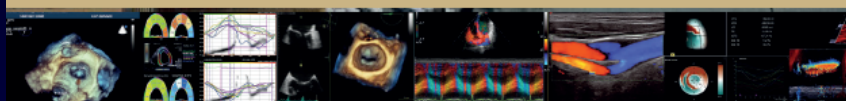




Società Italiana di Ecografia Cardiovascolare

WWW.SIEC.IT



ECOCARDIOGRAFIA 2015
XVII Congresso Nazionale SIEC

Hotel Royal Continental

Napoli, 16-18 Aprile 2015



Cardioversione guidata
con transesofageo:
sempre meglio con i
nuovi anticoagulanti orali

Paolo Colonna, MD FESC
*Cardiologia Ospedaliera,
Policlinico di Bari*
Presidente eletto nazionale SIEC



■ 9.30-11.00

SALA MIRABILIS 2

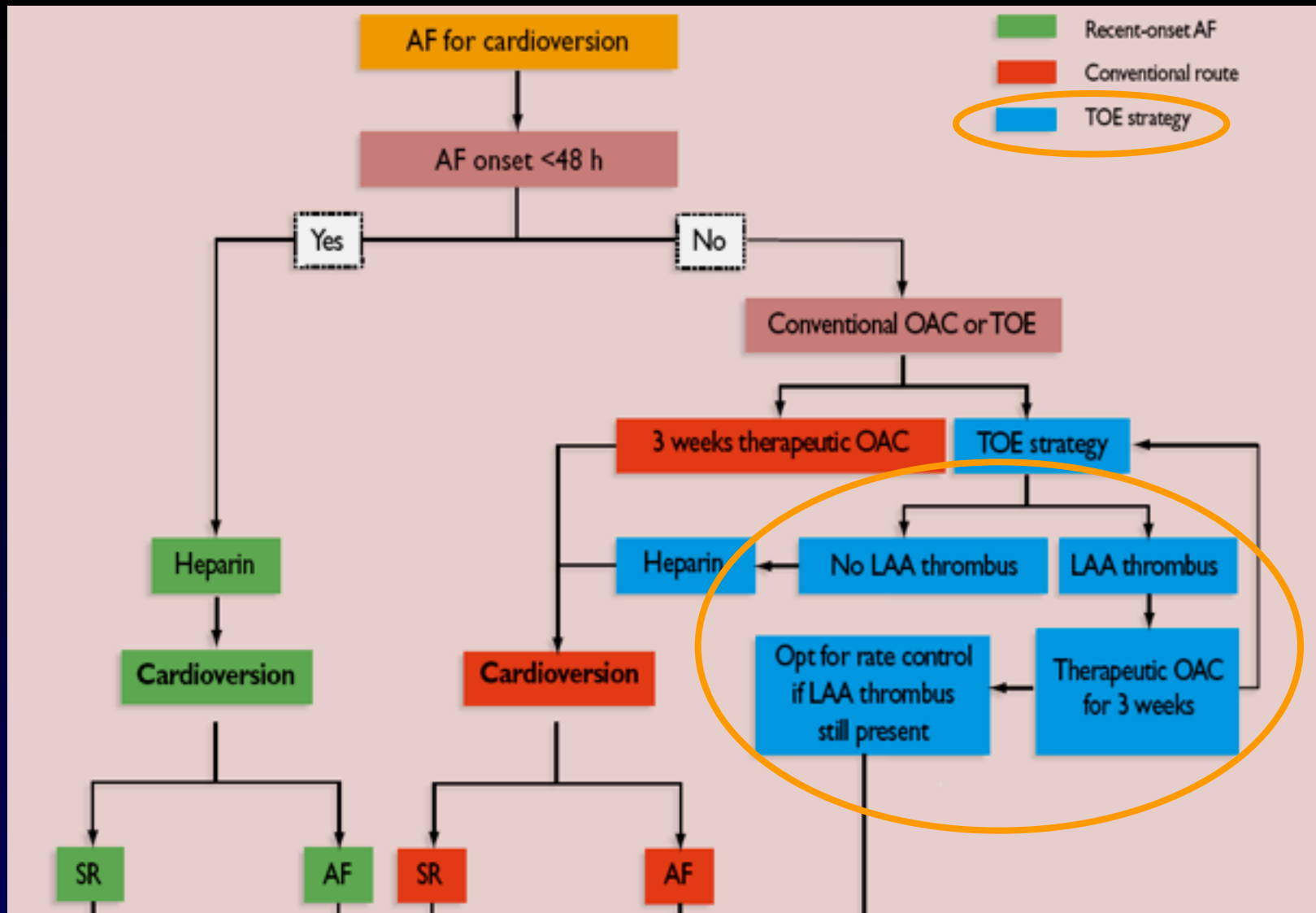
ATRIO SINISTRO: DALLA DILATAZIONE ALLA FIBRILLAZIONE ATRIALE

Moderatori: **G. Di Pasquale** (Bologna), **G.L. Nicolosi** (Cordenons)

- 9.30 Dimensioni e funzione dell'atrio sinistro: dall'eco alla risonanza
A. Barbieri (Modena)
- 9.47 Disfunzione atriale sinistra: sempre dipendente dal ventricolo sottostante?
C. Cadeddu Dessalvi (Cagliari)
- 10.04 Auricola e rischio cardioembolico: l'importanza dell'ecocardiografia
S. Carerj (Messina)
- 10.21 Cardioversione guidata con transesofageo: sempre meglio con i nuovi anticoagulanti orali?
P. Colonna (Bari)
- 10.38 Discussione

Validità e limiti dell'ETE nella FA

- 1. Cardioversione guidata con eco TE**
 - 2. Indicazioni terapia anticoagulante (insieme a criteri clinici)**
 - 3. Ausilio nella scelta warfarin / nuovo AC**
- Diagnosi eziologica
 - Funzione VS
 - Dimensioni / stato AS
 - Funzione auricola sinistra
 - Altre fonti emboligene

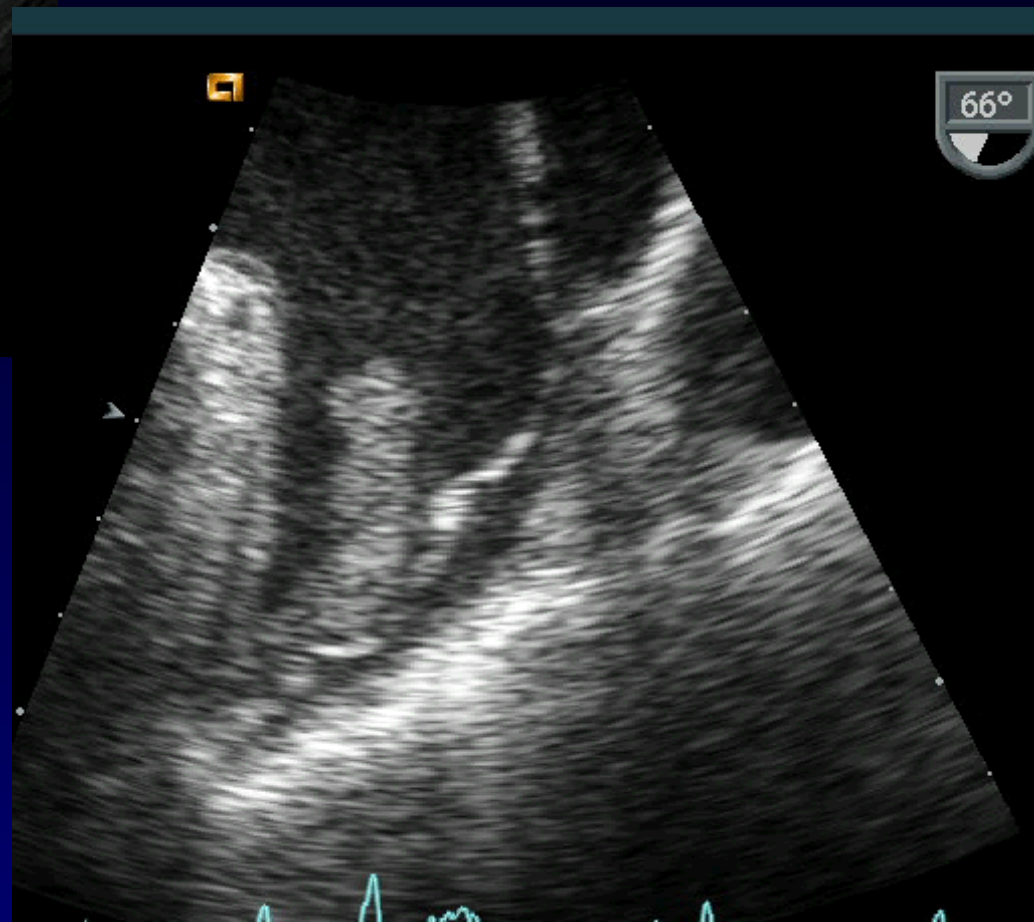
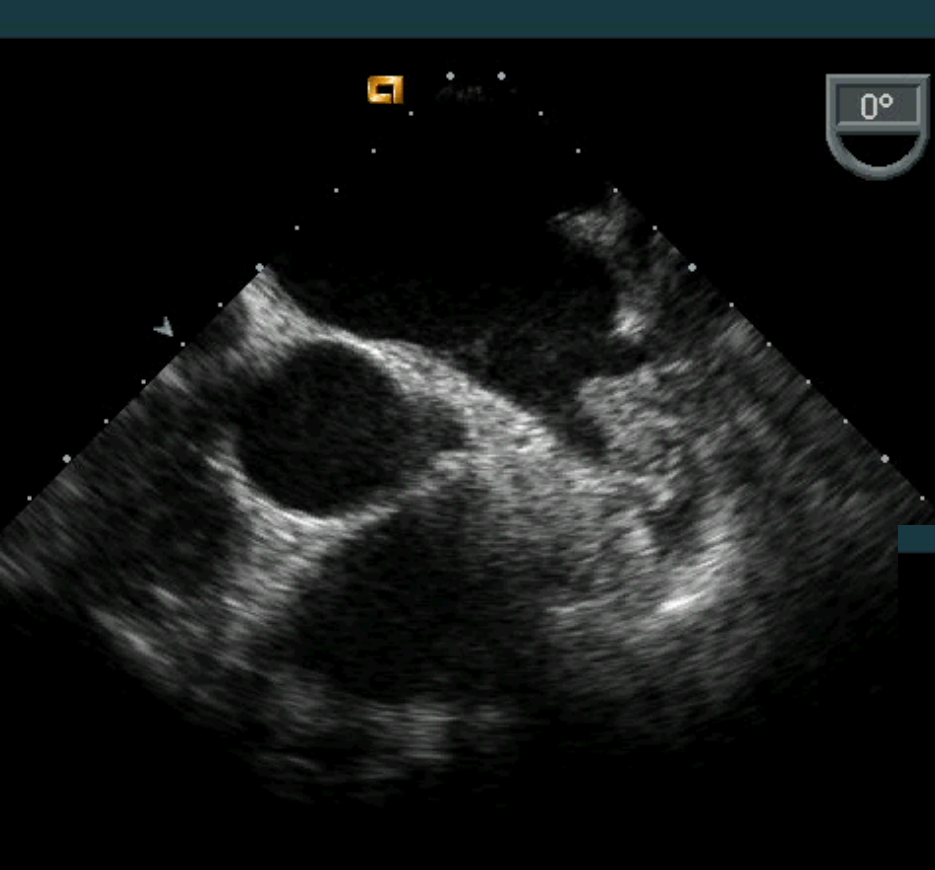


