Indication défibrillateur Insuffisance cardiaque

Sélim ABBEY

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Nouvelles Cliniques Nantaises

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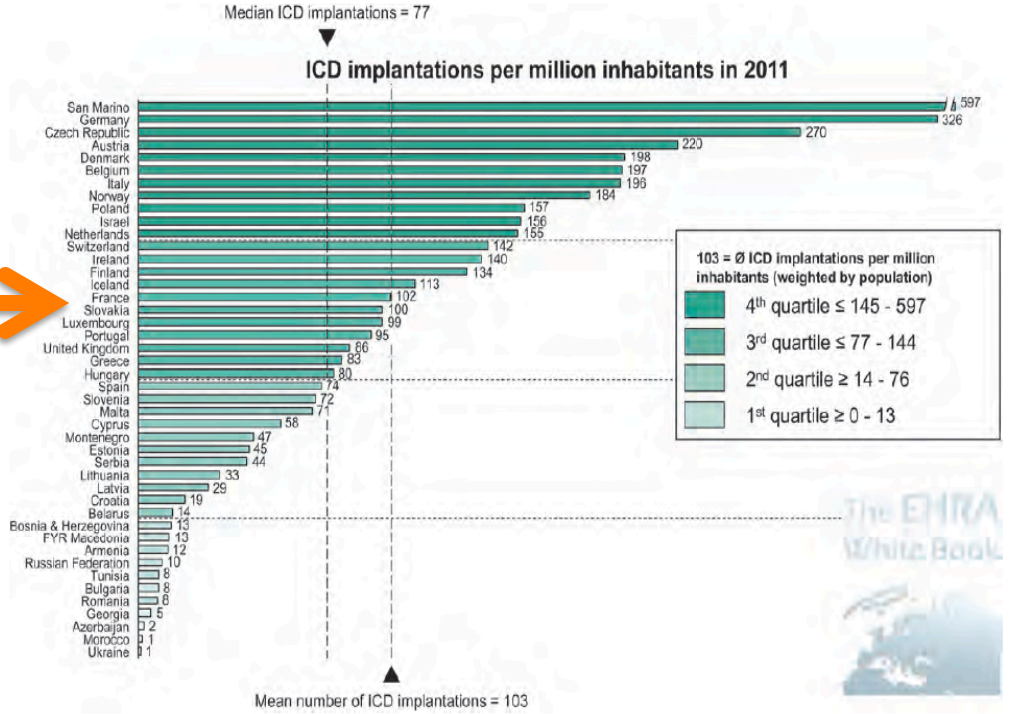
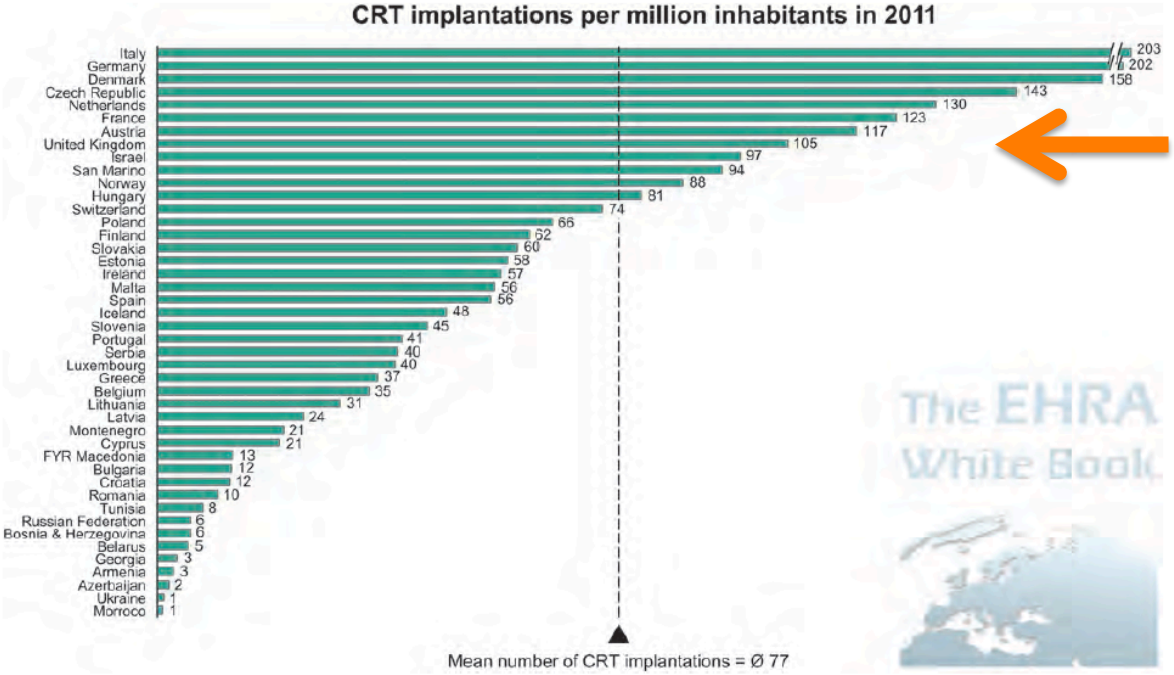
Conflits d'intérêt

