

Long-term Cardiac Arrhythmias recorded by Insertable Loop Recorders in Patients with depressed Left Ventricular Function after Acute Myocardial Infarction

Cardiac Arrhythmias and Risk Stratification after Myocardial infarction

*PE Bloch Thomsen, MD, PhD
Univ. of Copenhagen, Denmark
pebt@geh.regionh.dk*

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ACC08 Late Breaker; embargoed until 1 April 2008

Disclosures

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CARISMA investigators

European multicenter, prospective, observational study

Principal investigators: H. Huikuri, Finland, PE Bloch Thomsen, Denmark

P. Raatikainen	University of Oulu, Finland
R.M. Joergensen	University of Copenhagen, Denmark
J. Hartikainen	University of Kuopio, Finland
V. Virtanen	University of Tampere, Finland
J. Boland	Hopital Citadelle, Liège, Belgium
O. Anttonen	Paijat-Hame Hospital, Lahti, Finland
L.A.V. Boersma	St. Antonius Hospital, Nieuwegein, Netherlands
E.S. Platou	University of Oslo, Norway
E. Stoupel	Hopital Erasme, Brussels, Belgium
J. Rokkedal, N. Hoest	Amtssygehuset Glostrup, Denmark

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CARISMA – Objective 1

Assess the predictive value of electrophysiologic testing and non-invasive screening tests for life-threatening tachyarrhythmia performed at 6-weeks post-AMI

(HRS, Hot Line Session May 10, 2007)

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CARISMA – Objective 2

Document the incidence and assess the prognostic significance of cardiac arrhythmias obtained from an insertable ECG loop recorder

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Inclusion criteria

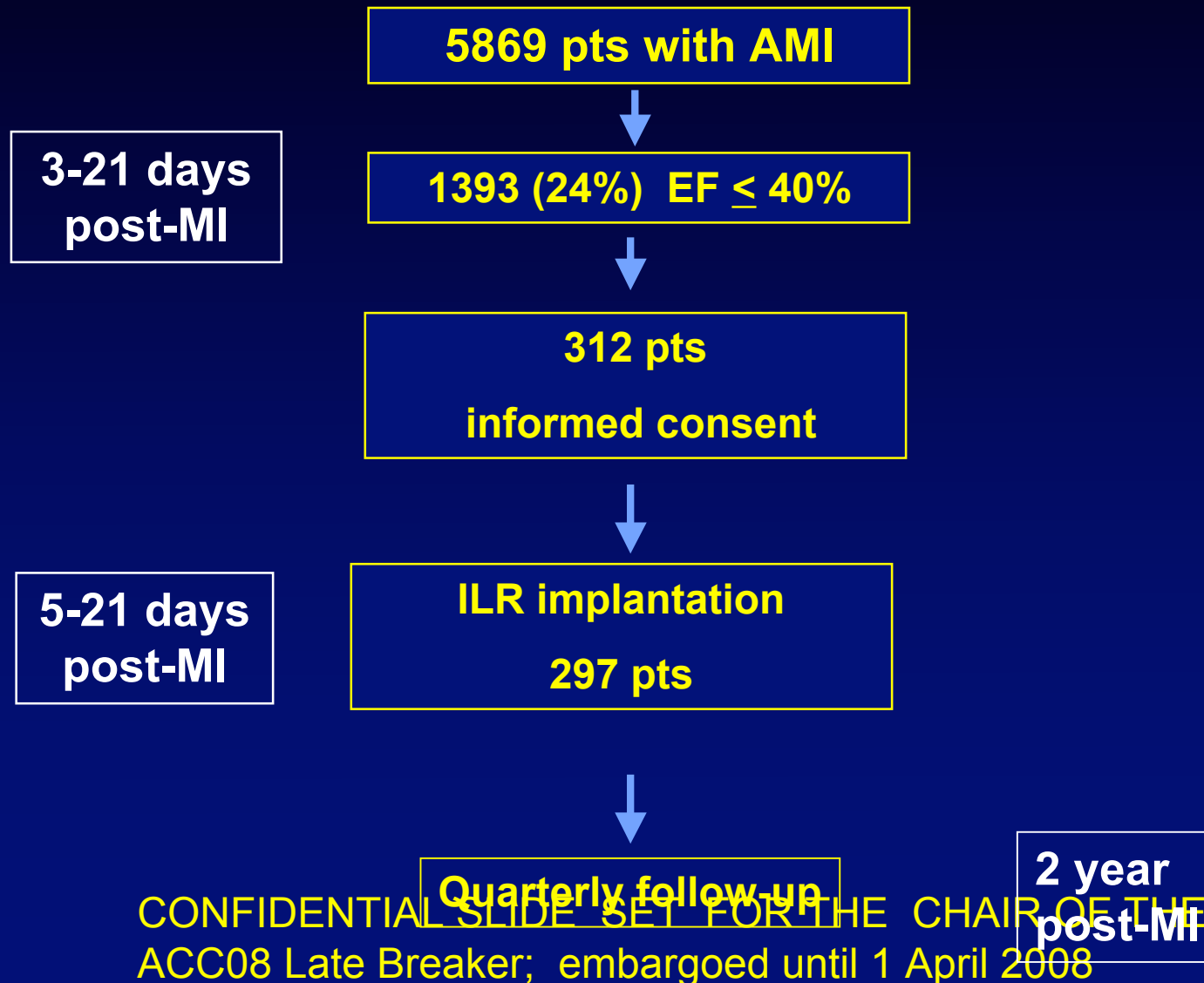
- Patients within 3 to 21 days of AMI
 - + CKMB or Troponin elevation
 - + Typical chest pain or ECG changes
- EF \leq 40%, 2-D echo (WMI \leq 1.3)