Come alternativa alle 3 sett di TAO, la cardioversione guidata dal TEE **è raccomandata** per escludere trombi in AS o auricola sin. **Classe I, LOE B**

Echocardiography in atrial fib: information for clinical decisions

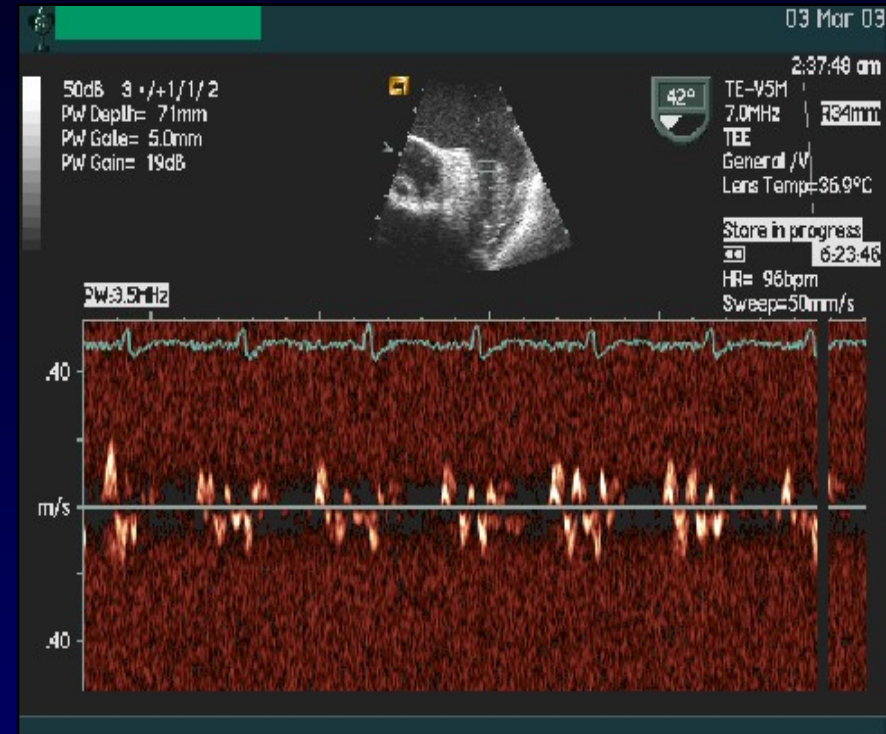
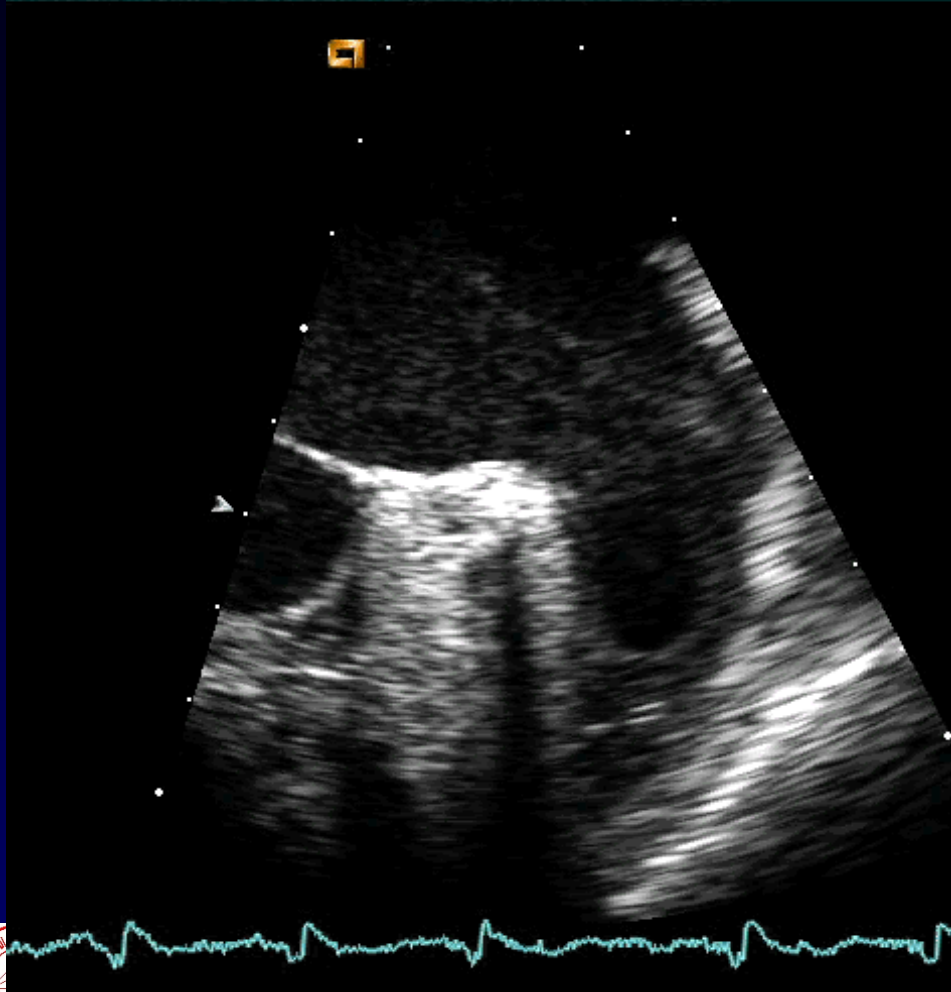
EAE recommendations, EJE '10

- Thrombi
 - Spontaneous echocontrast
 - LA appendage velocities
 - **LV function and thrombi**
 - Patent foramen ovale
 - Complex aortic plaques
- Atrio auricular function**
- Only with TOE**
-