Consultant : Saint Jude Medical, Medtronic, Biotronik

Taux d'implantation variable en Europe

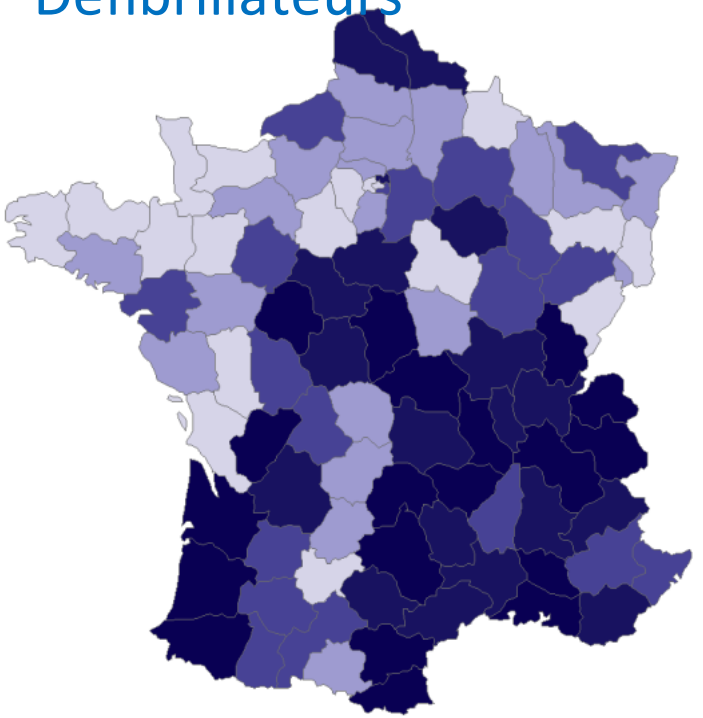


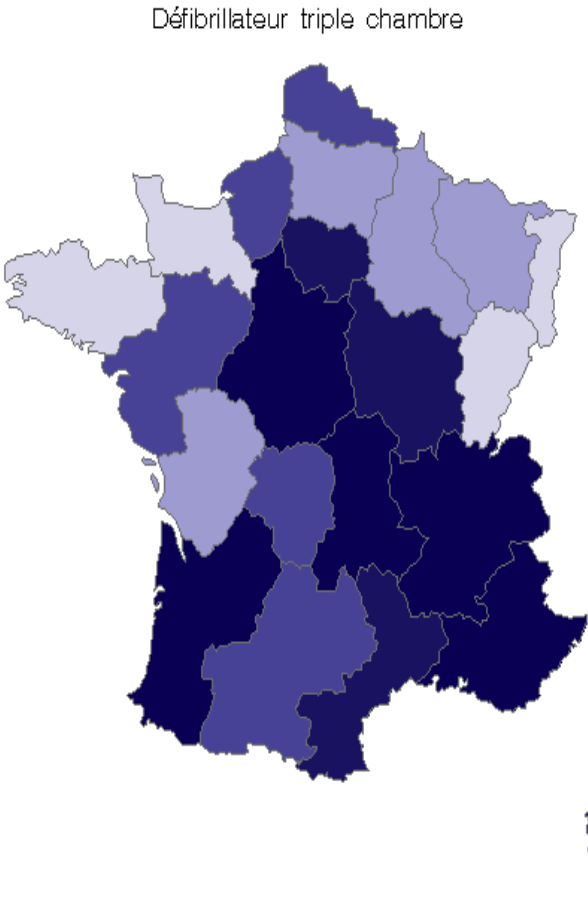


Europace (2012) 14, iii1–iii55

Taux d'implantation variable en France pour les mêmes recommandations…

Défibrillateurs





3.5 – 10.2 | 10.5 – 11.9 | 11.9 – 14.5 | 14.6 – 17.6 | 18.0 – 26.2

1.5 – 3.4 | 3.9 – 4.5 | 4.6 – 5.5 | 5.5 – 6.8 | 7.0 – 11.0

Tuppin et al, données PMSI 2009

Les recommandations européennes sont larges en prévention secondaire

Recommendations for the use of implanted cardioverter defibrillators in patients with heart failure

Recommendations	Class[a]	Level[b]	Ref[c]
Secondary prevention An ICD is recommended in a patient with a ventricular arrhythmia causing haemodynamic instability, who is expected to survive for >1 year with good functional status, to reduce the risk of sudden death.	I	A	144–147

European Heart Journal (2012) **33**, 1787–1847

Les indications EU sont larges en prévention secondaire

Cardiopathie ischémique

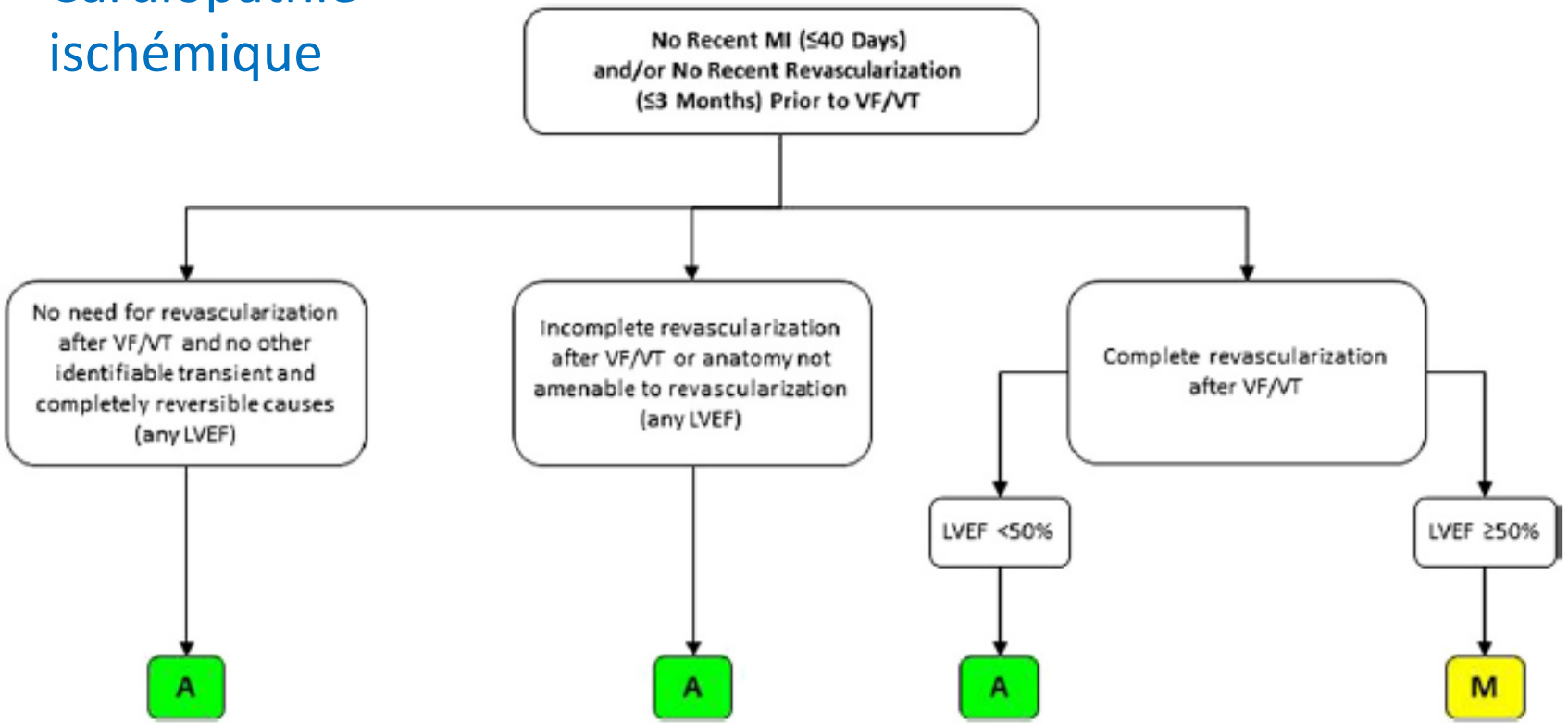


Figure 2. Secondary Prevention: VF or Hemodynamically Unstable VT With No Recent MI and/or No Recent Revascularization

A = Appropriate; LVEF = left ventricular ejection fraction; M = May Be Appropriate; MI = myocardial infarction; VF = ventricular fibrillation; VT = ventricular tachycardia.

J Am Coll Cardiol 2013;61:1318–68.

