Papel da Ablação por Cateter das Taquicardias Ventriculares

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Sem conflito de interesse
Ventricular Arrhythmia in Chagas Disease

- PVB
- NSVT
- SVT
- VF
Sustained Ventricular Tachycardia In Chagas Disease

To prevent the event:
- **Amiodarone**
- **FEVE > 40%**

To change the substrate:
- **Ablation**

To interrupt:
- **ICD**
- **FEVE < 40%**
Predictors of Mortality in Patients with Chagas’ Cardiomyopathy and Ventricular Tachycardia Not Treated with ICDs

- N: 56 patients with Chagas’ cardiomyopathy; 31 men; mean age of 55 years;
- Mean LV EF = 42%, sustained VT (N:28), and NSVT (N: 28)
- No ICD implanted

Mean follow-up of 38 ±16 m (range, 1–61 months) 16 patients (29%) died 11 due to SCD and 5 from progressive heart failure

Sarabanda A and Marin-Neto JA. Pace 2011
Predictors of All-Cause Mortality for Patients with Chronic Chagas’ Heart Disease Receiving ICD Therapy

- N: 90 consecutive patients; Mean LV EF: 47± 13%; All patients received amiodarone (mean daily dose = 331.1 ± 153.mg); Betablocking agent was given to 37 (40%).

Univariate Analysis by Cox Proportional Hazards Model

<table>
<thead>
<tr>
<th>Predictor</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>0.336</td>
</tr>
<tr>
<td>Sex</td>
<td>0.912</td>
</tr>
<tr>
<td>LVEF</td>
<td>0.842</td>
</tr>
<tr>
<td>Type of arrhythmia</td>
<td>0.897</td>
</tr>
<tr>
<td>Time to first shock</td>
<td>0.983</td>
</tr>
<tr>
<td>Ventricular fibrillation</td>
<td>0.739</td>
</tr>
<tr>
<td>Ventricular tachycardia</td>
<td>0.615</td>
</tr>
<tr>
<td>Number of arrhythmic episodes</td>
<td>0.629</td>
</tr>
<tr>
<td>ATP</td>
<td>0.531</td>
</tr>
<tr>
<td>SHK</td>
<td>0.404</td>
</tr>
<tr>
<td>Total number of therapy delivered</td>
<td>0.636</td>
</tr>
<tr>
<td>DDD</td>
<td>0.745</td>
</tr>
<tr>
<td>VVI</td>
<td>0.524</td>
</tr>
<tr>
<td>VVIR</td>
<td>0.840</td>
</tr>
<tr>
<td>Number of shock per 30 days</td>
<td>0.000</td>
</tr>
</tbody>
</table>

LVEF = left ventricular ejection fraction; ATP = antiarrhythmia pacing; SHK = shock.

64 (71%) presented ICD therapy; SVT in 45 (70%), and VF in 19 (30%)

Survival probability in Chagas’ disease patients ICDs according to number of shocks per 30 days

Cardinaly-Neto et al. JCE 2007
Studies of Antiarrhythmic Drug Therapy for Sustained VT in Patients with Chagas Heart Disease