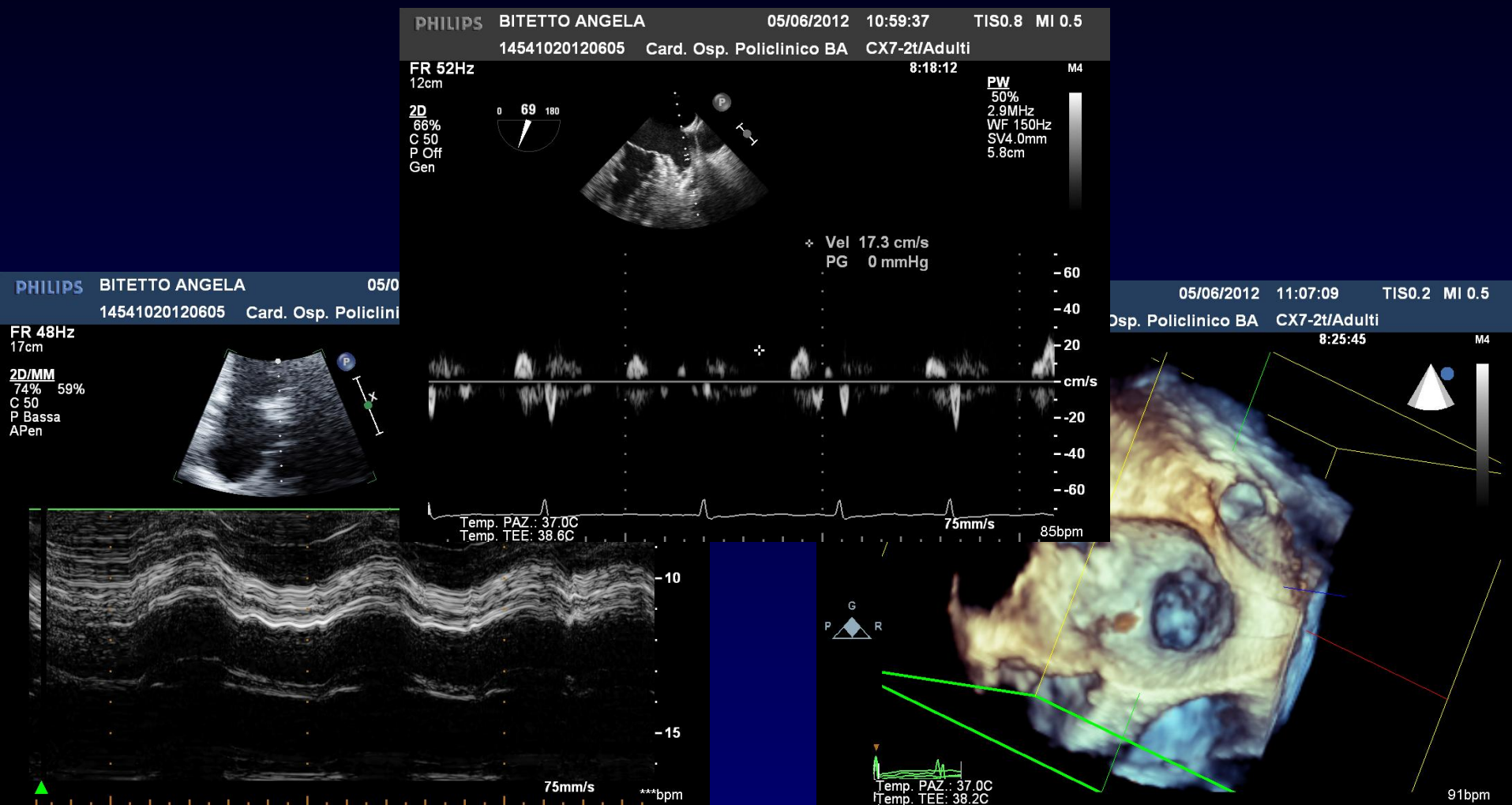
Left atrial appendage dysfunction

CARDIOLOGIA 1 OSPEDALIERA POLICLINICO BARI



Evaluation of left atrial appendage function and thrombi in patients with AF: from transthoracic to real time 3D TEE

Colonna et al. Eur J CV Imag 2013

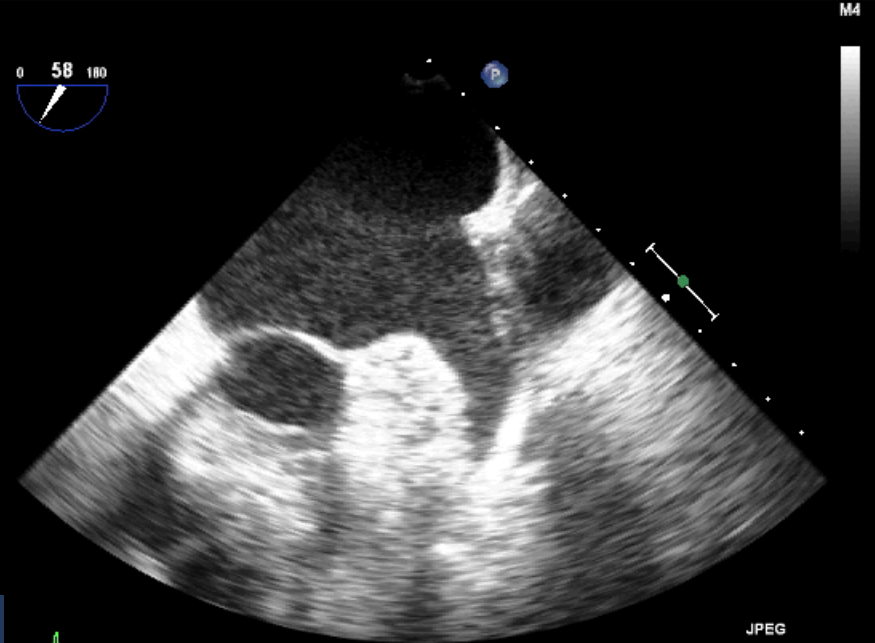


14541020120605

CX7-2t/AdultI

FR 52Hz
12cm

2D
75%
C 50
P Off
Gen



M4

JPEG

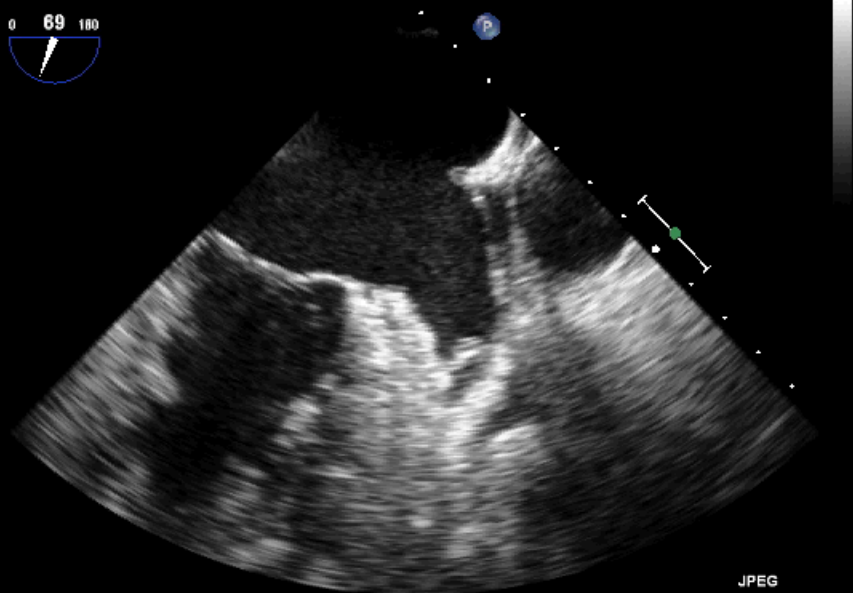
103 bpm

p. PAZ.: 37.0C
p. TEE: 38.3C

PHILIPS Cardiology Hosp Policlinico Bari 05/06/2012 10:58:46 TIS0.1 MI 0.5
14541020120605 CX7-2t/AdultI