Les indications EU sont larges en prévention secondaire

Cardiopathie non ischémique

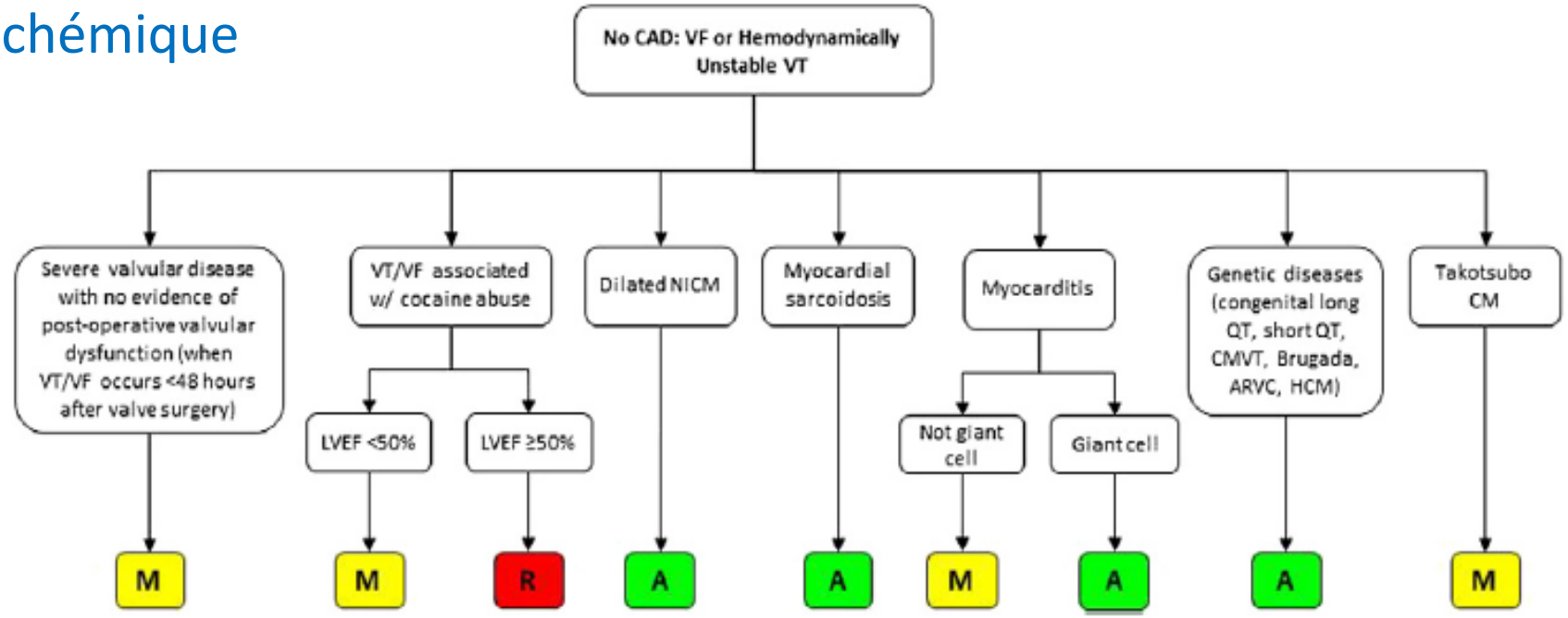


Figure 3. Secondary Prevention: VF or Hemodynamically Unstable VT—No CAD With Structural Heart Disease or Genetic Disorders

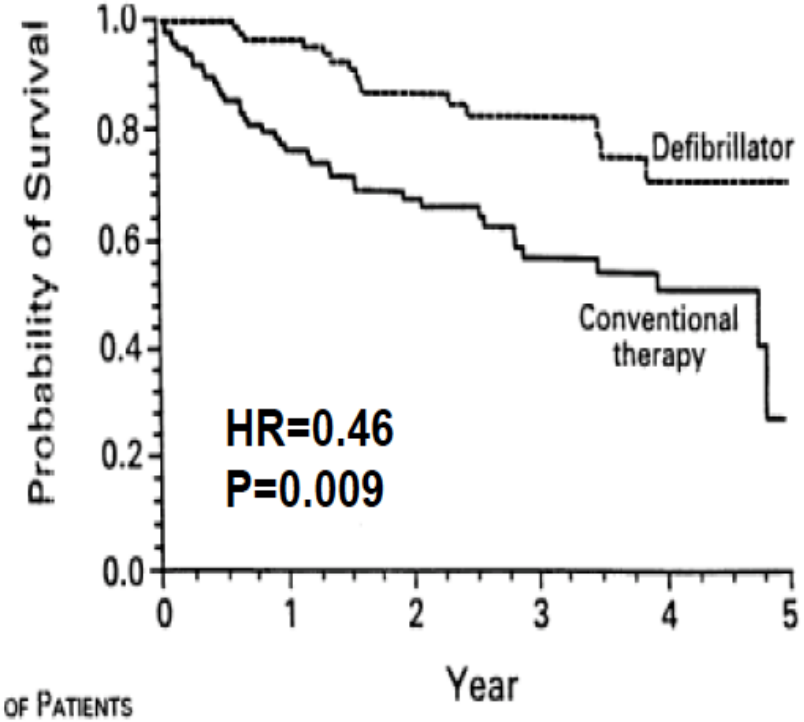
A = Appropriate; ARVC = arrhythmogenic right ventricular cardiomyopathy; CM = cardiomyopathy; CMVT = catecholaminergic polymorphic ventricular tachycardia; EPS = electrophysiological study; HCM = hypertrophic cardiomyopathy; LVEF = left ventricular ejection fraction; M = May Be Appropriate; MI = myocardial infarction; NICM = non-ischemic cardiomyopathy; R = Rarely Appropriate; VF = ventricular fibrillation; VT = ventricular tachycardia.

J Am Coll Cardiol 2013;61:1318–68.

Les études en prévention primaire sont concordantes

MADIT

Elig: Hx MI, EF≤0.30, NSVT, +EP study
N=196

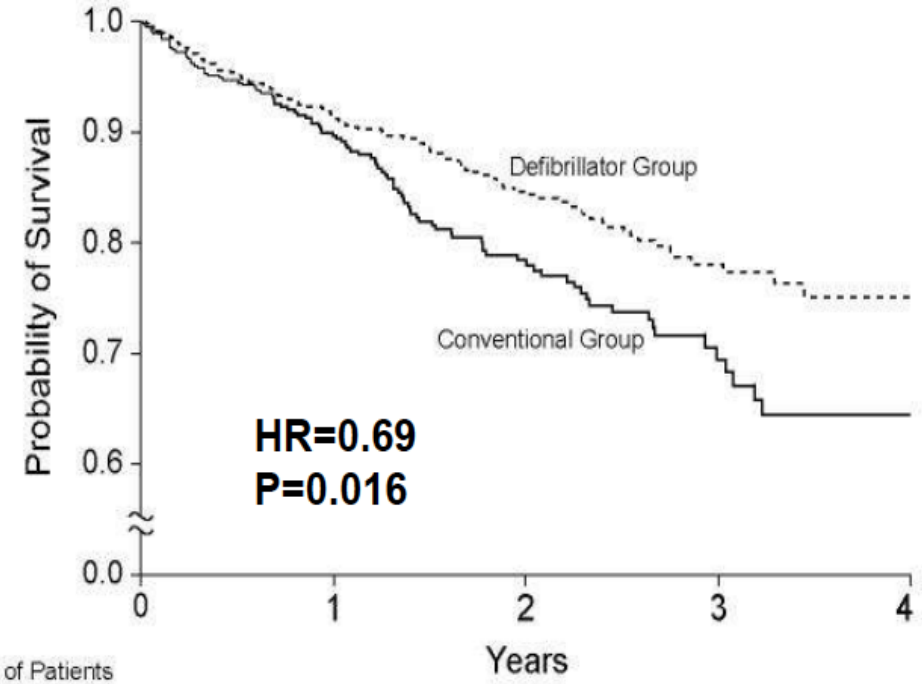


No. of Patients						
Defibrillator	95	80	53	31	17	3
Conventional therapy	101	67	48	29	17	0

