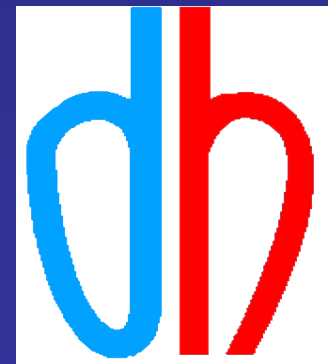


Hybrid therapy of VT

Priv.-Doz. Dr. med. Christof Kolb

German Heart Centre Munich



ICD-Shocks – friend and foe

ICD-shocks are live-saving

But:

- Associated with pain or loss of consciousness
- Feeling of dependency on the device
- Remind of possible premature end of life
- Reduce quality of life and treatment satisfaction
- Predictor of mortality

Hybrid therapy

Optimise

- treatment of underlying heart disease
- treatment of concomitant diseases
- heart failure therapy
- ICD programming
- initiate psychosomatic support if needed
- antiarrhythmic medication; how?
- go for VT ablation; when?

Antiarrhythmic medication

Which drug to use?

- Beta-blockers
- Sotalol
- Amiodarone
- Azimilide?
- Dofetilide?
- Celivarone?
- Ranolazine ??

Antiarrhythmic drugs are effective

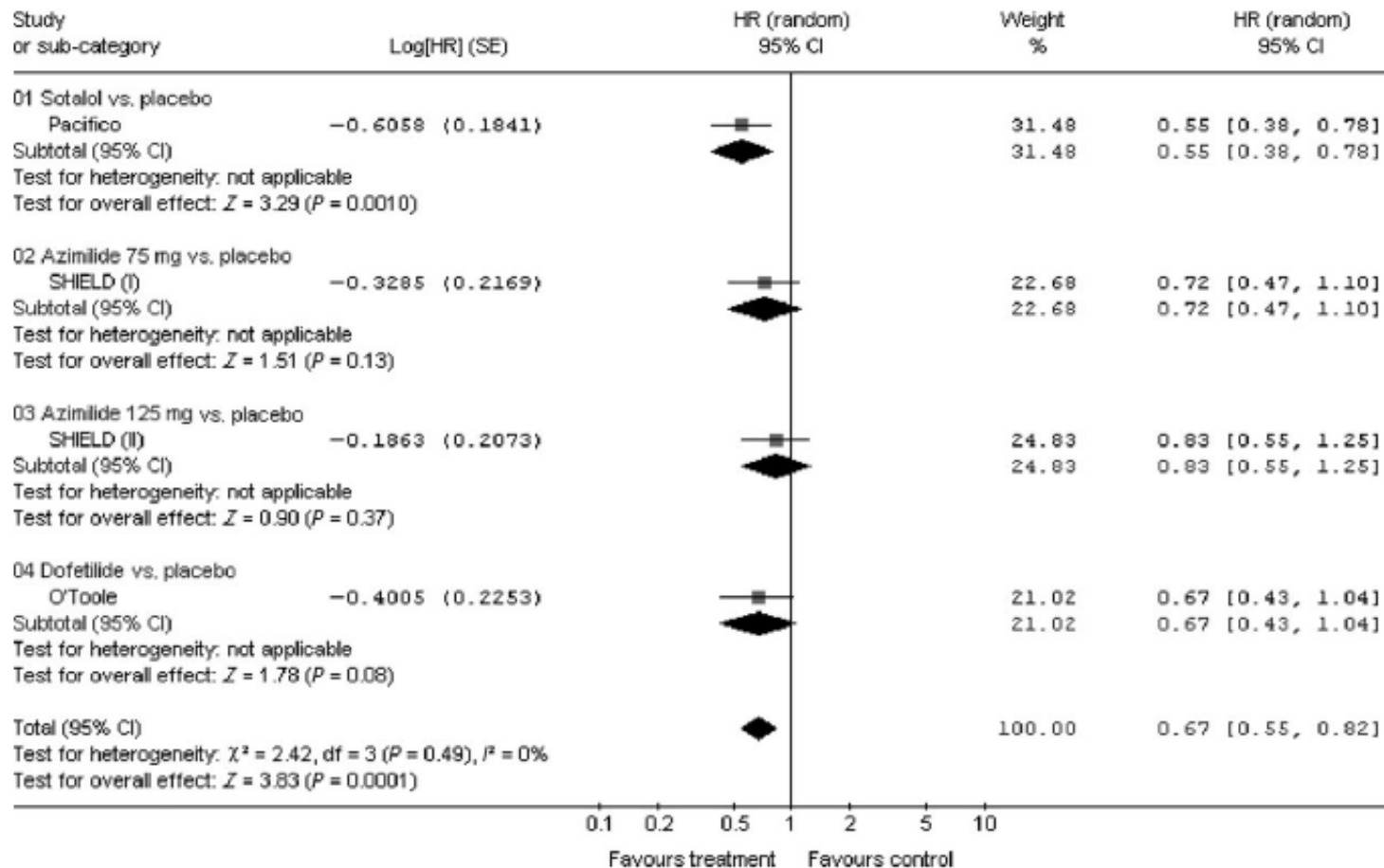
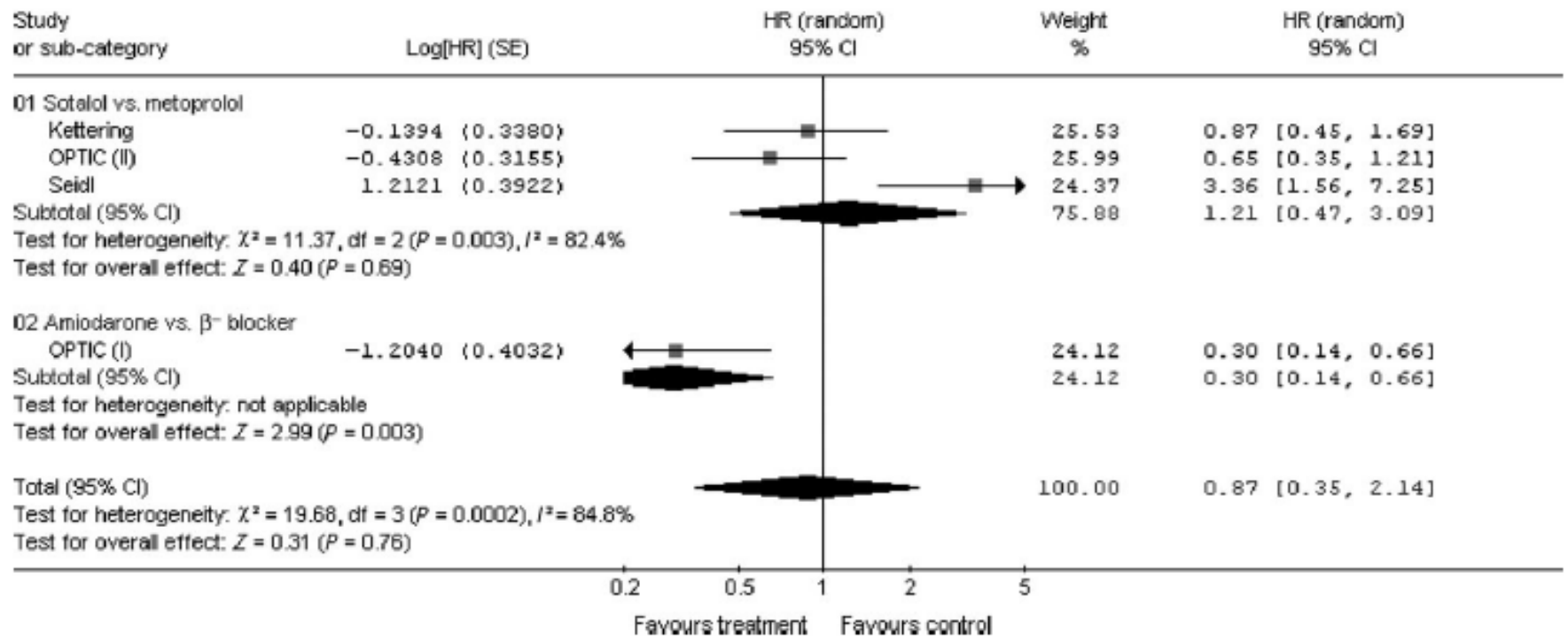


Figure 3 Risk of ICD shock therapy in those studies comparing Class III antiarrhythmics with placebo or non-antiarrhythmic therapy.