FR 52Hz
12cm

2D
66%
C 50
P Off
Gen



M4

JPEG

99 bpm

Temp. PAZ.: 37.0C
Temp. TEE: 38.6C



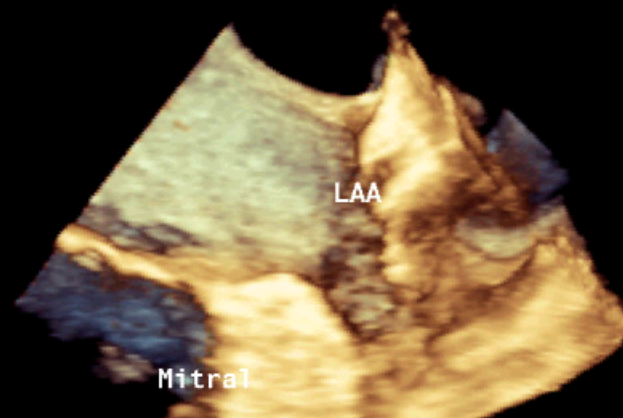
FR 26Hz
12cm

Live 3D
3D 47%
3D 40dB
Gen



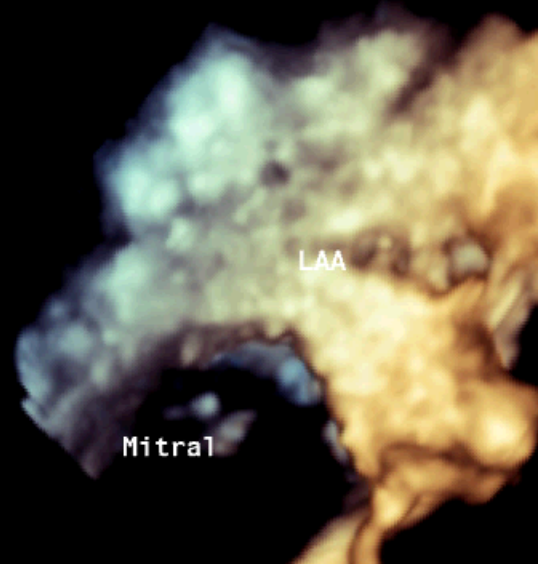
FR 32Hz
8.1cm

Volume completed 65
3D 47%
3D 40dB



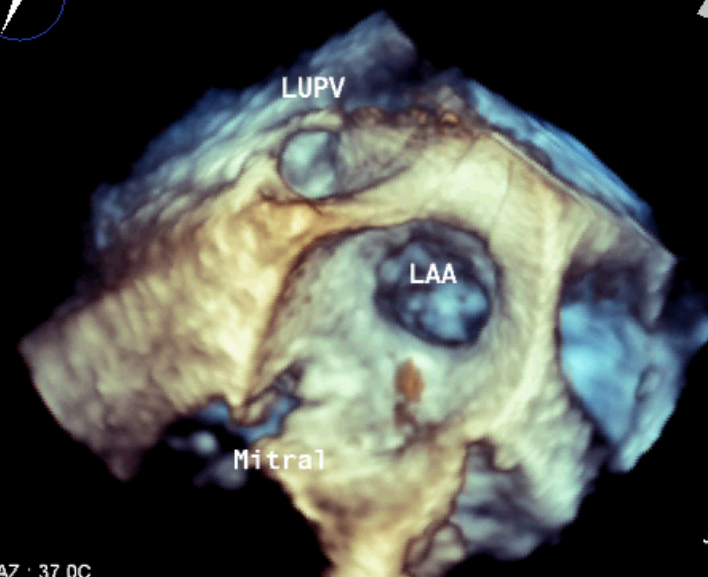
FR 32Hz
8.1cm

Volume completed 65
3D 47%
3D 40dB



FR 32Hz
8.1cm

Volume completed 65
3D 47%
3D 40dB



Temp. PAZ.: 37.0C
Temp. TEE: 38.2C

Temp. PAZ.: 37.0C
Temp. TEE: 38.2C

JPEG

102 bpm



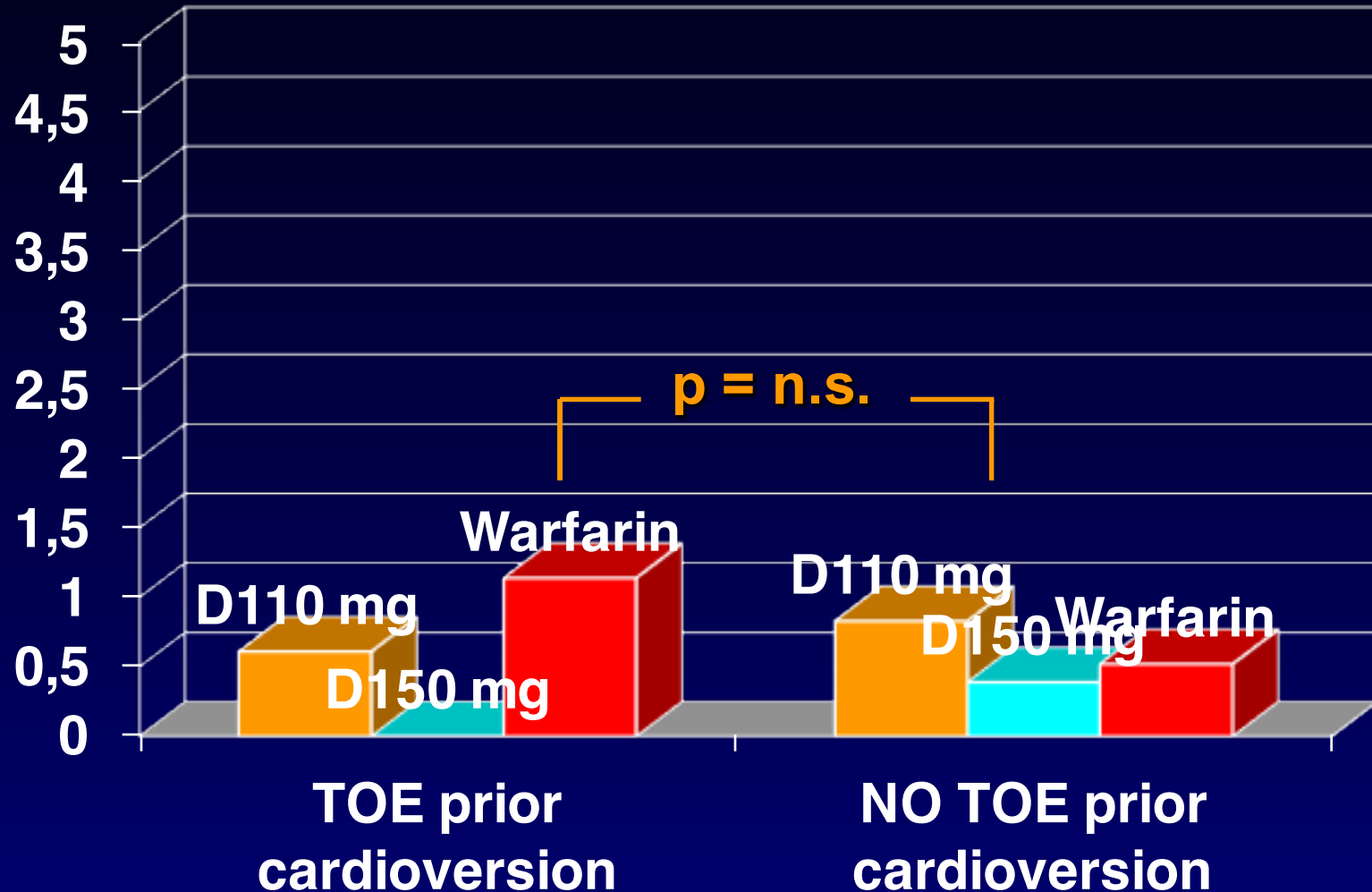
Analysis of 1.983 pts undergoing cardioversion (in ReLY trial)

Nagarakanti, Circ 2011

Rocket-AF 285 pts (JACC '13)

Aristotle 570 pts (Abs Esc '12)

Stroke / embolism at 30 days



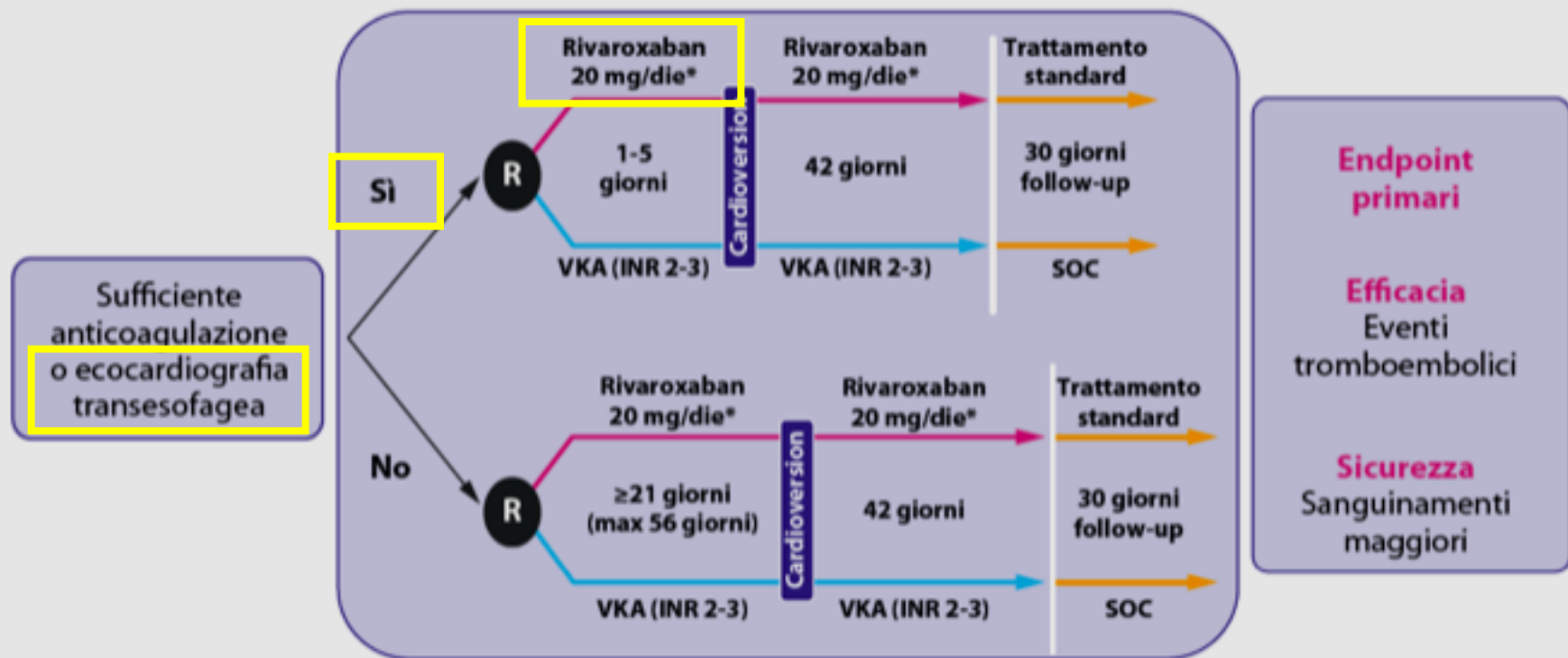
Rationale and design of the X-Vert trial in pts scheduled for cardioversion

Ezekowitz MD, Am Heart J 2014 May;167:646-52

38

I NUOVI ANTICOAGULANTI ORALI

Figura 8 Disegno dello studio prospettico X-VERT



* ridotto a 15 mg/die per disfunzione renale moderata (ClCr 30-49 ml/min)

X-VeRT: primary efficacy endpoints

Cappato R Eur Heart J 2014

	Rivaroxaban (N=978)		VKA (N=492)		Risk ratio (95% CI)
	%	n*	%	n*	
Primary efficacy endpoint	0.51	5	1.02	5	0.50 (0.15–1.73)
Stroke	0.20	2	0.41	2	
Haemorrhagic stroke	0.20	2		0	
Ischaemic stroke		0	0.41	2	
TIA		0		0	
Non-CNS SE		0	0.20	1	
MI	0.10	1	0.20	1	
Cardiovascular death	0.41	4	0.41	2	

