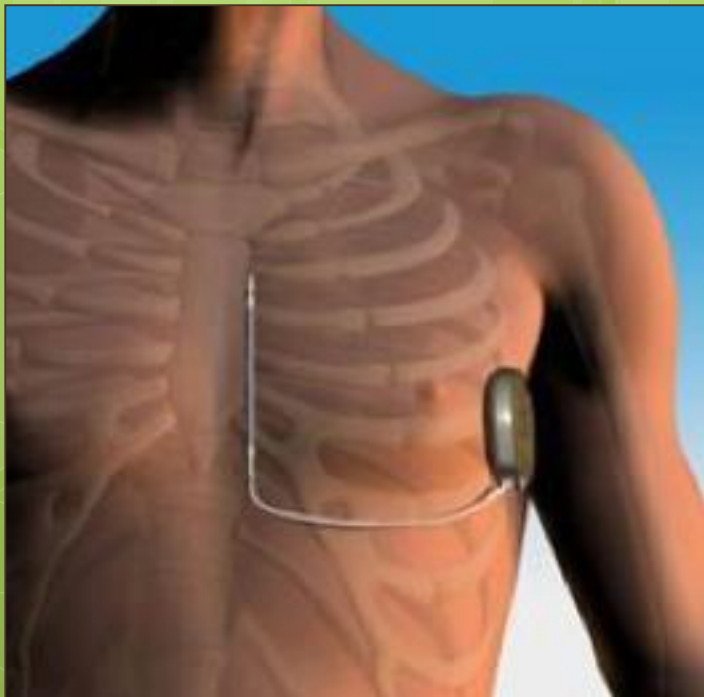


# THE SUBCUTANEOUS CARDIAC DEFIBRILLATOR



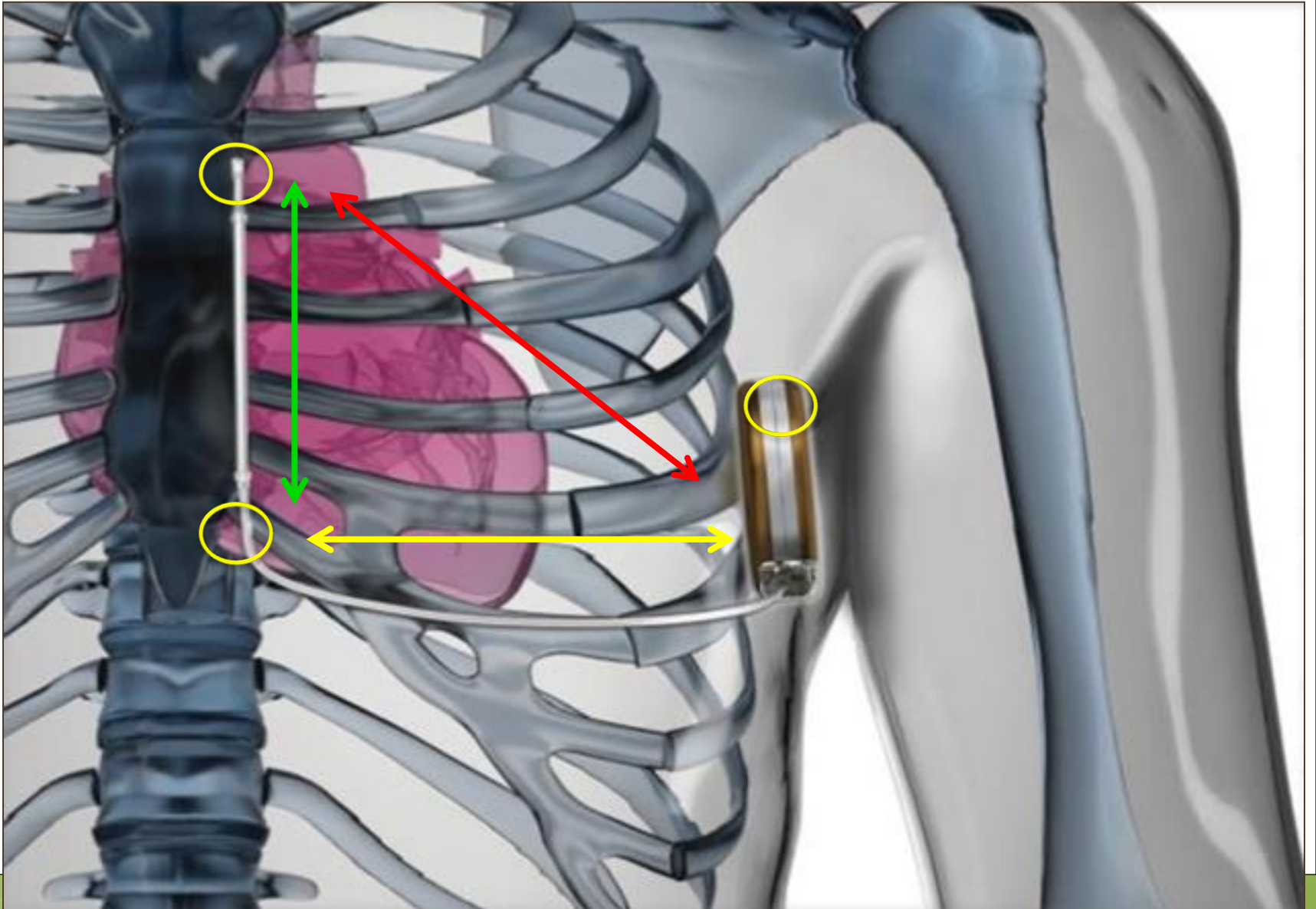
**Michel CHAUVIN  
STRASBOURG**



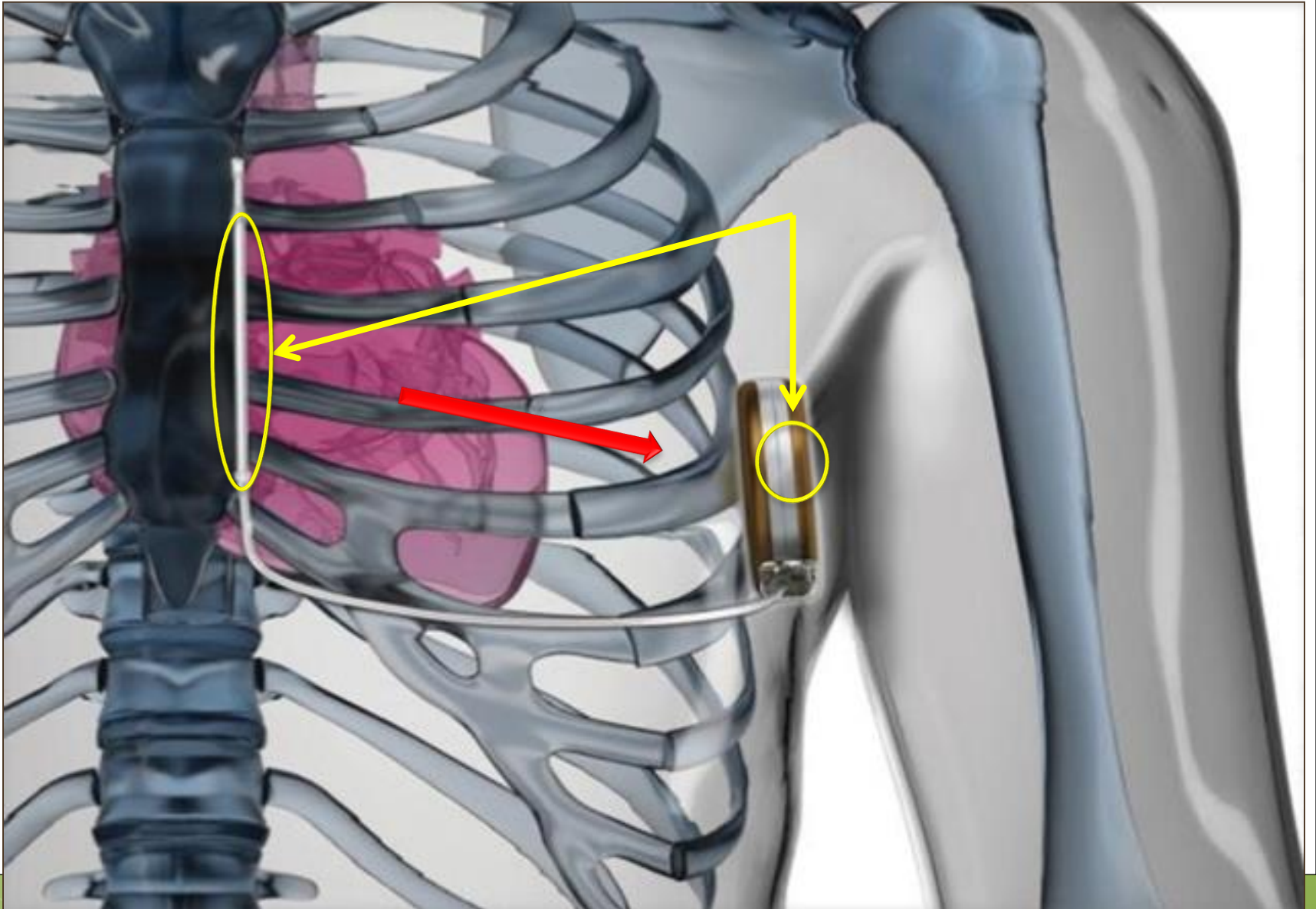
# **DISCLOSURES**

**CONSULTANT – BOSTON SCIENTIFIC**

# S-ICD TECHNOLOGY



# S-ICD TECHNOLOGY



# **WORLDWIDE AND FRENCH IMPLANTATIONS**