Moss AJ, et al. NEJM 1996

MADIT II

Elig: Hx MI, EF≤30%
N=1232



No. of Patients					
Defibrillator:	742	503	273	110	9
Conventional:	490	329	170	65	3

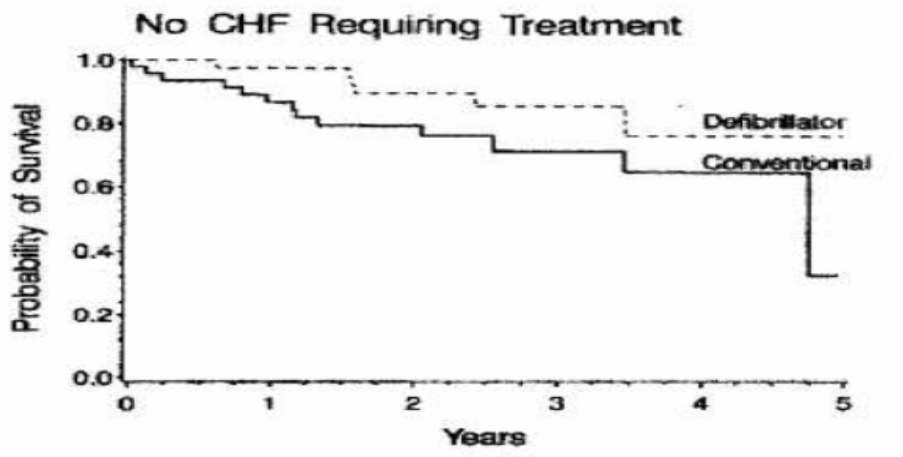
Moss AJ, et al. NEJM 2002

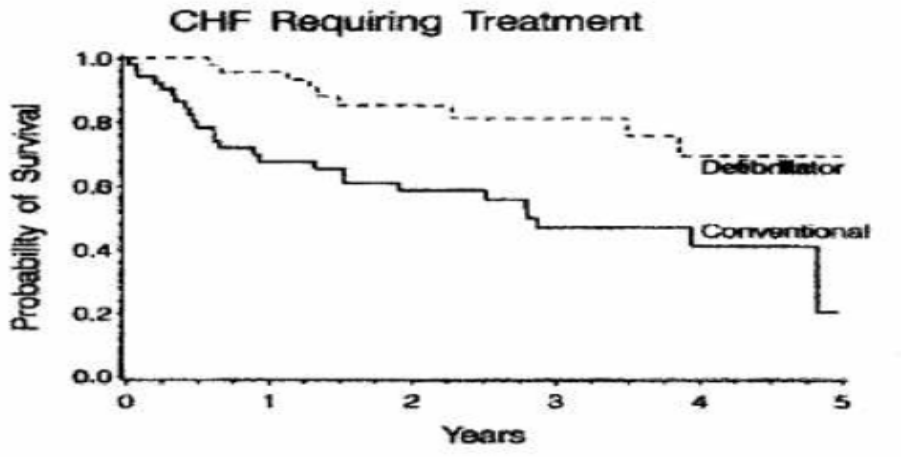
Impact de la FE : les principales études

TRIAL	EF	FU	MORTALITY ICD	MORTALITY PLACEBO	RRR	ARR	NNT
MADIT*)	≤35%	27 m	15,8%	38,6%	59%	22,8%	4
MADIT II	≤30%	20 m	14,2%	19,8%	28%	5,6%	18
MUSTT*)	≤40%	39 m	24%	55%	55%	31%	3
SCD-HeFT	≤35%	45,5 m	28,9%	36,1%	20%	7,2%	14
AMIOVIRT	≤35%	36 m	12%	13%	8%	1,0%	100
DEFINITE	≤35%	24 m	7,9%	14,1%	44%	6,2%	16

Madit I et II : impact de l'insuffisance cardiaque

MADIT





Moss AJ, et al. NEJM 1996

MADIT II

Risk Factors for Appropriate ICD Rx

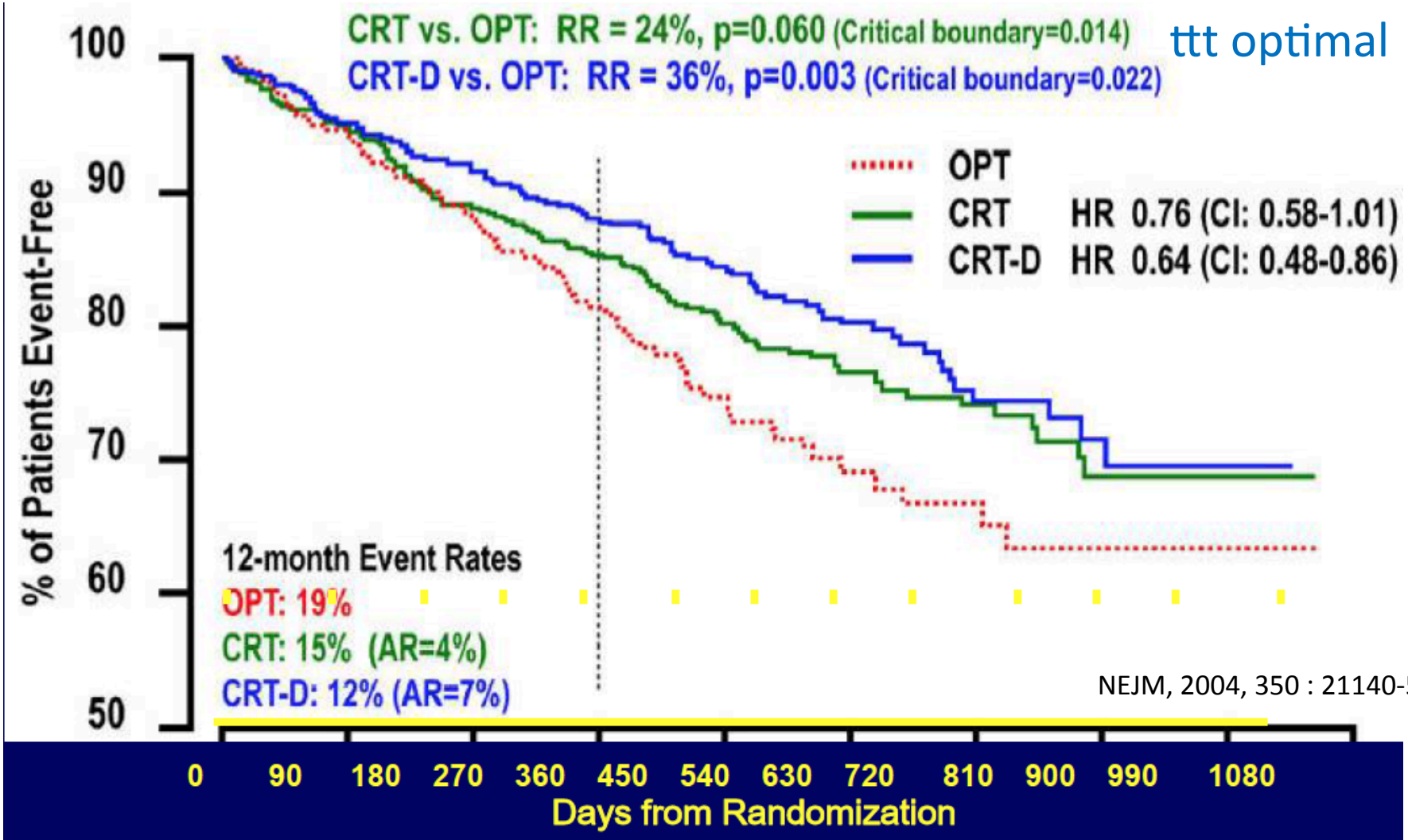
	Hazard Ratio	P-value
HF event*	2.5	0.001
MI/UA*	1.4	0.19