X-VeRT: primary safety endpoints

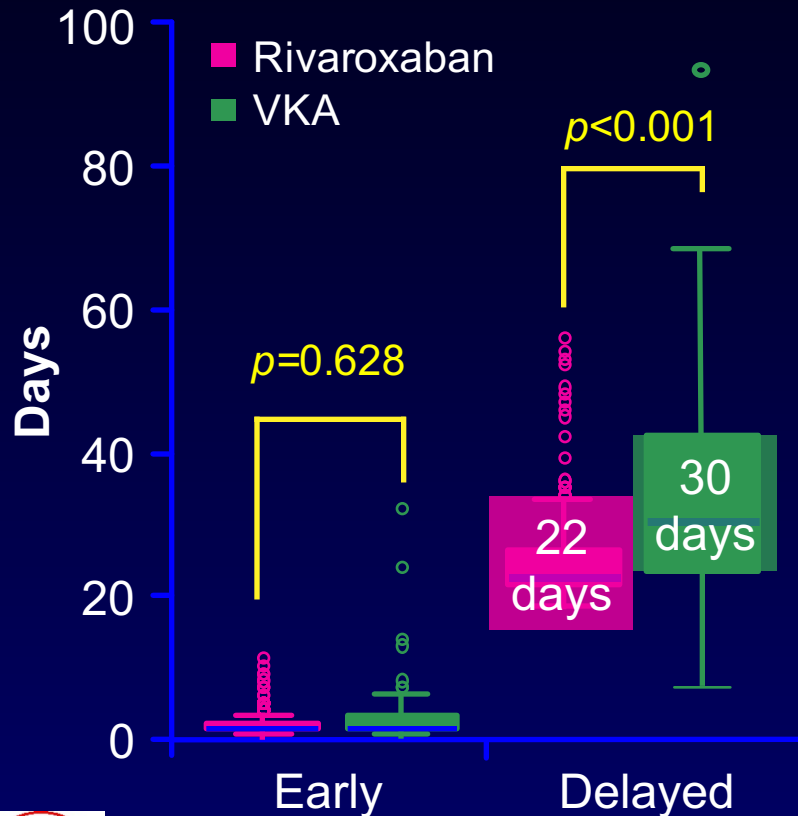
Cappato R Eur Heart J 2014

	Rivaroxaban (N=988)		VKA (N=499)		Risk ratio (95% CI)
	%	n*	%	n*	
Major bleeding	0.61	6	0.80	4	0.76 (0.21–2.67)
Fatal	0.1	1	0.4	2	
Critical-site bleeding	0.2	2	0.6	3	
Intracranial haemorrhage	0.2	2	0.2	1	
Hb decrease ≥ 2 g/dl	0.4	4	0.2	1	
Transfusion of ≥ 2 units of packed RBCs or whole blood	0.3	3	0.2	1	

X-VeRT: time to cardioversion by cardioversion strategy

Cappato R Eur Heart J 2014

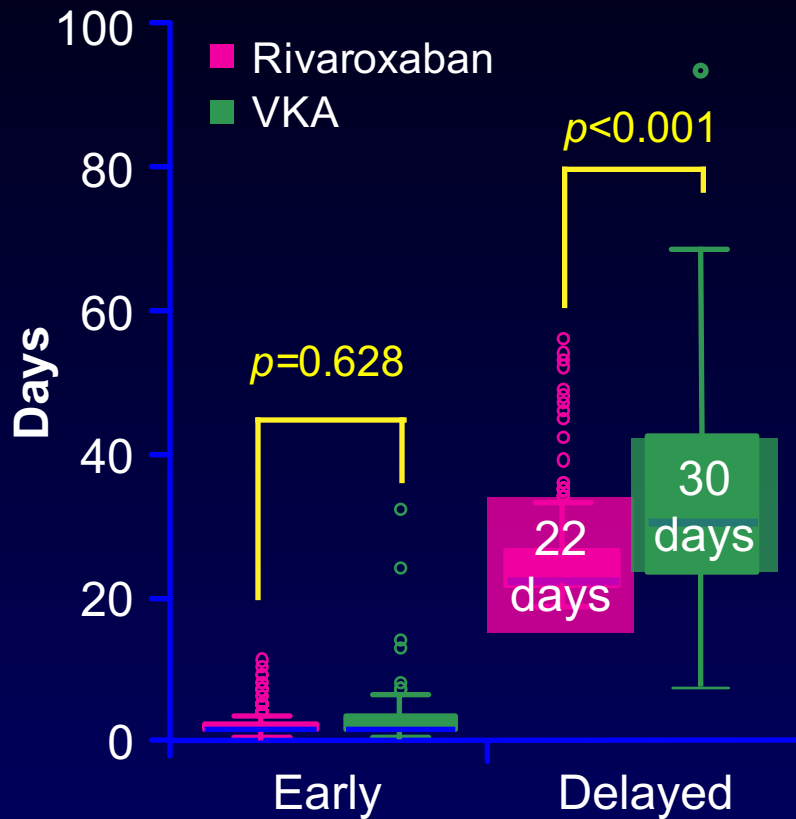
Median time to cardioversion



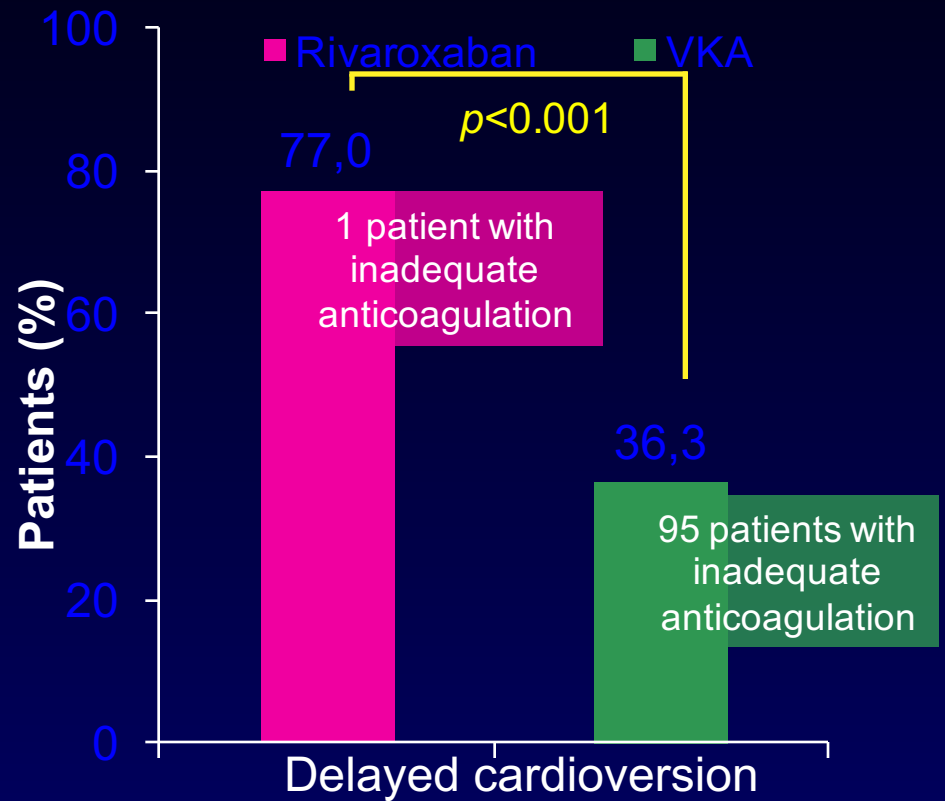
X-VeRT: time to cardioversion by cardioversion strategy

Cappato R Eur Heart J 2014

Median time to cardioversion



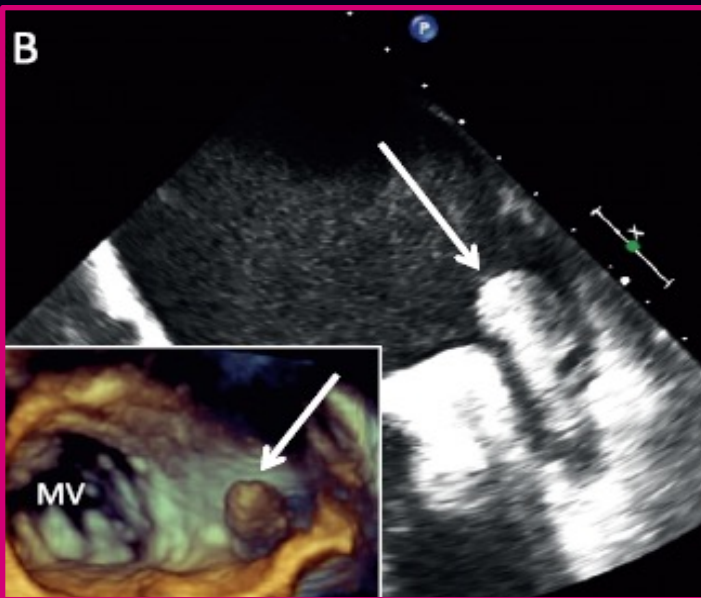
Patients cardioverted as scheduled*



* Not cardioverted as scheduled for **inadequate anticoagulation** (compliance of rivaroxaban or INRs out of range for VKA)