## **WORLDWIDE EXPERIENCE :**

**> 27 000**

## **FRENCH EXPERIENCE :**

- 2013-2014 : 350**
- 2015 : 420**
- 2016 : 850**

**TOTAL FRANCE : > 1700**

# S-ICD'S EFFICACY AND SAFETY

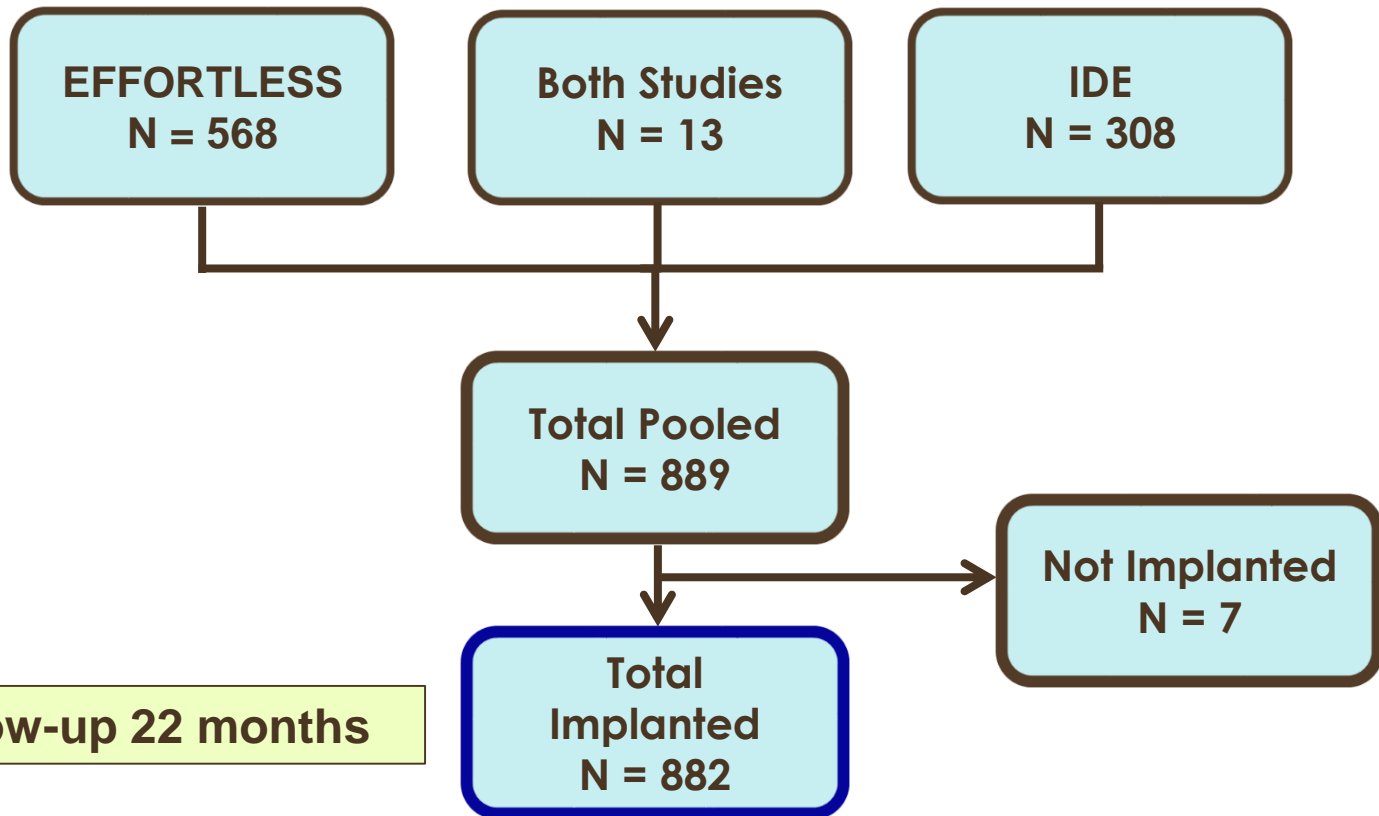
## Safety and Efficacy of the Totally Subcutaneous Implantable Defibrillator



### 2-Year Results From a Pooled Analysis of the IDE Study and EFFORTLESS Registry

Martin C. Burke, DO,\* Michael R. Gold, MD, PhD,† Bradley P. Knight, MD,‡ Craig S. Barr, MD,§  
Dominic A.M.J. Theuns, PhD,|| Lucas V.A. Boersma, MD, PhD,¶ Reinoud E. Knops, MD,# Raul Weiss, MD,\*\*  
Angel R. Leon, MD,†† John M. Herre, MD,‡‡ Michael Husby, MS, MPH,§§ Kenneth M. Stein, MD,§§  
Pier D. Lambiase, PhD||||

