additional ablation lesions (posterior wall, roofline, or mitral isthmus) were guided by [Navik 3D (n=16), EAM (n=15) or both Navik 3D/EAM (n=26)], using [cryoballoon (n=18), RF (n=15) or both (n=24)]. Groups were matched for age, sex, prior ablation and antiarrhythmic use.

**Results**

<table>
<thead>
<tr>
<th>Procedure Data (Kruskal-Wallis analysis, Matched for age, sex, prior ablation, antiarrhythmics)</th>
<th>EAM (n=15)</th>
<th>EAM/Navik 3D (n=26)</th>
<th>Navik 3D (n=16)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total procedure time in minutes, median (interquartile range)</td>
<td>249 (211,266)</td>
<td>220 (182,262)</td>
<td>156.5 (146.5, 182)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Fluoroscopy dose in mGy, median (interquartile range)</td>
<td>821 (349,1428)</td>
<td>862.5 (576,1219)</td>
<td>277 (180.5, 349.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Fluoroscopy time in minutes, median (interquartile range)</td>
<td>51.6 (34.1,70)</td>
<td>51.2 (44.4,59.3)</td>
<td>33.7 (26.1,38.4)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Conclusion**

Navik 3D resulted in lower procedure time and radiation dose when used for complex ablations in persistent AF.

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**Disclosure Information**

Mohammed Djelmami-Hani is a minor share-holder in APN Health, LLC.