Exclusion criteria

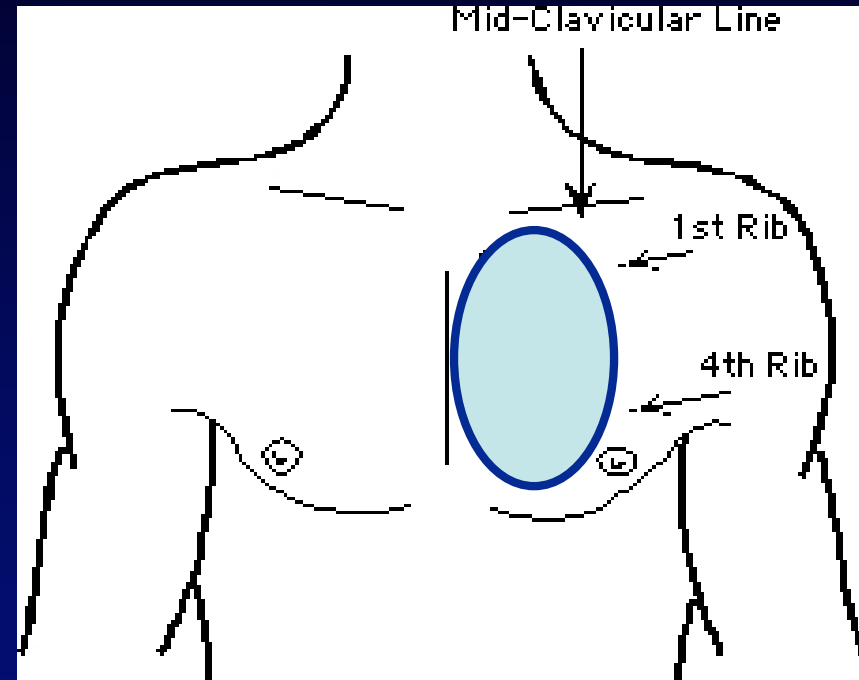
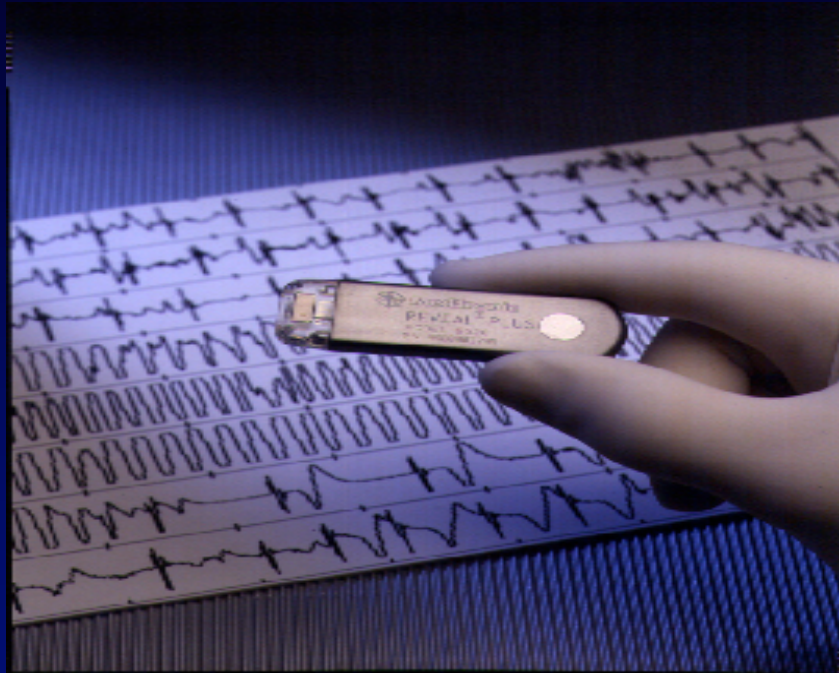
- Planned CABG/ ICD
- NYHA IV
- Informed consent not obtained