Comparison to Beta-Blockers



**Comparison of β -Blockers, Amiodarone Plus
 β -Blockers, or Sotalol for Prevention of Shocks
From Implantable Cardioverter Defibrillators
The OPTIC Study: A Randomized Trial**

Randomised 412 ICD recipients

Secondary prevention or

Primary prevention with inducible VT

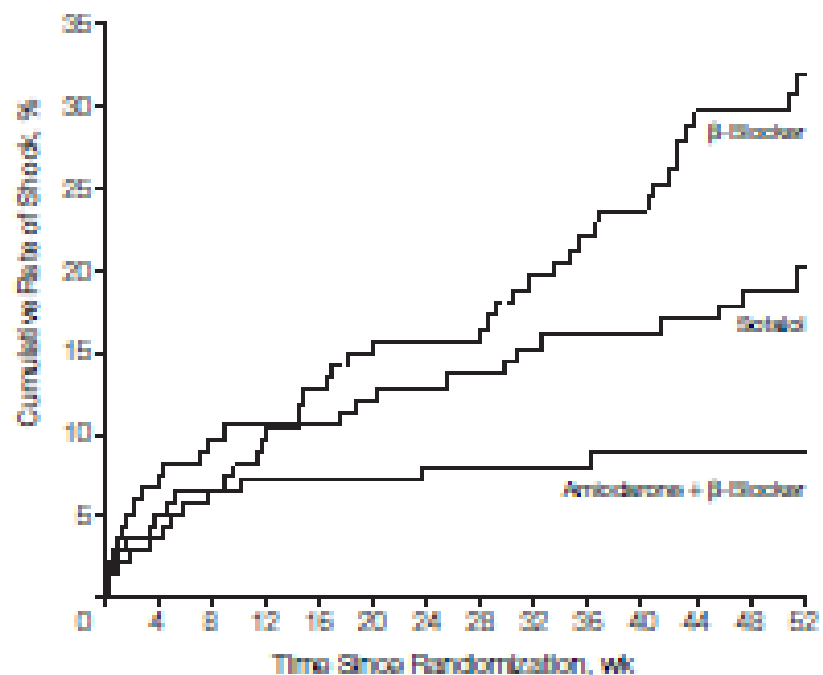
Randomised for

β -Blocker alone

Sotalol

Amiodarone plus β -blocker

Figure 2. Cumulative Rate of Shock for the 3 Treatment Groups by Time Since Randomization



No. at Risk					
β-Blocker	138	119	109	91	42
Sotalol	134	118	108	94	35
Amiodarone + β-Blocker	140	124	115	106	56

Log-rank $P < .001$ for amiodarone plus β -blocker vs β -blocker alone, log-rank $P = .02$ for amiodarone plus β -blocker vs sotalol alone, and log-rank $P = .055$ for sotalol vs β -blocker.

Old class III antiarrhythmics

Sotalol does not reduce shocks when compared to a simple β -blocker

Amiodarone in combination with β -blockers is most effective in reducing ICD shocks

Amiodarone use is restricted by side effects

New Drugs – Azimilide

Azimilide Decreases Recurrent Ventricular Tachyarrhythmias in Patients With Implantable Cardioverter Defibrillators

Igor Singer, MD, FACC,* Hussein Al-Khalidi, PhD,† Imran Niazi, MD, FACC,‡
Patrick Tchou, MD, FACC,§ Tony Simmons, MD, FACC,|| Richard Henthorn, MD, FACC,¶
Michael Holroyde, PhD,† Jose Brum, MD†

Azimilide Reduces Emergency Department Visits and Hospitalizations in Patients With an Implantable Cardioverter-Defibrillator in a Placebo-Controlled Clinical Trial