=> Traitement de l'insuffisance cardiaque…

Moss AJ, et al. NEJM 2002

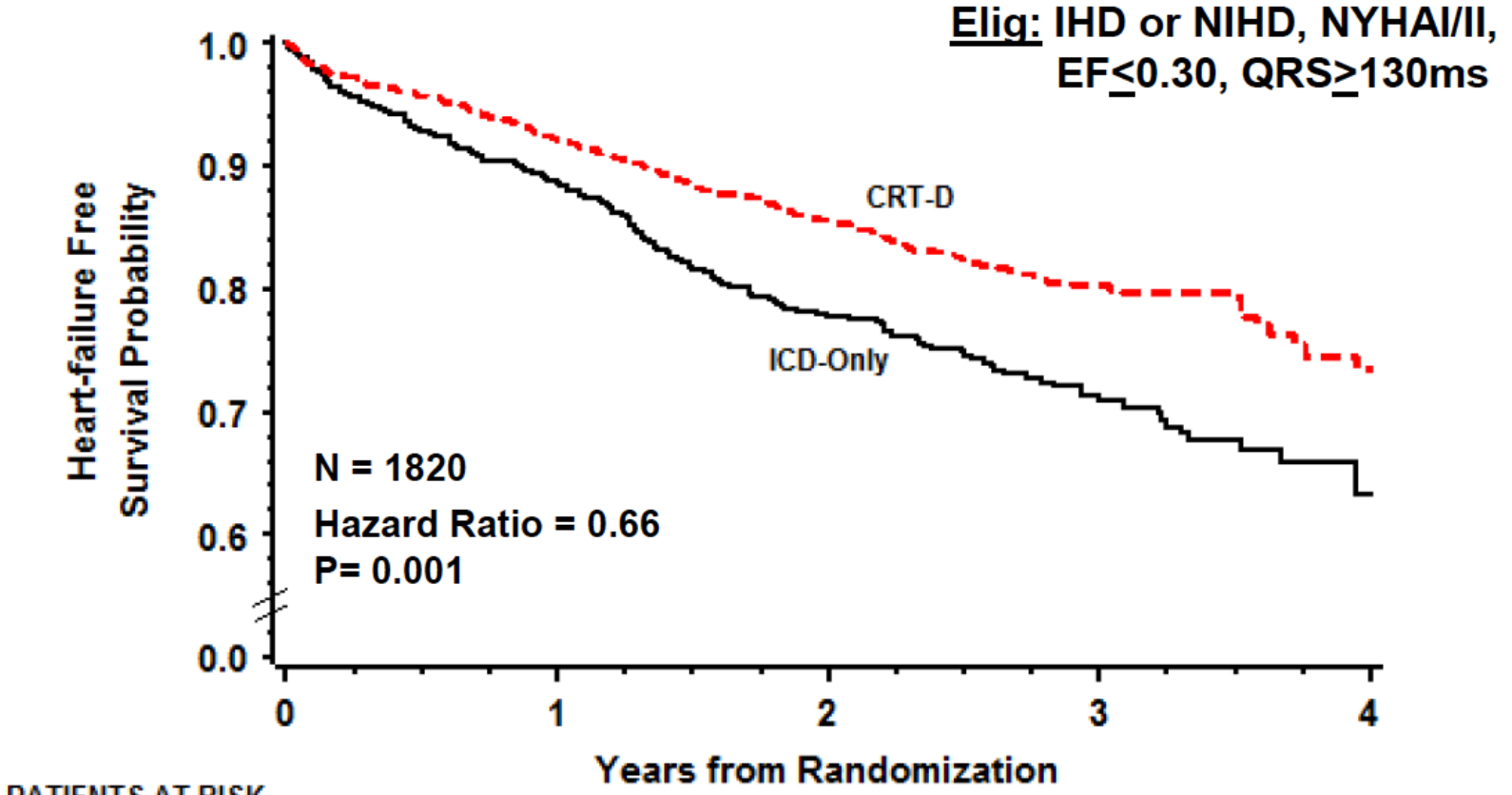
Companion : patient très symptomatique d'insuffisance cardiaque

Elig : NYHA III ou IV, FE< 35% QRS > 120 ms, ttt optimal



NEJM, 2004, 350 : 21140-50

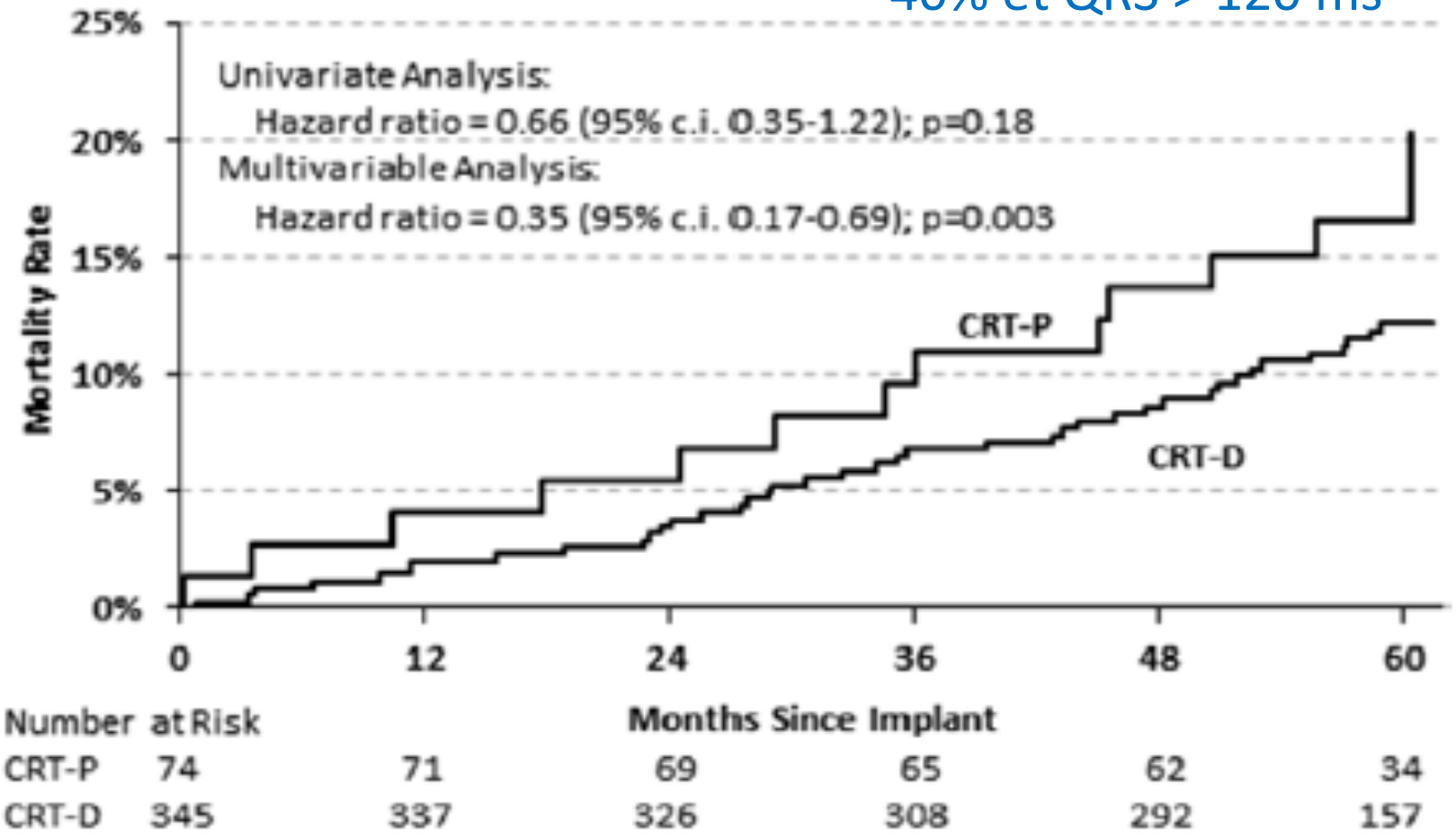
MADIT-CRT : patient paucisymptomatique de l'insuffisance cardiaque