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Study design



Implantable loop recorder



Weight 17 g. Longevity up to 2 years.

ECG storage 42 min, automatic detection algorithms

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sampling rate 100 Hz

Patient characteristics

enroll: 2002 to 2005

Baseline

# of pts	312
Gender (men)	77%
Age (years)	65 ± 11
LVEF	31% ± 6
AF permanent	9%
QRS > 120 ms	15%
Diabetes	20%
Prior MI	37%
Hx of CHF (II-III)	11%

Revascularization

Primary PCI	30%
Thrombolysis	35%

Rx at discharge

ASA	90%
Beta-blockers	96%
ACE / AT II	89%
Statins	82%

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Definitions: pre-specified arrhythmia

Sinus bradycardia ≤ 30 bpm, ≥ 8 s

Sinus arrest ≥ 5 s

AV block (2°, 3°) ≤ 30 bpm, ≥ 8 s

Non-sustained VT ≥ 125 bpm, ≥ 16 beats

Sustained VT ≥ 125 bpm, ≥ 30 s

New Onset Atrial Fib ≥ 125 bpm

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Incidence of pre-specified arrhythmias recorded by the ILR

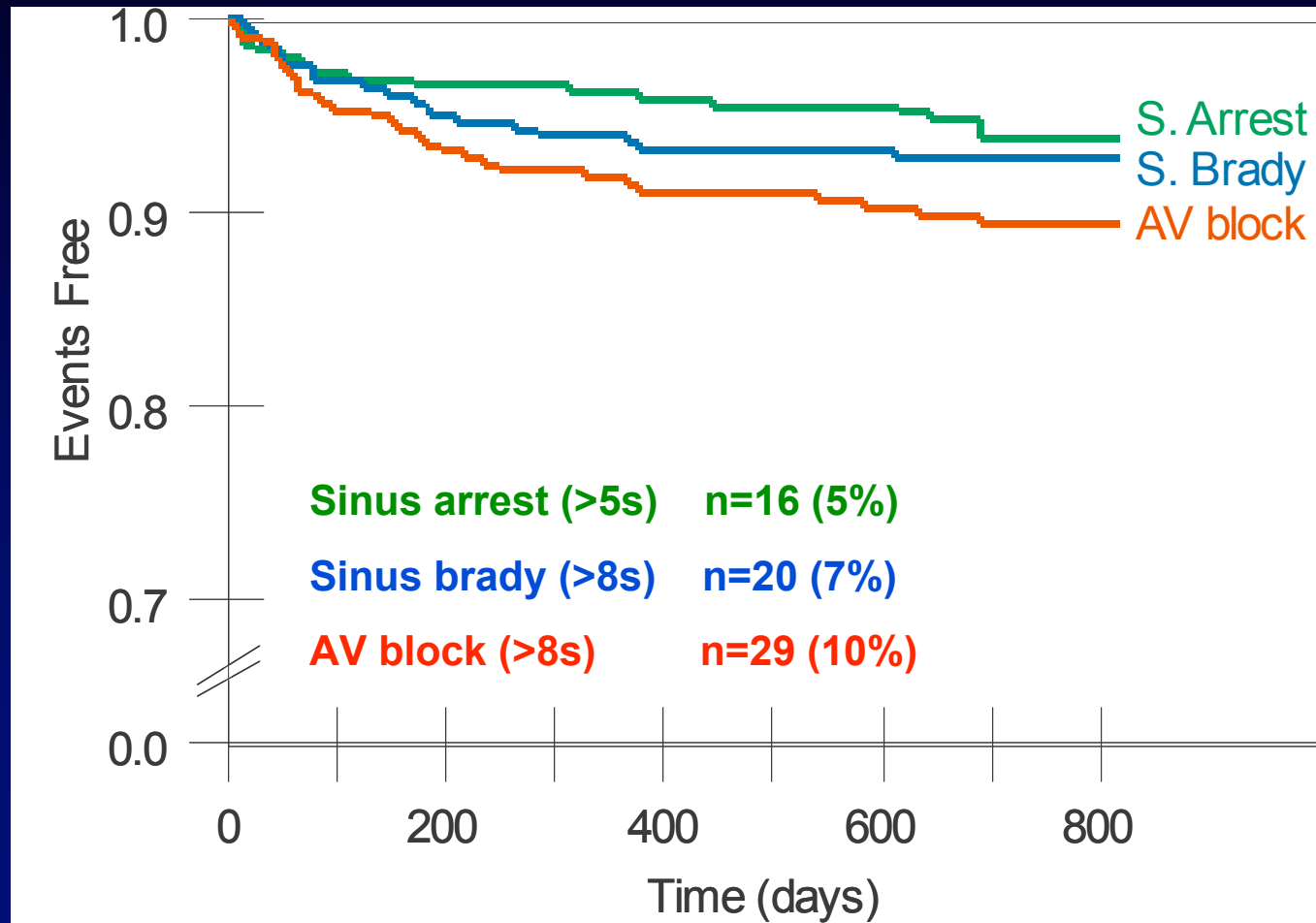
Mean follow-up 1.9 years

137 pts (46%) documented either VF or at least one pre-specified arrhythmias

86% were asymptomatic

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Bradyarrhythmia: Time to first arrhythmia by ILR



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Reveal(R) Plus Model 9526

Gain: x8 (+/- 0.2 mV)

Storage Mode: 1 patient, 13 auto events, 42 min.