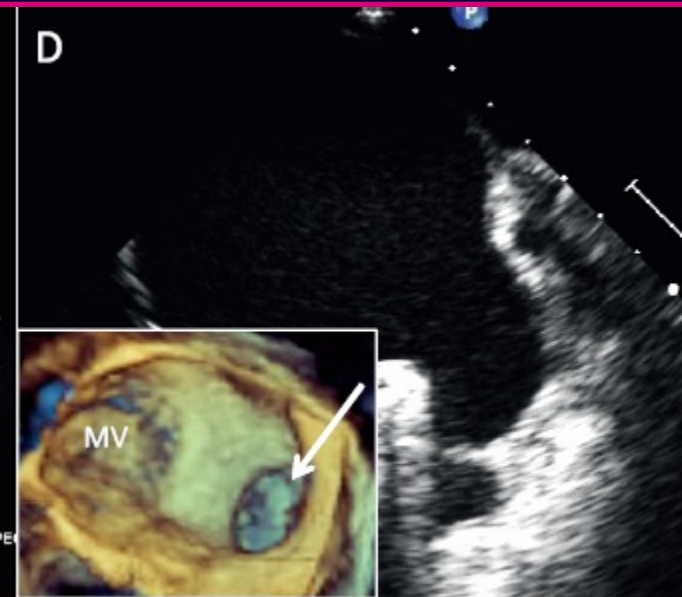
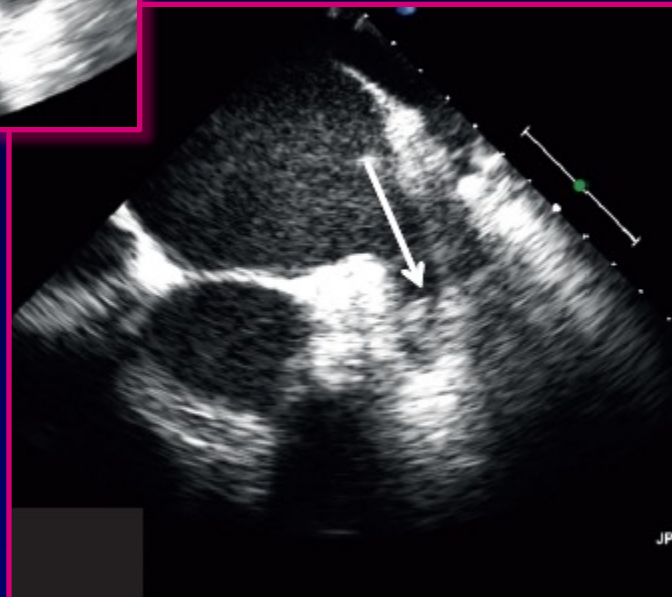
Resolution of giant left atrial appendage thrombus with rivaroxaban

Hammerstingl, Thrombosis and Haemost '13



- **Rivaroxaban**
4 weeks

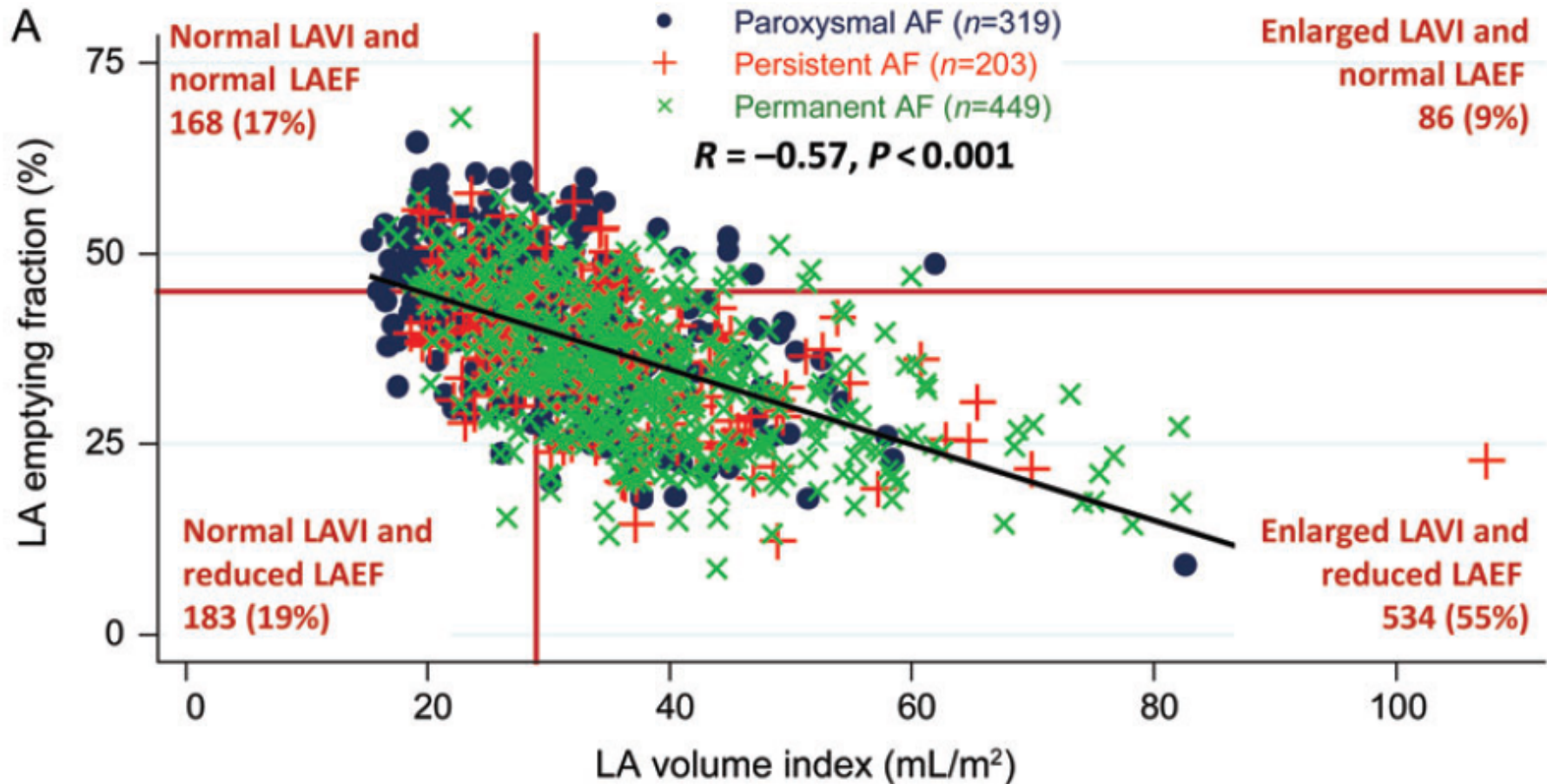
6 weeks



- **No AC**
baseline

Left atrial structure and function in atrial fibrillation: ENGAGE AF-TIMI 48

Gupta, Eur Heart J '14



Validità e limiti dell'ETE nella FA

1. Cardioversione guidata con eco TE
 2. **Indicazioni terapia anticoagulante (insieme a criteri clinici)**
 3. Ausilio nella scelta warfarin / nuovo AC
- Diagnosi eziologica
 - Funzione VS
 - Dimensioni / stato AS
 - Funzione auricola sinistra
 - Altre fonti emboligene

ESC guidelines 2010+2012:

“Clinical” risk stratification for...

bleeding with
HAS-BLED score

embolism with
CHA₂DS₂Vasc score

Letter	Clinical characteristic ^a	Points awarded
H	Hypertension	1
A	Abnormal renal and liver function (1 point each)	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INRs	1
E	Elderly (e.g. age >65 years)	1
D	Drugs or alcohol (1 point each)	1 or 2
		Maximum 9 points

Congestive heart failure/LV dysfunction	1
Hypertension	1
Age ≥75	2
Diabetes mellitus	1
Stroke/TIA/thrombo-embolism	2
Vascular disease ^a	1
Age 65–74	1
Sex category (i.e. female sex)	1
Maximum score	9

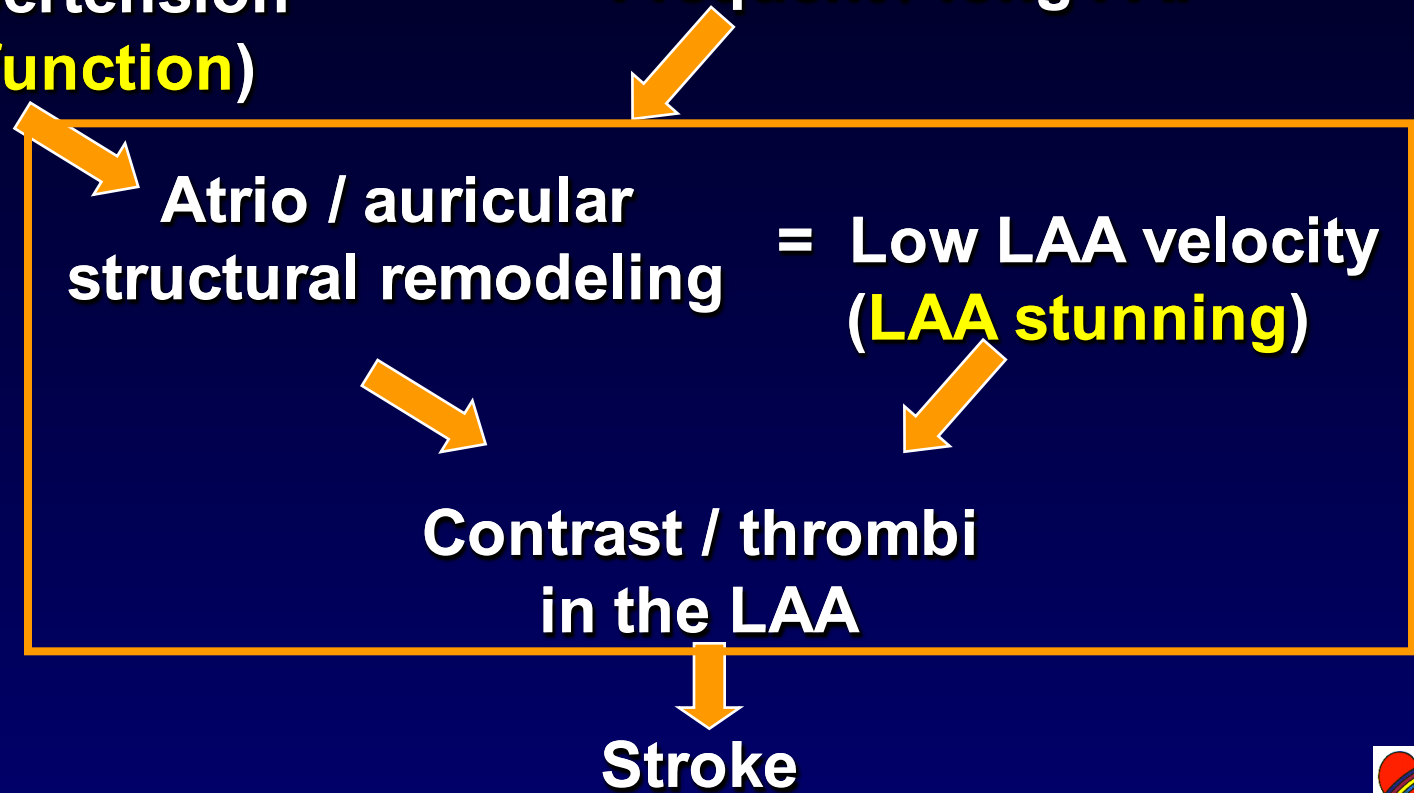
... aiuto a stratificare dall'ecocardiografia