Moss AJ, et al. NEJM 2009

Reverse : résultats à 5 ans

Elig : NYHA I ou II, FE< 40% et QRS > 120 ms



Gold et al, Circ arrhythm Electrophysiol 2013, 6 : 1163-68

Le CRTD, la meilleure association quand les QRS sont larges?

Table 16 Probability of best treatment for patients with left ventricular dysfunction (from a meta-analysis of 12 RCTs)[131]

Therapy	All studies		NYHA III or IV HF	
	Overall mortality (%)	Probability of best treatment	Overall mortality (%)	Probability of best treatment
Medical	14.0	0	13.7	0
CRT	10.3	0.14	10.5	0.27
ICD	10.6	0.10	12.2	0.08
CRT + ICD	9.1	0.75	9.7	0.62

CRT = cardiac resynchronization therapy; HF = heart failure; ICD = implantable cardioverter defibrillator; NYHA = New York Heart Association; RCTs = randomized

Indications for cardiac resynchronization therapy in patients in sinus rhythm

Recommendations	Class[a]	Level[b]	Ref.[c]
1) LBBB with QRS duration >150 ms. CRT is recommended in chronic HF patients and LVEF ≤35% who remain in NYHA functional class II, III and ambulatory IV despite adequate medical treatment.[d]	I	A	48–64
2) LBBB with QRS duration 120–150 ms. CRT is recommended in chronic HF patients and LVEF ≤35% who remain in NYHA functional class II, III and ambulatory IV despite adequate medical treatment.[d]	I	B	48–64
3) Non-LBBB with QRS duration >150 ms. CRT should be considered in chronic HF patients and LVEF ≤35% who remain in NYHA functional class II, III and ambulatory IV despite adequate medical treatment.[d]	IIa	B	48–64

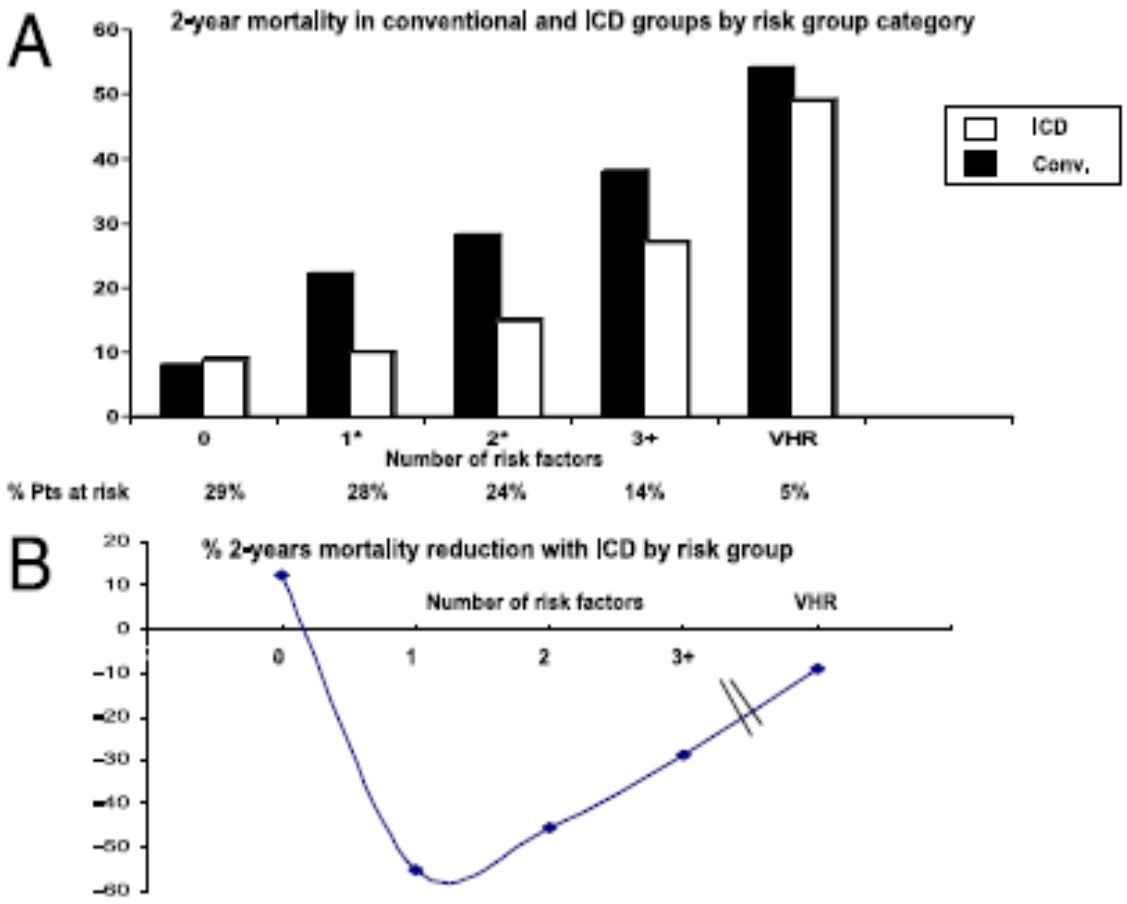
Indication for concomitant implantable cardioverter defibrillator (cardiac resynchronization therapy and defibrillator)

Recommendations	Class[a]	Level[b]	Ref.[c]
1) When an ICD is planned,[d] a CRT is recommended when indicated.	I	A	50, 53, 54, 60, 62 (see also sections 3.2 and 3.3)
2) When a CRT is planned, implantation of CRT-D device should be considered in patients with clinical conditions listed in *Table 17*.	IIa	B	46, 55, 57, 131

CRT = cardiac resynchronization therapy; CRT-D = CRT and defibrillator; CRT-P = CRT and pacemaker; ICD = implantable cardioverter defibrillator.