<table>
<thead>
<tr>
<th>Author</th>
<th>Pts. (n)</th>
<th>Age (years)</th>
<th>Males (%)</th>
<th>EF (%)</th>
<th>Antiarrhythmic Therapy</th>
<th>Follow-Up (months)</th>
<th>Total Annual Mortality (%)</th>
<th>SCD (%)</th>
<th>Non-SCD (%)</th>
<th>Recurrence of VT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanavacca et al.</td>
<td>35</td>
<td>50 ± 12</td>
<td>68</td>
<td>41 ± 14*</td>
<td>Amio</td>
<td>27 ± 20</td>
<td>5.1†</td>
<td>50</td>
<td>50</td>
<td>40</td>
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<tr>
<td>Rassi et al.</td>
<td>34</td>
<td>51 ± 11</td>
<td>62</td>
<td>NR</td>
<td>Amio / class I</td>
<td>127 ± 104</td>
<td>11.9</td>
<td>71</td>
<td>29</td>
<td>NR</td>
</tr>
<tr>
<td>Leite et al.</td>
<td>78</td>
<td>53 ± 10</td>
<td>58</td>
<td>49 ± 13</td>
<td>Amio / Sotalol</td>
<td>49 ± 33</td>
<td>8.8</td>
<td>50</td>
<td>50</td>
<td>56</td>
</tr>
<tr>
<td>Lorga Filho et al.</td>
<td>91</td>
<td>50 ± 9</td>
<td>66</td>
<td>51 ± 14†</td>
<td>Amio / class I</td>
<td>68 ± 64</td>
<td>11.0</td>
<td>61</td>
<td>39</td>
<td>NR</td>
</tr>
<tr>
<td>Sarabanda et al.</td>
<td>28</td>
<td>54 ± 11</td>
<td>64</td>
<td>42 ± 11</td>
<td>Amio</td>
<td>36 ± 17</td>
<td>10.7</td>
<td>78</td>
<td>22</td>
<td>NR</td>
</tr>
<tr>
<td>Cardinalli-Neto et al.</td>
<td>90</td>
<td>59 ± 11</td>
<td>68</td>
<td>47 ± 13</td>
<td>ICD + Amio</td>
<td>25 ± 19</td>
<td>16.6</td>
<td>7</td>
<td>93</td>
<td>71†</td>
</tr>
</tbody>
</table>

† Indicates statistical significance.
Simultaneous Endocardial and Epicardial RF Ablation of Chagas VT in pts with frequent ICD therapies

2 to 32 ICD shocks in 12 pts

n : ICD therapies

months

InCor - 2000
Sustained VT in Chagas Disease

Programmed Ventricular Stimulation
Sustained VT Induction = 90%

92%
Anatomic Substrate of Chagas VT

- LA
- LV
- Scar

Endocardial Fibers

SCAR

Epicardial Fibers
Transthoracic Epicardial Mapping of Chagas Ventricular Tachycardia

Sosa E, Scanavacca M, d’Ávila A, Pileggi F. JCE 1996
Epicardial Chagas VT

200 bpm

11024

LAO

PA

>1.5mV

<0.5mV

Incor 2008
Multiple and Unstable VTs
Substrate Mapping and Ablation
Anatomicall Substrate of Chagas Disease
Potential Electrophysiological Circuits Based on the 3D MRI Anatomical Channels


- **107 Procedures**
  
  - **86 Patients**
    - Age: 56.7 ± 14 years
    - Male: 61 (70.9%)
    - LVEF: Média - 36.9 ± 12.4%
    - Two ablations: 13 (14.8%) patients
    - Three ablations: 2 (2.3%) patients
    - Four ablations: 1 (1.1%) patients
  
  - **Epicardial ablation: 65 (60.7%)**
  
  - **Indications:**
    - Recurrent VT: 56.4%
    - VT Storm: 41%
    - Slow VT: 2.5%
    - Amiodarone: 600mg
    - Lidocaine: 27%

- **Chagas disease: 60 patients**
- **Ischemic: 17 patients**
- **Idiopathic: 13 patients**
- **ARVD: 12 patients**
- **Other: 5**
• N=60 (56.8%)
• Age: 58.8±9.6 years
• LVEF: 0.30 (0.28 a 0.39)
  – Two ablations: 8
  – Three ablations: 1
  – Four ablations: 1
• Epicardial ablation: 49 (81.7%)
• Procedure time: 330±143min
• Surgery:
  – Acute hemopericardium: 1
  – Late tamponate: 1
Management of VT in Chagas’ Disease
- Summary -

• **Chagas’s VT is a re-entrant**, scar-related tachycardia.

• **Amiodarone seems to be an effective therapy** in patients with preserved LVEF, but its effectiveness is dubious in patients with depressed cardiac function.

• **ICD is essential** to avoid sudden cardiac death in patients with sustained VT. However, frequent shocks might decrease its benefit.

• **Catheter ablation is an important** strategy to treat electrical storm and to prevent ICD's shocks.

• **Randomized studies are needed** to understand better the role of each specific therapy for VT in Chagas' heart disease.