Paul Dorian, MD, FACC,* Hussein R. Al-Khalidi, PhD, FAHA,†
Stefan H. Hohnloser, MD, FACC,‡ Jose M. Brum, MD, MSc,† Preston M. Dunnmon, MD, FACC,†
Craig M. Pratt, MD, FACC,§ Michael J. Holroyde, PhD,† Peter Kowey, MD, FACC,||
on behalf of the SHIELD (SHock Inhibition Evaluation with AzimiLiDe) Investigators

Reduces appropriate ICD discharges when compared to placebo and

Decreases emergency department visits and hospitalisations

No comparison to β -blocker or amiodarone available

New Drugs – Celivarone

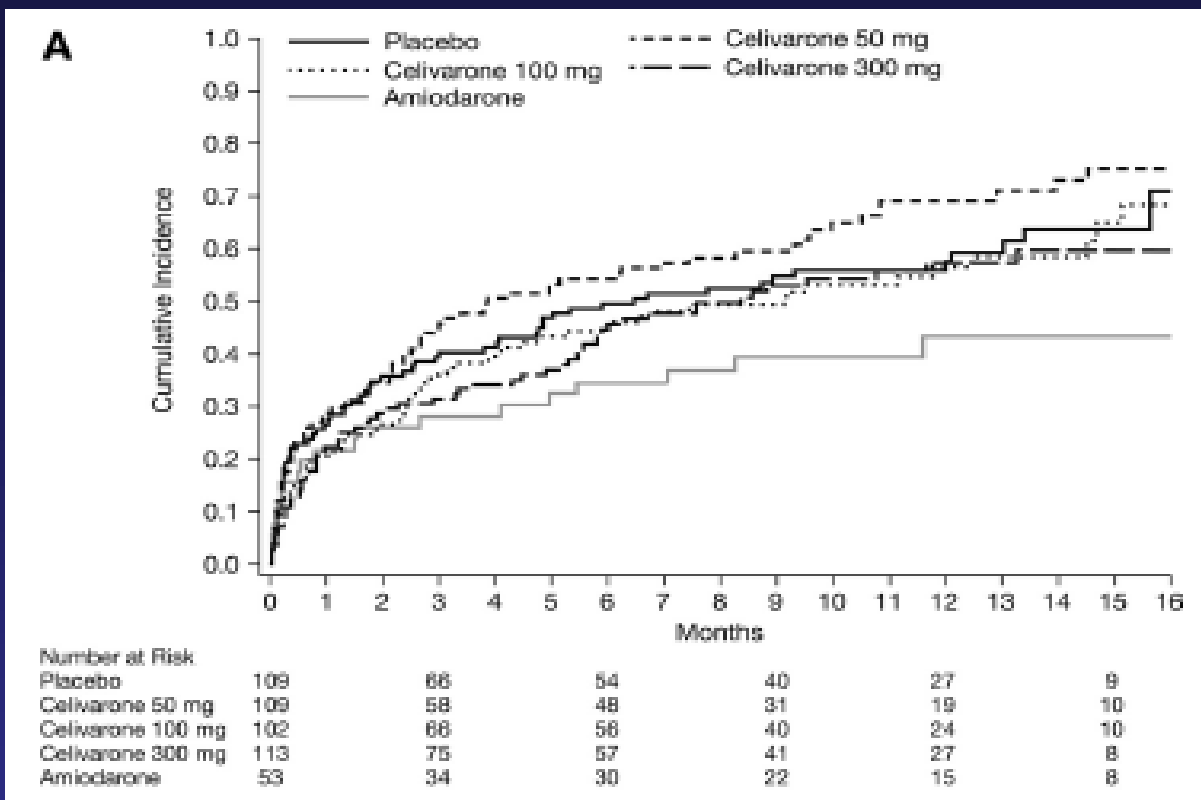
**Efficacy and Safety of Celivarone, With Amiodarone as
Calibrator, in Patients With an Implantable
Cardioverter-Defibrillator for Prevention of Implantable
Cardioverter-Defibrillator Interventions or Death
The ALPHEE Study**

Randomised 486 ICD recipients after VT/VF for

Celivarone in three dosages

Amiodarone

Placebo



Primary endpoint: time to recurrence of VT/VF

Celivarone was as effective as placebo

Amiodarone significantly better than celivarone

New Drugs – Dofetilide and Ranolazine

Dofetilide developed for the treatment of atrial fibrillation
2 publications (2011+2012, n=48): ICD interventions were reduced in patients otherwise drug-refractory for VT/VF

Ranolazine developed as antianginal and antiischemic drug

Series of 12 patients (2011): Reduction of ICD interventions in patients with recurrent VT/VF despite antiarrhythmic medication or VT ablation

VT-Ablation?