Pathophysiologic cascade of LAA stunning in AF

Colonna P, editorial Rev Arg Cardiol 2013

Clinical risk factors
(age + hypertension
+ **LV dysfunction**)

Long lasting AF or
Frequent / long PAF



Chads **Embolic**

Vasc **risk**

≥ 4 **$\geq 4\%$**

Dab 150	110/150?	Dab 110
Dab 150	110>150?	None/110
Dab 110	110/None	None

$\leq 1\%$

3%

**$\geq 10\%$ Bleeding
risk**

0-1

2

≥ 3 Hasbled



In doubts... help from echocardiography



Chads **Embolic**

Vasc
≥ 4 **≥ 4%**

NOAC H dose	H/L dose?	L dose?
H dose	L/H dose?	L dose
L/H dose?	L dose?	L dose None?

2-3 **2-3%**

0-1 **≤ 1%**

≤ 1%

3%

**≥ 10% Bleeding
risk**

0-1

2

≥ 3 Hasbled



In doubts... help from echocardiography



Validità e limiti dell'ETE nella FA

1. **Cardioversione guidata con eco TE**
 2. **Indicazioni terapia anticoagulante (insieme a criteri clinici)**
 3. **Ausilio nella scelta warfarin / nuovo AC**
- Diagnosi eziologica
 - Funzione VS
 - Dimensioni / stato AS
 - Funzione auricola sinistra
 - Altre fonti emboligene

RE-LY (dabigatran) “History of heart valve disorders (ie, prosthetic valve or **hemodynamically relevant** valve disease)”

ROCKET-AF (rivaroxaban) Excluded: - Prosthetic heart valve;

- **Hemodynamically** significant **mitral stenosis**
- Planned invasive procedure with potential for uncontrolled bleeding, including major surgery

Included: - Annuloplasty with or without prosthetic ring,
- commissurotomy and/or valvuloplasty

ARISTOTLE (apixaban) Moderate or severe **mitral stenosis**
Conditions other than AF that required anticoagulation (e.g. a prosthetic heart valve)

ENGAGE-AF (edoxaban) Moderate or severe **mitral stenosis**;
unresected atrial myxoma, or a mechanical heart valve
(Included bioprosthetic heart valves and/or valve repair)



I nuovi anticoagulanti orali

Come utilizzarli nella fibrillazione atriale e nel tromboembolismo venoso

Paolo Colonna

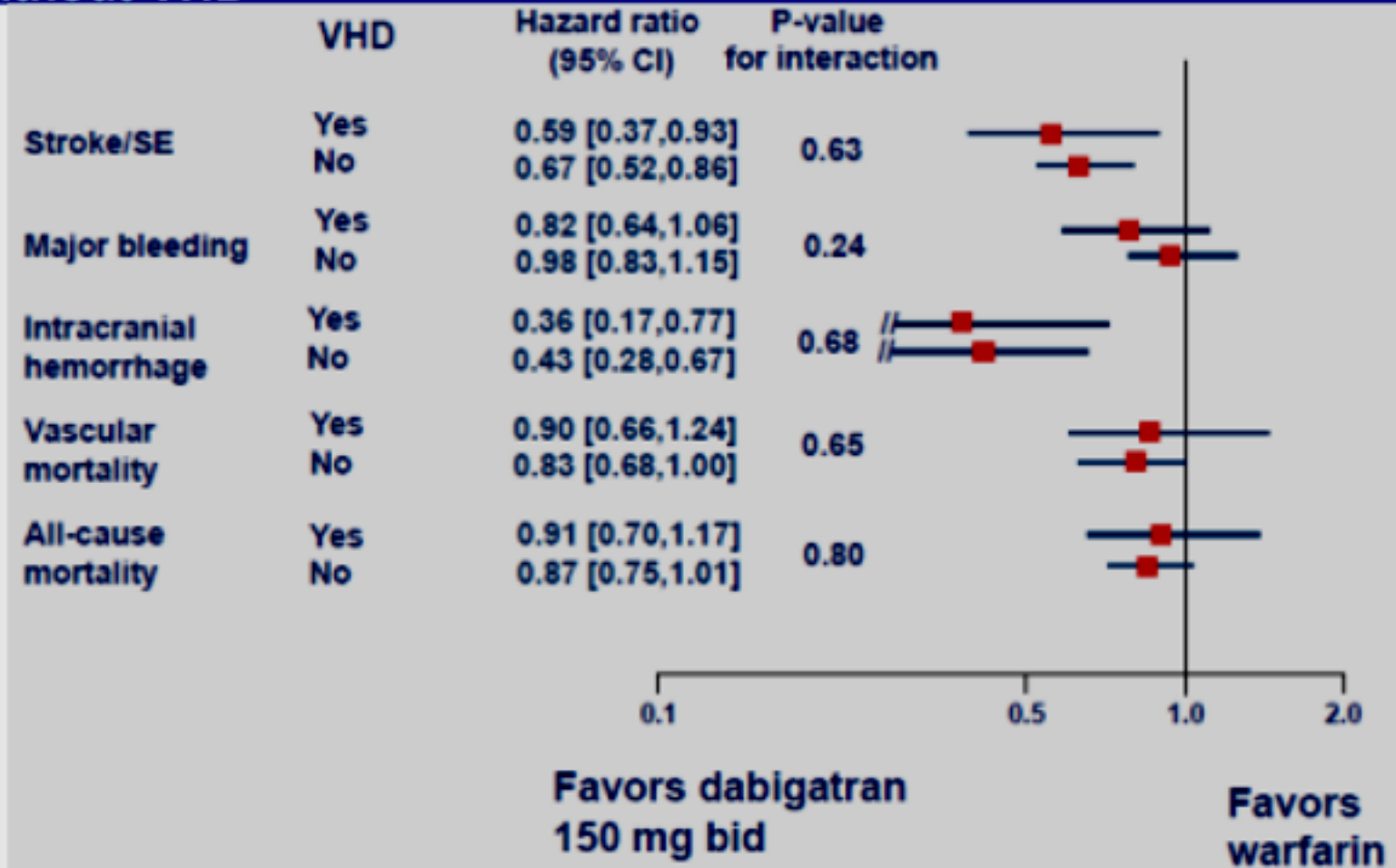
	Re-LY Ezekowitz MD et al. ACC 2014 Abs		Rocket AF Breithardt G et al. EHJ 2014 online		Aristotle Avezum A et al. ESC 2013 Abs	
Tot trials	18.113		14.171		18.201	
Tot SVD	3.950	21,8%	2.003	14,1%	4.808	26,4%
MR	3.101	78,5%	1.756	87,7%	3.526	73,3%
AR	817	20,7%	486	24,3%	887	18,4%
AS	471	11,9%	215	10,7%	384	8,0%
TR	1.179	29,8%			2.124	44,2%
mild MS	193	4,9%			131	2,7%
prior valve procedures			106	5,3%	251	5,2%

SVD: considerata **significativa** dal medico che arruolava per i riflessi sulla pratica clinica