# POOLED ANALYSIS OF IDE STUDY AND EFFORTLESS REGISTRY



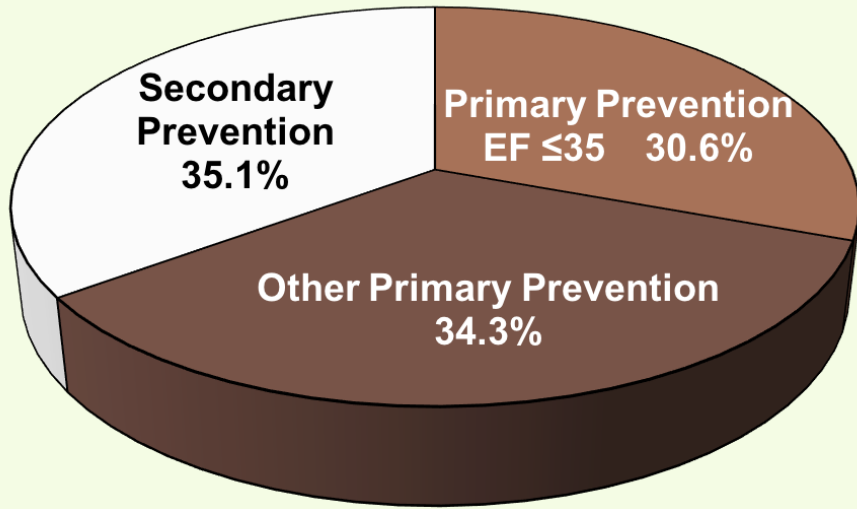
Mean follow-up 22 months

**THE EFFORTLESS REGISTRY  
3 YEAR RESULTS**

**1000 PATIENTS**

**Lucas Boersma *et al*, HRS 2016**





Variable	Percent
Average Age	48 ± 17
Percent Male	72%
Ejection Fraction	43% ± 18%
QRS width, msec	106 ± 25
BMI	27 ± 6

Primary Cardiac Disease	Percent
Non-ischaemic	38.5%
ARVC	3.5%
Congenital	2.1%
Dilated	9.3%
HCM	11.7%
Unspecified/Other	11.9%
Ischemic	31.1%
Inherited	18.6%
Idiopathic VF	6.0%
Valvular Disease	2.3%
Other	2.2%
CHF	1.2%

# S-ICD'S EFFICACY AND SAFETY

## EFFICACY OF THE TREATMENTS

- ✓ **314 EPISODES IN 104 PTS**
  - ✓ **115 APPROPRIATELY SELF TERMINATED DETECTED VT/VF**
    - ✓ **76 MVT IN 58 PTS**
    - ✓ **35 PVT IN 12 PTS**
    - ✓ **OTHERS : 4 PTS**
  - ✓ **199 APPROPRIATELY DETECTED AND TREATED VT/VF**
    - ✓ **88 ELECTRIC STORMS**
    - ✓ **111 VT/VF**

# **S-ICD'S EFFICACY AND SAFETY**

## **EFFICACY OF THE 1ST SHOCK**

- ✓ **51 PVT/VF IN 32 PTS : 88.2% EFFICACY OF 1ST SHOCK**
- ✓ **60 MVT IN 40 PTS : 91.7% EFFICACY OF 1ST SHOCK**
- ✓ **EFFICACY UP TO 5 SHOCKS : 98.2%**

# S-ICD'S EFFICACY AND SAFETY

Acute Major Complications (% of patients)	<u>S-ICD</u> Pooled Data	<u>TV-ICD</u> NCDR Analysis (Peterson et al, JAMA 2013 <sup>1</sup> Meta-analysis (van Rees et. al. JACC 2011) <sup>2</sup>
		2 %

(Hematoma, Lead or Device Mal-position or Displacement, Pneumothorax)