European Heart Journal (2013) **34**, 2281–232

L'impact des comorbidités sur la survie



Madit II

Âge > 70 ans (HR= 1,57),
NYHA≥ II (HR= 1,87),
Urée > 26mg/dl (HR= 1,56)
QRS > 120 ms (HR=1,65),
Fibrillation atriale (HR=1,85)

JACC, 2012,59(23): 2075-9

Les comorbidités

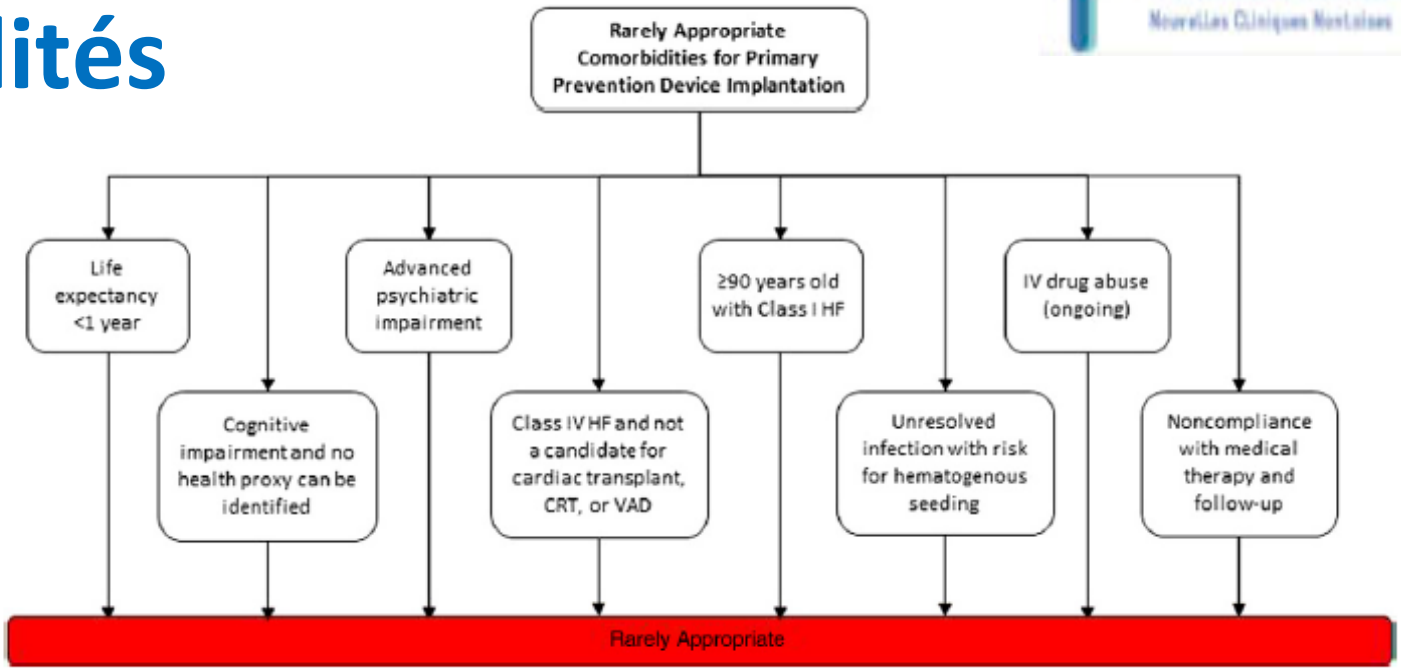


Figure 14. Primary Prevention: Comorbidities (Rarely Appropriate Indications) J Am Coll Cardiol 2013;61:1318–68.

Table 17 Clinical guidance to the choice of CRT-P or CRT-D in primary prevention

Factors favouring CRT-P	Factors favouring CRT-D
Advanced heart failure	Life expectancy >1 year
Severe renal insufficiency or dialysis	Stable heart failure, NYHA II
Other major co-morbidities	Ischaemic heart disease (low and intermediate MADIT risk score)
Frailty	Lack of comorbidities
Cachexia	

CRT-D = cardiac resynchronization therapy and defibrillator; CRT-P = cardiac resynchronization therapy and pacemaker; MADIT = Multicentre Automatic Defibrillator Trial; NYHA = New York Heart Association.