Prophylactic Catheter Ablation for the Prevention of Defibrillator Therapy

Vivek Y. Reddy, M.D., Matthew R. Reynolds, M.D., Petr Neuzil, M.D., Ph.D., Allison W. Richardson, M.D.,
Milos Taborsky, M.D., Ph.D., Krit Jongnarangsin, M.D., Stepan Kralovec, Lucie Sediva, M.D.,
Jeremy N. Ruskin, M.D., and Mark E. Josephson, M.D.

Randomised 128 patients after VT/VF

Prophylactic ablation of VT plus ICD

ICD implantation

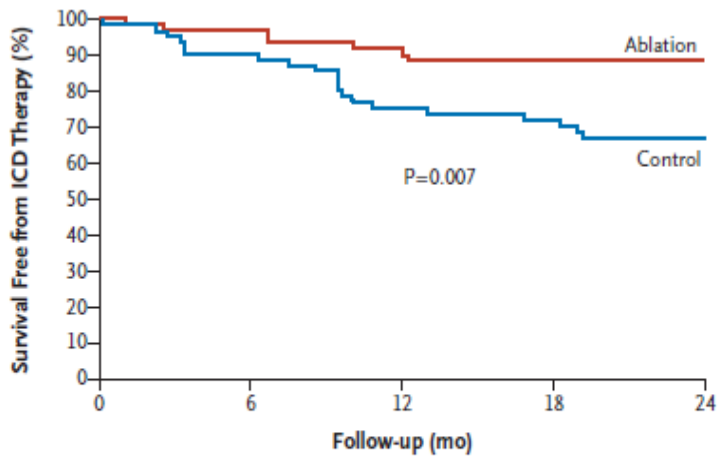
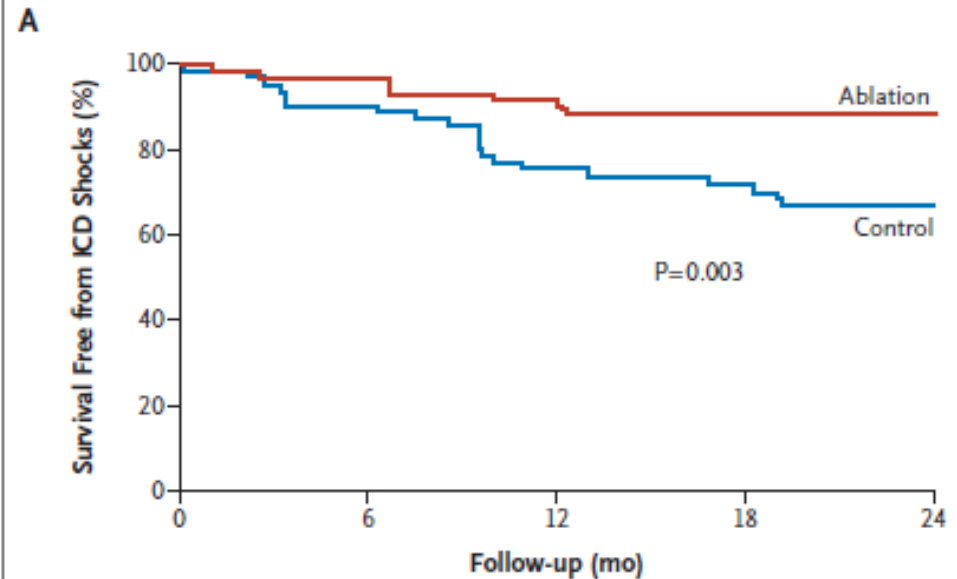


Figure 1. Kaplan–Meier Estimate of the Primary End Point of Survival Free from ICD Therapy.