# **S-ICD'S EFFICACY AND SAFETY**

## **INFECTION**

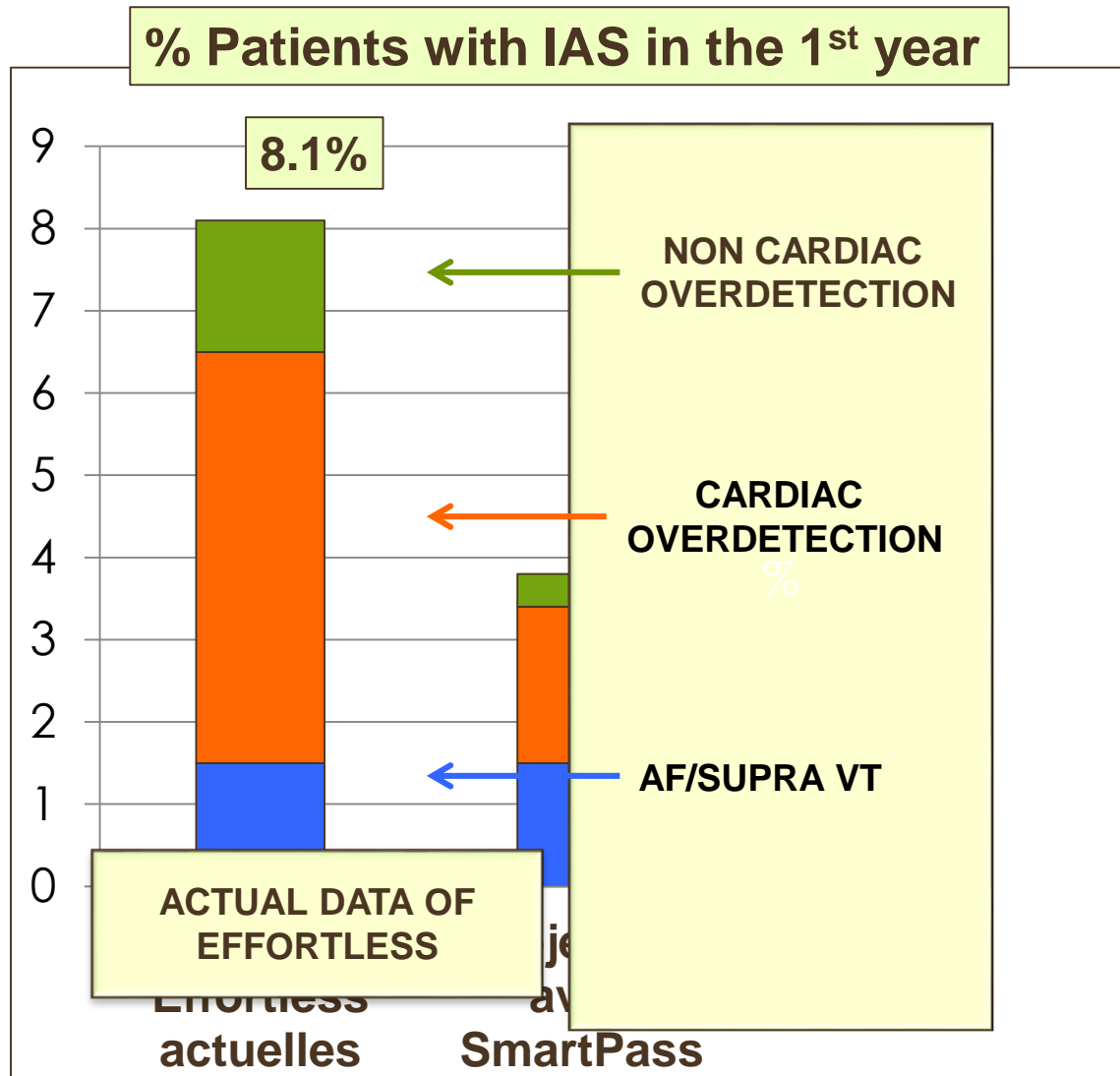
- ✓ **3.9 % OF THE PATIENTS**
- ✓ **EXPLANT RATE : DEPENDS ON THE EXPERIENCE AND THE DATES OF IMPLANTATIONS**