Automatic Event 1 of 13 recorded 11/08/2001

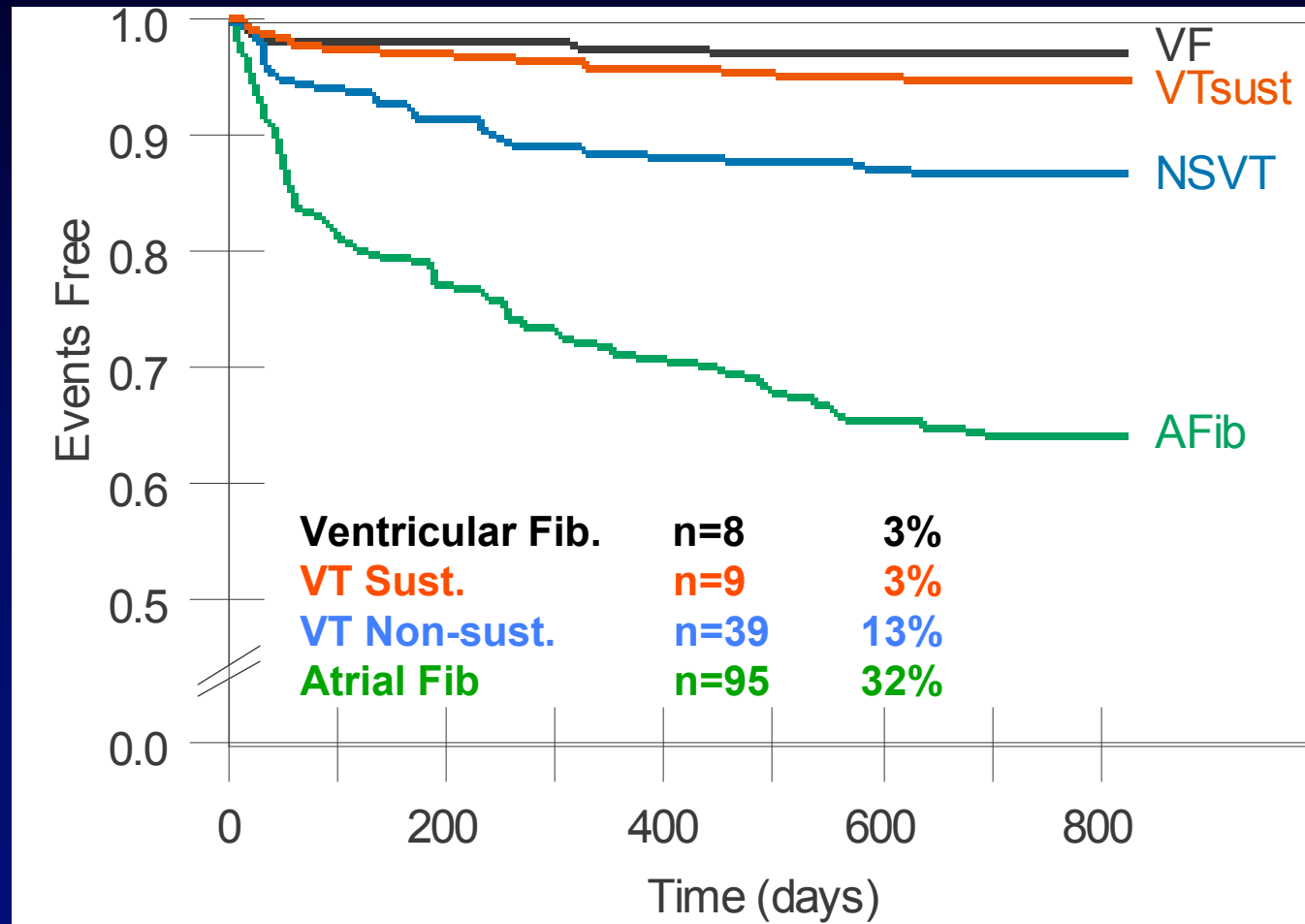
97

12.5 mm/sec, 72.5 mm/mV

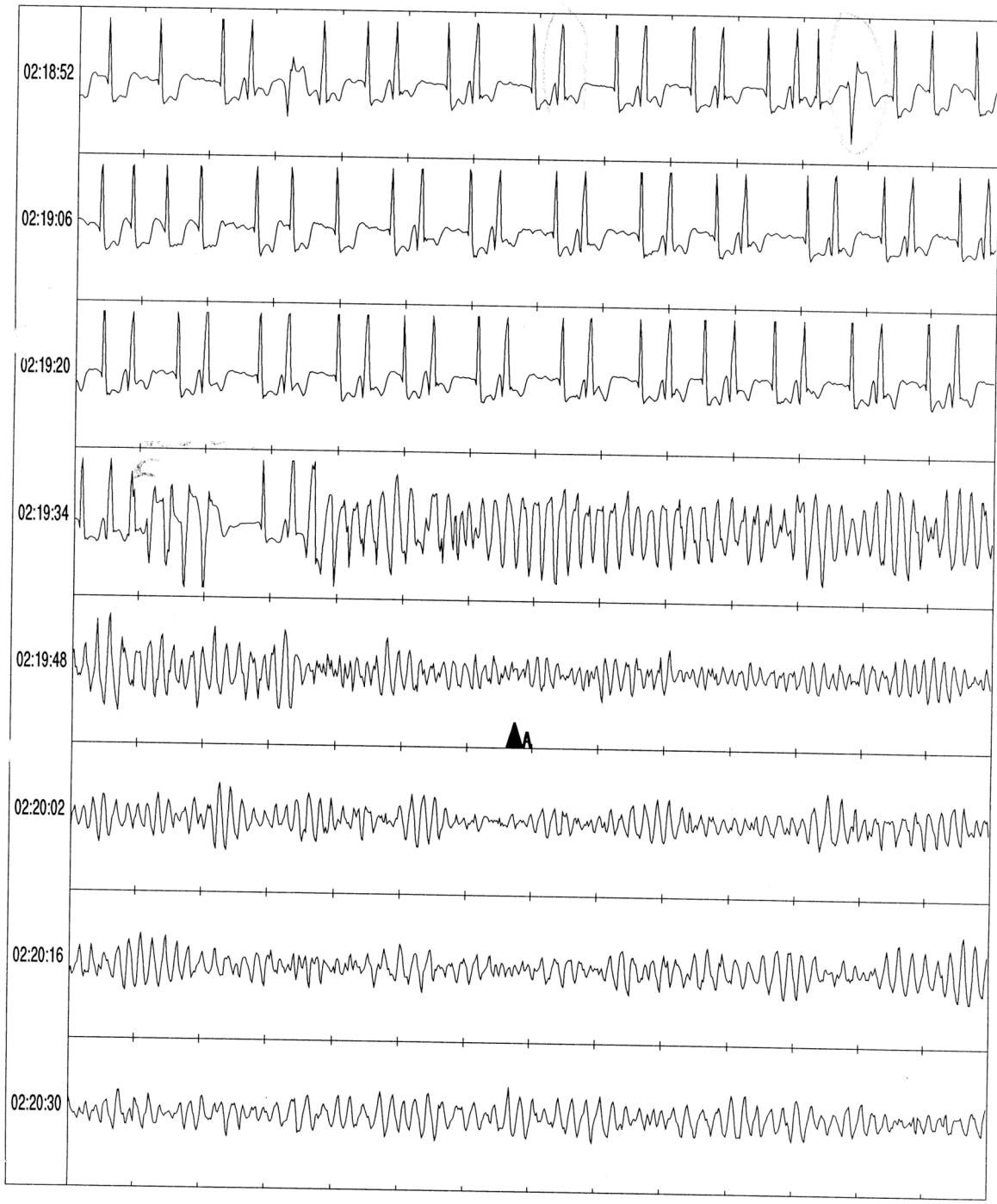


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Tachyarrhythmia: Time to first arrhythmia by ILR



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Univariate Analysis

predictors of Cardiac Death

p-Value	Hazard Ratio	Arrhythmia
0.0004	7.0	AV block < 30 bpm*
0.004	5.8	Sinus brady < 30 bpm
0.025	3.4	Non sustained VT

* AV block also independent predictor

Conclusion

Incidence of arrhythmias

Mean follow up 1.9 years

32% had new onset atrial fibrillation

20% had (2° or 3°) AV block or sinus brady

13% had non sust VT

11% had sust VT/VF

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Conclusion

2^0 - 3^0 AV block
is an independent predictor of cardiac death

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Conclusion

The ILR is a strong diagnostic tool and should be considered in future studies for improved management of our patients

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