Valvular heart disease in the RE-ly trial

Ezekowitz M et al. ACC 2014 Abs

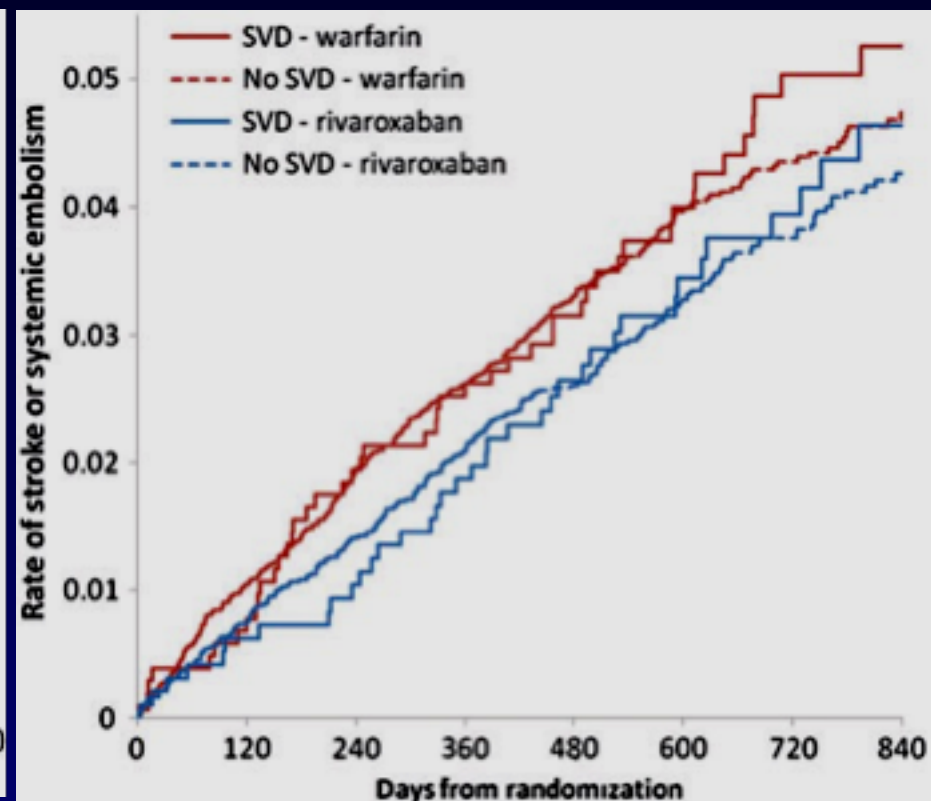
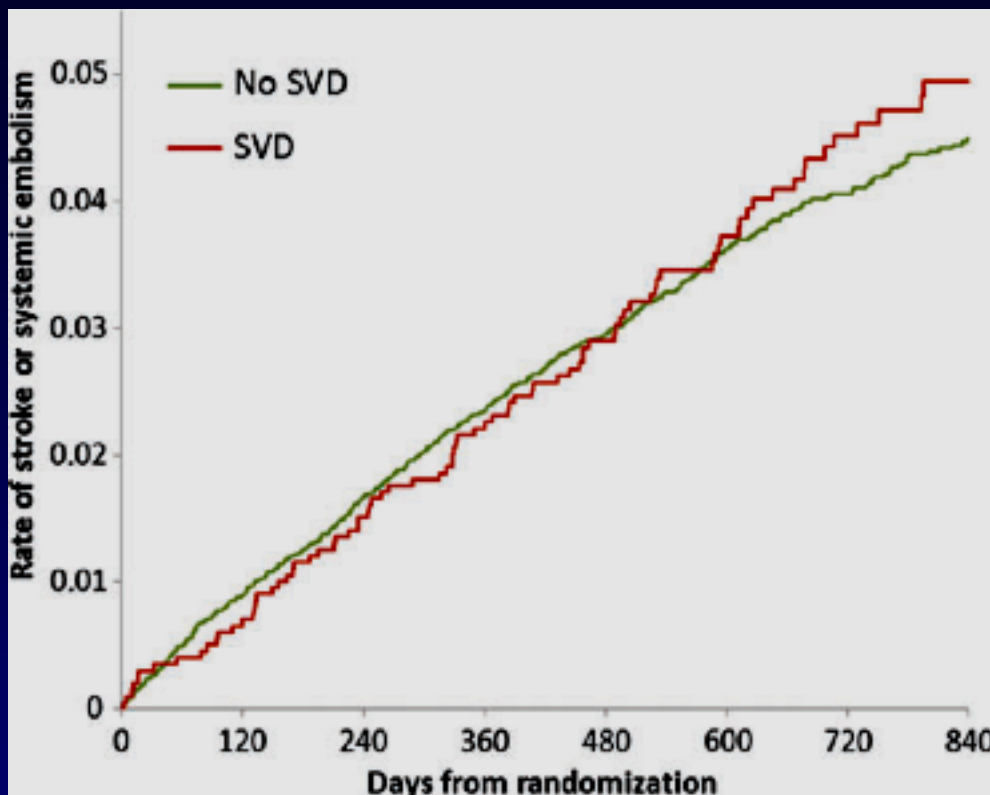
Figure 2: Hazard ratios (95% CI) for efficacy and safety outcomes for dabigatran 150 mg bid versus warfarin in patients with or without VHD



Clinical characteristics and outcomes in AF and native mitral and aortic valve disease in the ROCKET AF trial

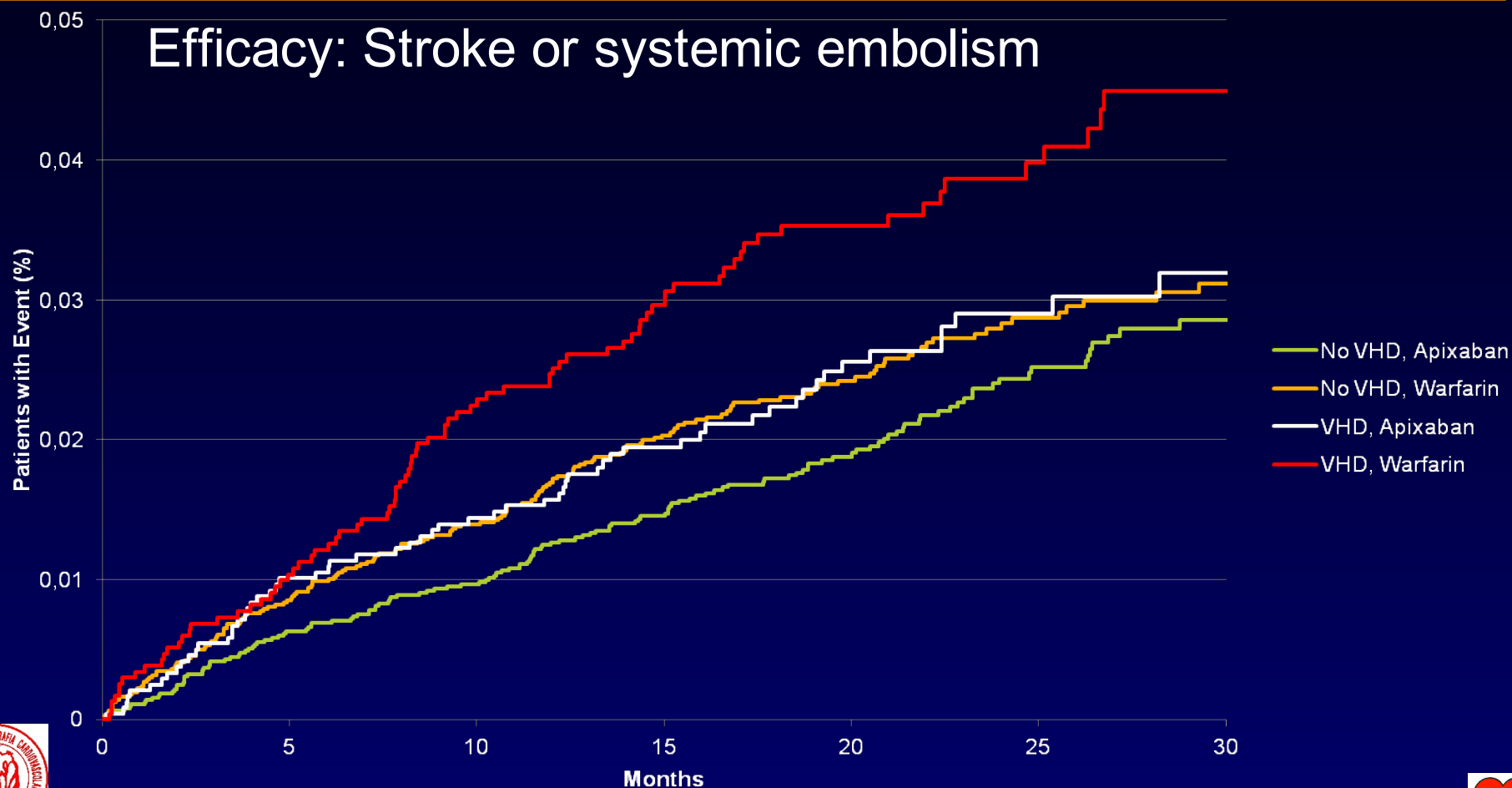
Breithardt G et al. EHJ 2014 online

Efficacy: Stroke or systemic embolism



Apixaban versus warfarin in patients with AF and valve heart disease. Findings from ARISTOTLE trial

Avezum A et al. ESC 2013 Abs



I NAO nei pazienti senza valvulopatia e con valvulopatia lieve-moderata

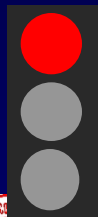


Valvulopatia moderata + severa (esclusa SM) senza intervento pianificato



Protesi valvolare biologica
Pregressa plastica valvolare $\pm$ anello

- TAVI o mitral clip



Protesi valvolare meccanica
Stenosi mitralica severa
Valvulopatia con intervento CCH pianificato

Cardioversione guidata con TEE: sempre meglio con i NOAC?

1. Valutare rischio %/anno trombotico con CHADS₂ e CHA₂DS₂VASc
Valutare rischio %/anno emorragico
2. Nei pz difficili, **aggiungere parametri eco TT** (auricola, aorta, ventr sin) **± TE** (pre cardioversione → **max NAO**)
3. Queste valutazioni → più importanti per i nuovi anticoagulanti (quando? quale? a che dosaggio? sospendere o bridging?)