# S-ICD'S EFFICACY AND SAFETY

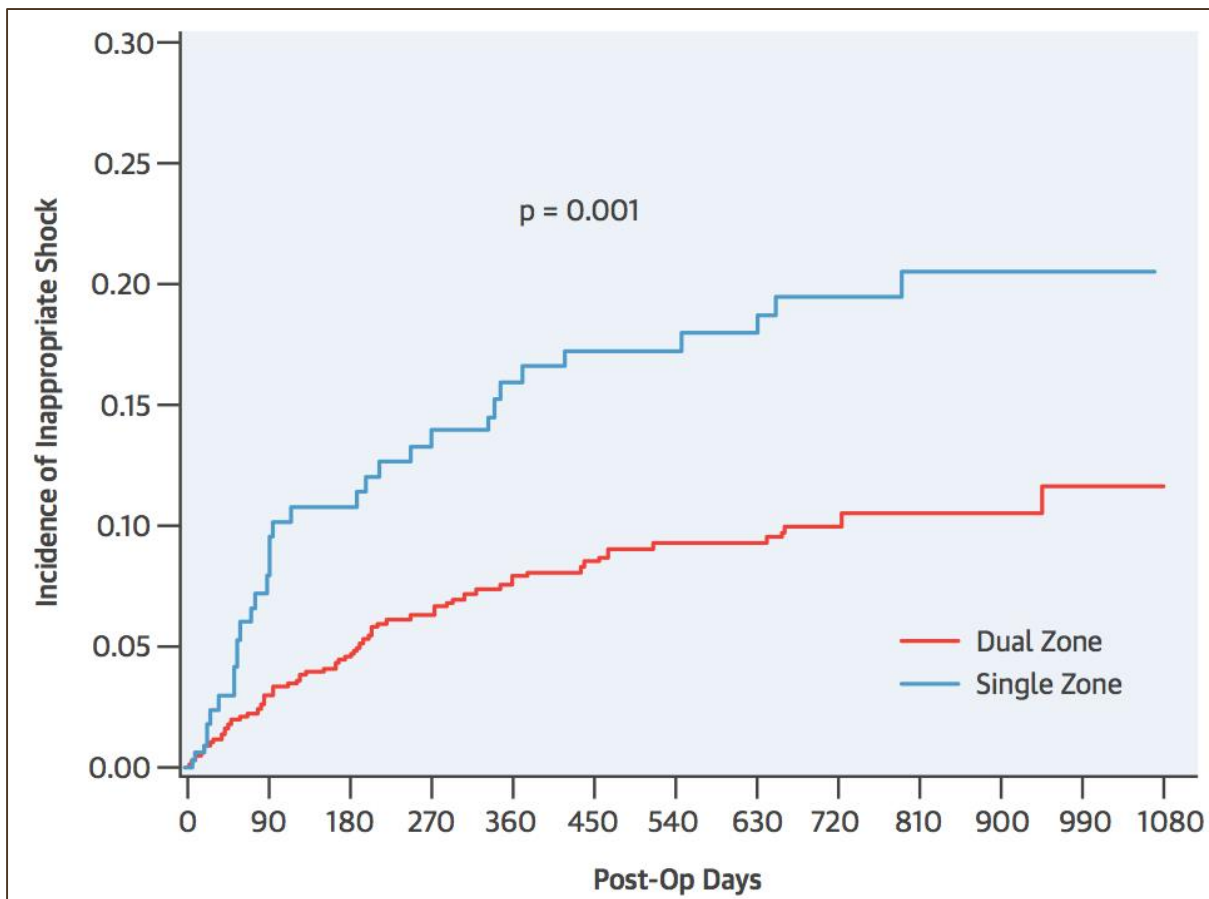
## WHY INAPPROPRIATE THERAPIES ?

- ✓ T-WAVE OVERSENSING : 39%
- ✓ SUPRA VENTRICULAR ARRHYTHMIAS : 24%
- ✓ LOW AMPLITUDE SIGNALS : 21%
- ✓ SVA DISCRIMINATION ERRORS : 1%
- ✓ NON-CARDIAC OVERSENSING : 8%