European Heart Journal (2013) **34**, 2281–2329

Indication du DAI – Cardiopathie ischémique

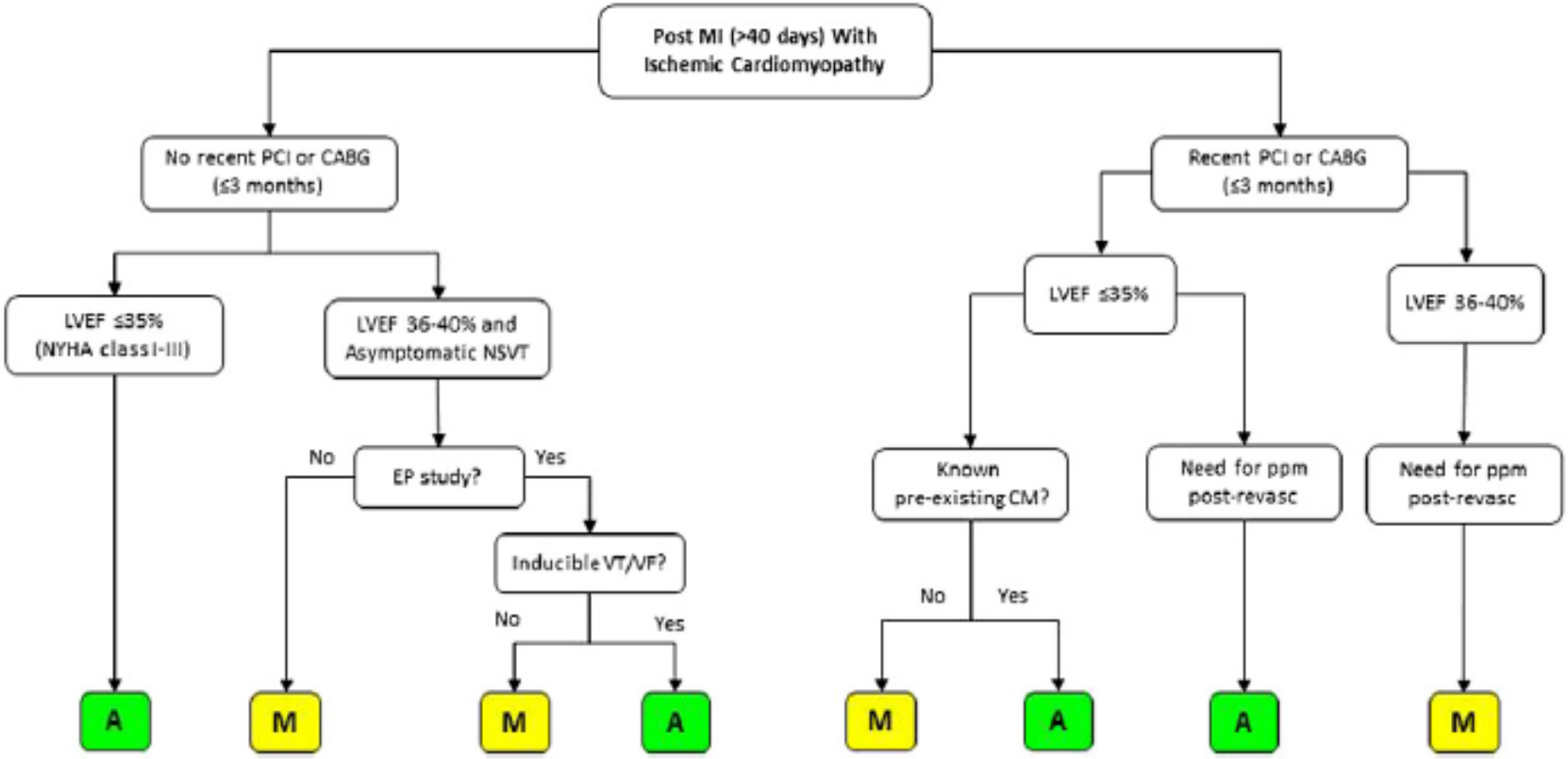


Figure 10. Primary Prevention: Coronary Artery Disease, Prior MI (>40 Days) With Ischemic Cardiomyopathy

A = Appropriate; CABG = coronary artery bypass graft; CM = cardiomyopathy; EPS = electrophysiological study; LVEF = left ventricular ejection fraction; M = May Be Appropriate; MI = myocardial infarction; NSVT = nonsustained ventricular tachycardia; NYHA = New York Heart Association; PCI = percutaneous coronary intervention; ppm = permanent pacemaker; VF = ventricular fibrillation; VT = ventricular tachycardia.

J Am Coll Cardiol 2013;61:1318–68.

Indication du DAI – Cardiopathie non ischémique

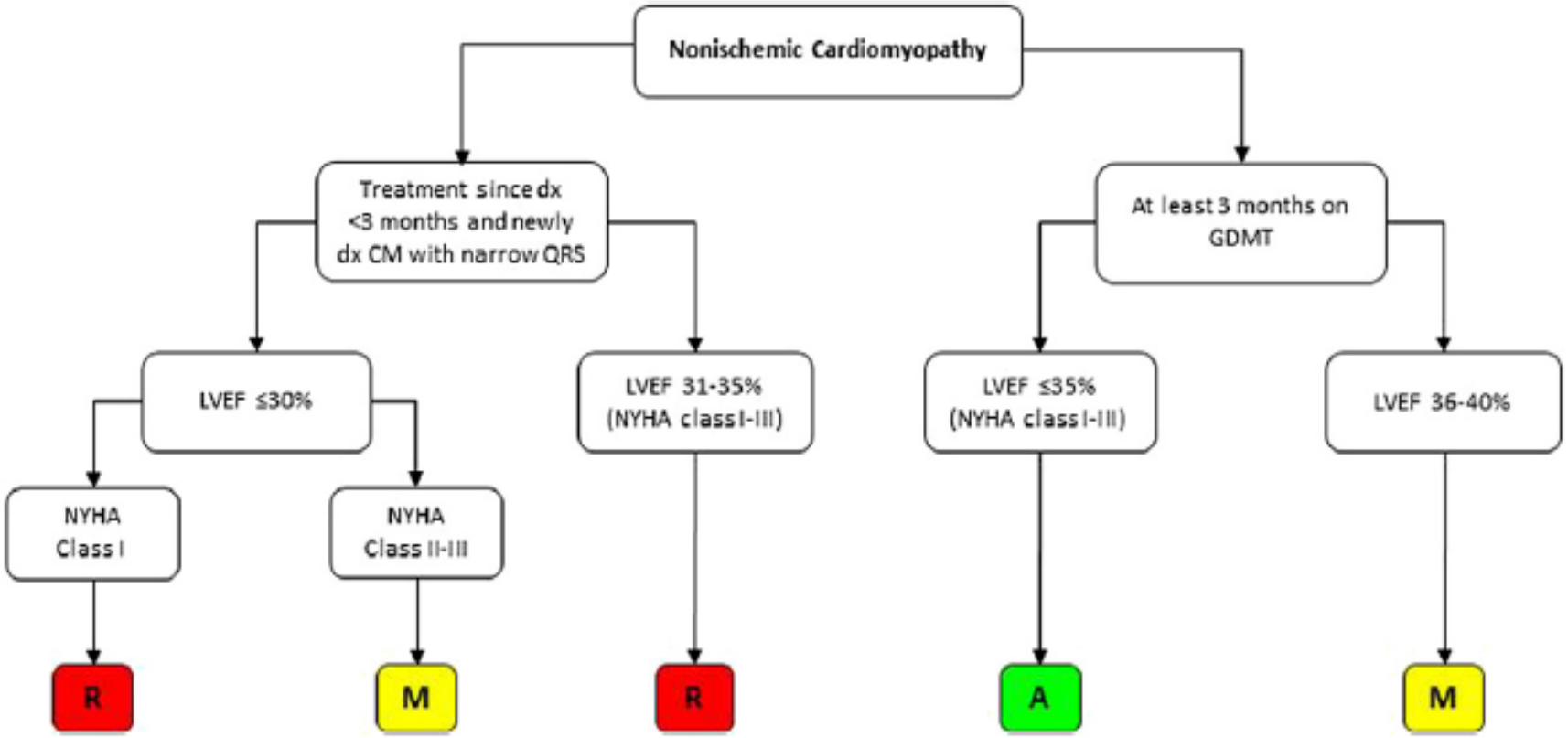


Figure 11. Primary Prevention: Nonischemic Cardiomyopathy

A = Appropriate; CM = cardiomyopathy; dx = diagnosis; GDMT = guideline-directed medical therapy; LVEF = left ventricular ejection fraction; M = May Be Appropriate; NYHA = New York Heart Association; R = Rarely Appropriate.

J Am Coll Cardiol 2013;61:1318–68.

Des recommandations européennes claires

Recommendations for the use of implanted cardioverter defibrillators in patients with heart failure

Recommendations	Class[a]	Level[b]	Ref[c]
Primary prevention An ICD is recommended in a patient with symptomatic HF (NYHA class II–III) and an EF ≤35% despite ≥3 months of treatment with optimal pharmacological therapy, who is expected to survive for >1 year with good functional status, to reduce the risk of sudden death			
(i) Ischaemic aetiology and >40 days after acute myocardial infarction	I	A	148, 149
(ii) Non-ischaemic aetiology	I	B	149

European Heart Journal (2012) **33**, 1787–1847

En conclusion

- Chez le patient insuffisant cardiaque,
- Penser au DAI quand **FE< 35%,**
- Après 6 semaines de **traitement optimisé**
- En l'absence de comorbidité trop importante
- Indication de **CRT quand QRS > 120 ms**
- Place de la **télécardiologie** importante (FA, pesée,…)
- Place du DAI sous cutané chez les patients en attente de greffe avec CMD primitive?