Idiopathic Ventricular Tachycardia
Need for an Update in EHRA/HRS Consensus?

Arash Arya, M.D.
Department of Interventional Electrophysiology
Heart Center University of Leipzig
Disclosures:

NONE
Idiopathic Ventricular Tachycardia

Need for an Update in EHRA/HRS Consensus?

- OTVT
- ILVT
- Idiopathic PMVT/VF
- Other: PM, TA, MA
Outflow Tract
Ventricular Tachycardia
Outflow Ventricular Tachycardia

Outflow tract ventricular tachycardias (OT-VT) are the most common form of idiopathic VT which accounts for nearly 10% of all patients referred for evaluation of VT.

80-90% of cases OT-VT originates from the right ventricular outflow tract.

The OT-VT occurs more frequently in women.

usually occur between the ages of 20 and 50 years.

Three clinical manifestations: Frequent VPC; exercise (stress) induced VT and repetitive monomorphic VT at rest, all forms are adenosine sensitive.

NSVT which usually occurs as repetitive salvos of MMVT is frequent, comprising 60–92% of reported series.
Idiopathic Ventricular Tachycardia

Indications for Catheter Ablation

(1) for monomorph VT that is causing severe symptoms.

(2) for monomorph VT when AA drugs are not effective, not tolerated, or not desired.
idiopathic ventricular tachycardia (VT/VF) that is refractory to AA therapy when there is a suspected trigger that can be targeted for ablation.

All patients presenting with OT-VT require an evaluation for organic heart diseases or genetic syndromes associated with sudden death.

In the Brugada and long QT syndromes, and some rare idiopathic VF patients, closely coupled monomorphic ectopic beats from the LV or RV Purkinje network or from the RVOT may lead to PMVT/VF.
Case Presentation*

• B.M. female, 21 years old.

• considered completely healthy

• July 2010: during bicycle tour on a hot summer day, she developed syncope

• admission to a hospital; in the hospital she developed another syncope; no ECG monitoring at the time of syncope

• ECG. few extrasystoles; TTE, chest X-ray and laboratory analysis normal

*Courtesy of Valentina Romano, M.D. Heart Center University of Leipzig
Case Presentation

- syncope during physical / mental stress
- QTc-prolongation to > 600 ms
- grandfather died aged 36 (SCD)
- genetic test: KCNH2 Mutation (LQTS2)
- treatment with Betablocker
- patient received a defibrillator vest
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Outflow Ventricular Tachycardia

Catheter Ablation Treatment Strategy

- Suspected OT-VT
  - Pace Mapping
    - RVOT and PA
      - Yes: Successful?
      - No: LVOT including ASC and MA
        - Yes: Successful?
          - No: CS Mapping
            - Epicardial?
              - Subxyphoid

Arya et al. HERZ 2007
Outflow Ventricular Tachycardia
Outflow Ventricular Tachycardia

Abl

I
II
V1
V3

-25 ms
+30 ms
-80 ms

RVOT
LVOT

CS
LCC

LAO
RAO

D
Outflow Ventricular Tachycardia

Management

Medical

- Beta Blocker: 25 – 50%
- CCB: 20 – 30%
- Class IC: 25 – 50%
- Class III: >Class IC

Ablation

- Syncope*
- Fast VT>230 bpm
- PVC>15-20000 per day?
- TICMP
- Short coupled (R-on-T)*
- Symptomatic despite OMT
- Side effects (Med Tx)

* Malignant OTVT

Successful ablation can be expected in 90–95% of patients, with a recurrence risk of approximately 5%.
Idiopathic Intrafascicular Verapamil-Sensitive Reentrant VT
Overview

ILVT was first described by Zipes in 1979. Verapamil sensitivity of this VT was revealed by Belhassen in 1982. Ohe (1988) and Shimoike (2000) described the other two variants. This VT usually occurs in young male (60-80%) patients with structurally normal heart. Most patients experience exercise induced recurrent episodes of sustained VT.
Ablation Strategies

- RF ablation at tachycardia exit site, where the pace map 12-lead ECG displays a QRS configuration matching that during the tachycardia, is first described by Wen and colleagues.
- Nakagawa and his colleagues reported for the first time the significance of sharp PP in ablation of ILVT.
- Tsuchiya et al. described the significance of late DP in arrhythmia circuit and selection of ablation target site in this VT.

- Of 103 patients reported in 10 series, the overall success rate of ablation was 95%.

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CXR, 3 months after RFA
Conclusion

Idiopathic OTVT

Ablation should be considered as first line therapy in patients who presented with Syncope, Fast VT>230 bpm, TICMP, Short coupled (R-on-T), and frequent PVCs (>15-20.000/24h).

Successful ablation can be expected in 90–95% of patients, with a recurrence risk of approximately 5%. Therefore catheter ablation could be considered as first line therapy along medical therapy in other cases.
Thank you!