# INAPPROPRIATE SHOCK INCIDENCE



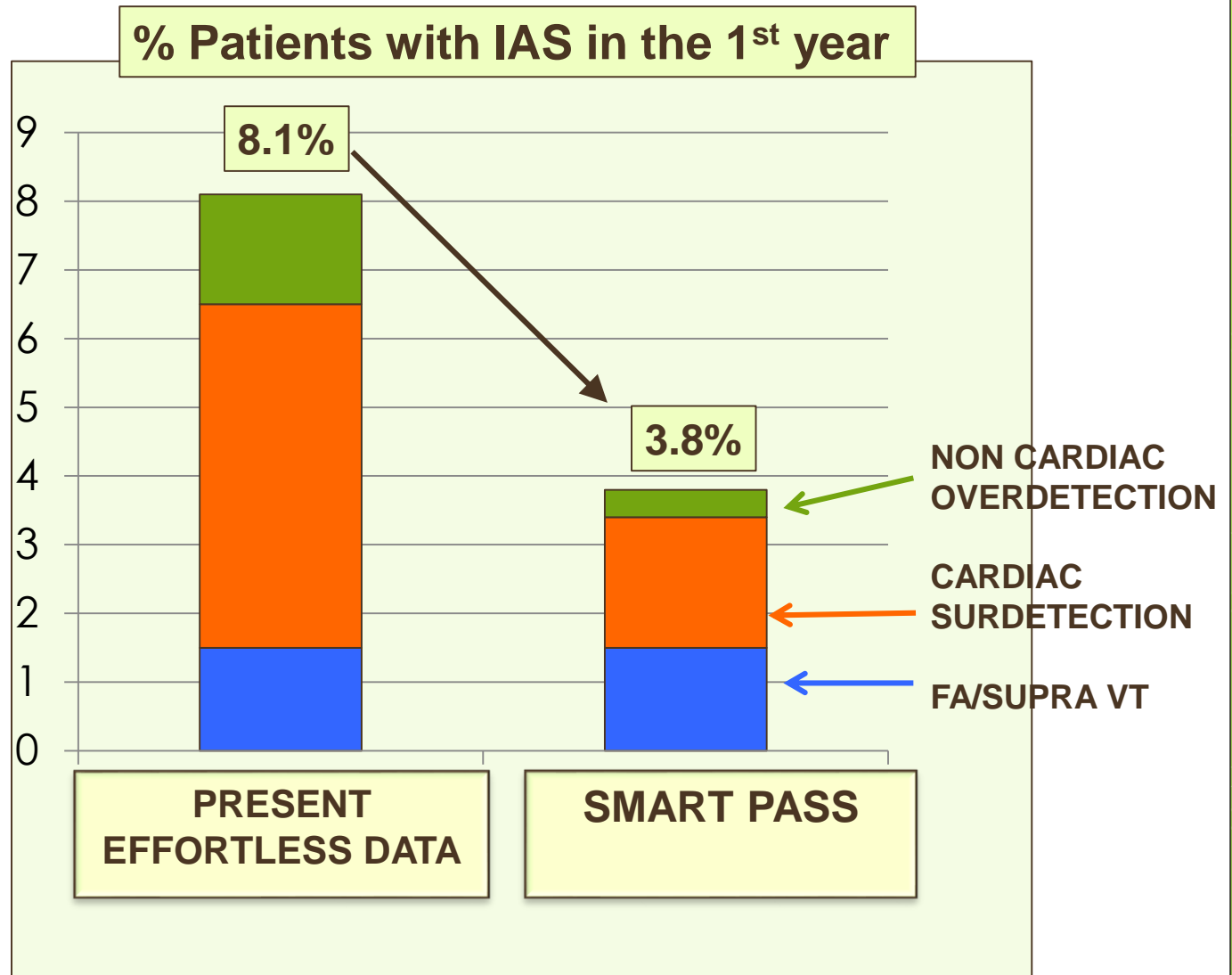
# S-ICD'S EFFICACY AND SAFETY



**INAPPROPRIATE THERAPIES**

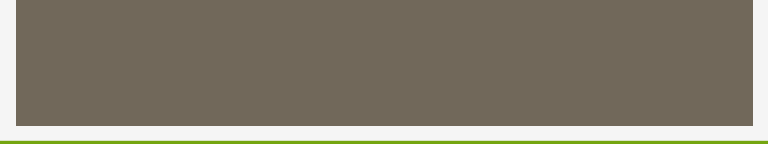


# INAPPROPRIATE SHOCK INCIDENCE





# **ANTI TACHYCARDIA / BRADYCARDIA PACING : NEEDS AND SOLUTIONS**



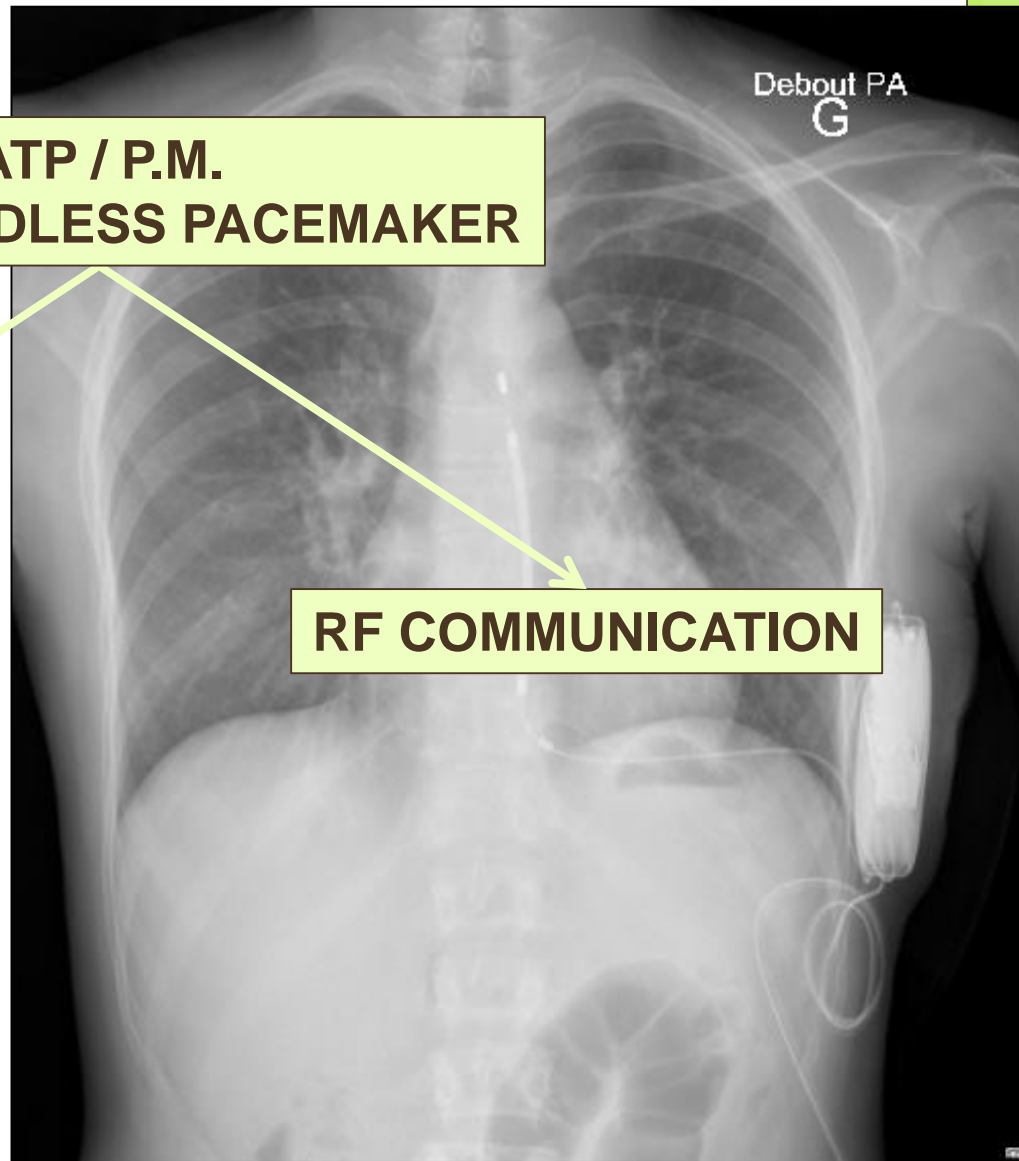
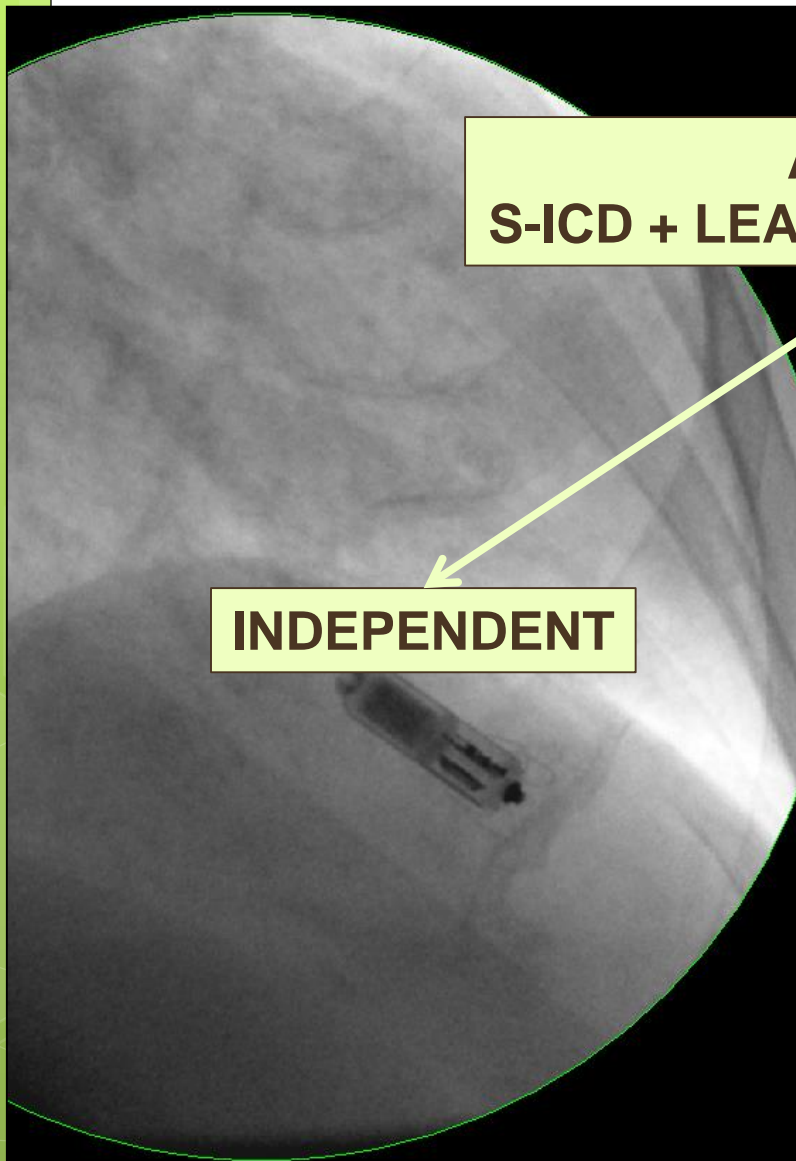
	<b>EFFORTLESS</b>	<b>S-ICD Pooled Data</b> Number/(% of Patients)
<b>Explantation of S-ICD for new Pacing Indication</b>	<b>1/ (0.1%)</b>	<b>1/(0.1%)</b>
<b>Explantation of S-ICD for new ATP Indication</b>	<b>5 (0.5%)</b>	<b>1/(0.1%)</b>
<b>Explantation of S-ICD for new CRT Indication</b>	<b>4 (0.4%)</b>	<b>1/(0.1%)</b>

# AND THE SOLUTION IN A NEAR FUTURE...

ATP / P.M.  
S-ICD + LEADLESS PACEMAKER

INDEPENDENT

RF COMMUNICATION



**THANK YOU !**