ICD denotes implantable cardioverter–defibrillator.



Significant reduction in survival free from ICD therapy and survival free from ICD shock

Catheter ablation of stable ventricular tachycardia before defibrillator implantation in patients with coronary heart disease (VTACH): a multicentre randomised controlled trial

Karl-Heinz Kuck, Anselm Schaumann, Lars Eckardt, Stephan Willems, Rodolfo Ventura, Etienne Delacrétaz, Heinz-Friedrich Pitschner, Josef Kautzner, Burghard Schumacher, Peter S Hansen, for the VTACH study group*

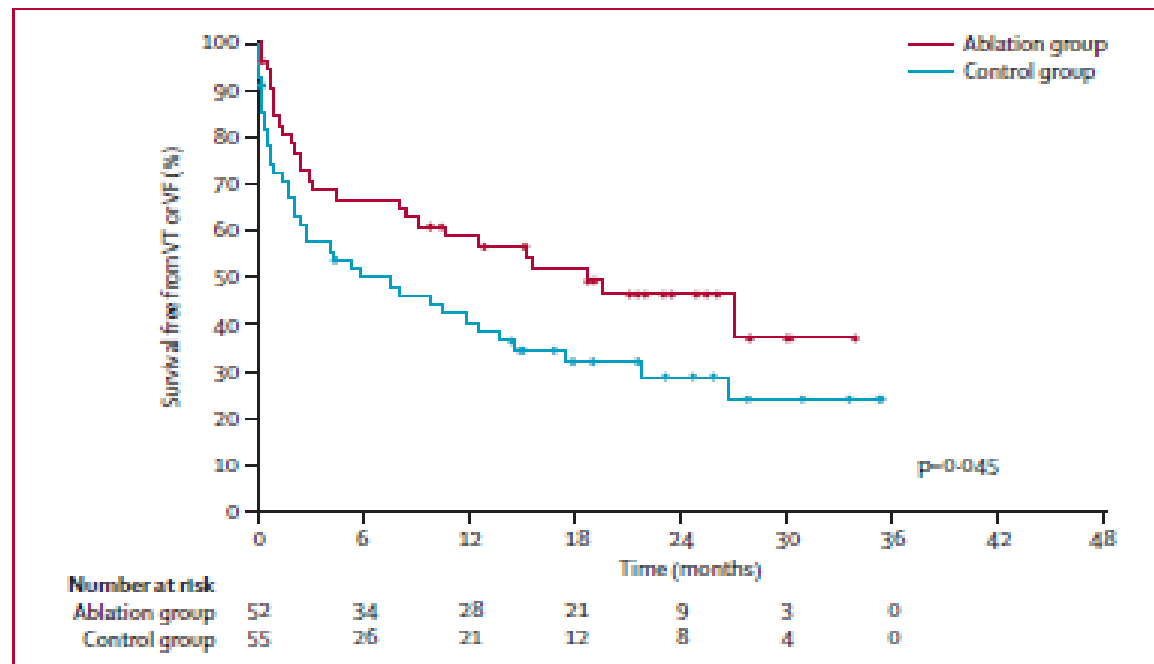


Figure 2: Kaplan-Meier curves for the primary endpoint

Estimates for survival free from ventricular tachycardia (VT) or ventricular fibrillation (VF). Censored patients are indicated by dots. The p value was calculated by log-rank test.

Conclusion

Hybrid therapy with drugs or ablation ?

- β -blocker as standard therapy
- Amiodarone or VT-ablation can be used adjunctively
- Other antiarrhythmics only after careful consideration
individually indicated

For primary prevention:

no evidence of benefit of adjunctive therapy

Conclusion

Hybrid therapy with drugs or ablation ?

After single occurrence of VT

All the three are warranted

watchful waiting, amiodarone, ablation

After multiple VT episodes

Amiodarone indicated

Effective and practically everywhere available

VT ablation to be considered

In patients with amiodarone intolerance

In IHD and monomorphic VT

With 3D navigation systems and experienced staff