

Table D20: Clinical predictors reported in the studies assessing response of CRT D

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
Gold,2011 ³⁶ SMART AV Sub Study	Overall	Predictor: Age Definition: Per 1 year increase Unit: years	426	6 months	NR	Cox regression	NR	HR: NR OR: 1 RD: NR 95% CI: 0.98- 1.02 p: 0.81
	Overall	Predictor: Gender Definition: Male vs. Female Unit: NA	426	6 months	NR	Cox regression	NR	HR: NR OR: 0.53 RD: NR 95% CI: 0.33- 0.85 p: 0.008
	Overall	Predictor: Cardiomyopathy subtype - DEFINE Definition: Ischemic vs. Non Ischemic Unit: NA	426	6 months	NR	Cox regression	NR	HR: NR OR: 0.58 RD: NR 95% CI: 0.37- 0.91 p: 0.019
	Overall	Predictor: QRS duration Definition: >150ms vs. </=150ms Unit: ms	426	6 months	NR	Cox regression	NR	HR: NR OR: 0.86 RD: NR 95% CI: 0.53- 1.40 p: 0.543
	Overall	Predictor: QRS morphology - DEFINE Definition: LBBB	426	6 months	NR	Cox regression	NR	HR: NR OR: 1.2 RD: NR 95% CI: 0.72- 2.01

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		vs. Non LBBB Unit: NA						p: 0.48
	Overall	Predictor: Left ventricular ejection fraction Definition: Per 1% increase Unit: %	426	6 months	NR	Cox regression	NR	HR: NR OR: 0.98 RD: NR 95% CI: 0.94- 1.01 p: 0.186
Goldenberg,2011 ¹² MADIT CRT Sub Study	CRT D (High Response Group)	Predictor: Gender Definition: Women Unit: NA	275	12 months	94	Other: RCT	NR	HR: NR OR: NR RD: -4.4 95% CI: p: 0.01
	CRT D (Low Response Group)	Predictor: Gender Definition: Men Unit: NA	814	12 months	88	Other: RCT	NR	HR: NR OR: NR RD: 95% CI: p:
	CRT D (High Response Group)	Predictor: Cardiomyopathy subtype - DEFINE Definition: Non Ischemic Unit: NA	491	12 months	93	Other: RCT	NR	HR: NR OR: NR RD: -4.6 95% CI: p: <0.001
	CRT D (Low Response Group)	Predictor: Cardiomyopathy subtype - DEFINE	598	12 months	87	Other: RCT	NR	HR: NR OR: NR RD: 95% CI:

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		Definition: Ischemic Unit: NA						p:
	CRT D (High Response Group)	Predictor: QRS duration Definition: >=150 Unit: ms	688	12 months	92	Other: RCT	NR	HR: NR OR: NR RD: -3.6 95% CI: p: 0.004
	CRT D (Low Response Group)	Predictor: QRS duration Definition: <150 Unit: ms	383	12 months	85	Other: RCT	NR	HR: NR OR: NR RD: 95% CI: p:
	CRT D (High Response Group)	Predictor: QRS morphology - DEFINE Definition: LBBB Unit: NA	750	12 months	92	Other: RCT	NR	HR: NR OR: NR RD: -5.3 95% CI: p: <0.001
	CRT D (Low Response Group)	Predictor: QRS morphology - DEFINE Definition: Non- LBBB Unit: NA	321	12 months	85	Other: RCT	NR	HR: NR OR: NR RD: 95% CI: p:
Shen,2009 ⁷³	Overall	Predictor: Gender Definition: NS	95	NR	NR	Cox regression	NR	HR: NR OR: NR RD: NR 95% CI: 0.03-

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		Unit: NS						2.97 p: NR
	Overall	Predictor: Age Definition: NS Unit: NA	95	NR	NR	Cox regression	NR	HR: NR OR: NR RD: NR 95% CI: 0.91- 1.11 p: NR
	Overall	Predictor: QRS duration Definition: NS Unit: ms	95	NR	NR	Cox regression	NR	HR: NR OR: NR RD: NR 95% CI: 1- 1.08 p: NR
	Overall	Predictor: Left ventricular ejection fraction Definition: NS Unit: %	95	NR	NR	Cox regression	NR	HR: NR OR: NR RD: NR 95% CI: 0.96- 1.30 p: NR
	Overall	Predictor: QRS morphology - DEFINE Definition: RV- LBBB Unit: NS	95	NR	NR	Cox regression	NR	HR: NR OR: NR RD: NR 95% CI: 2- 111.85 p: NR
Mascioli,2012 ⁶⁴	Overall	Predictor: QRS morphology - DEFINE Definition: True LBBB Unit: NA	111	NR	NR	Cox regression	NR	HR: 4.5 OR: NR RD: NR 95% CI: 1.36- 8.28 p: 0.002

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
	Overall	Predictor: Gender Definition: Female Unit: NA	111	NR	NR	Cox regression	NR	HR: 1.22 OR: NR RD: NR 95% CI: 0.54- 2.67 p: NS
Penn, 2010 ¹⁷ MADIT CRT Sub Study	CRT-D	Predictor: Age Definition: Age >75 Unit: years	331	3 years	NR	Cox regression	NR	HR: 1.14 OR: NR RD: NR 95% CI: 0.55- 2.33 p: 0.728
	CRT-D	Predictor: Age Definition: Age 60-74 Unit: years	941	3 years	NR	Cox regression	NR	HR: 0.73 OR: NR RD: NR 95% CI: 0.45- 1.17 p: 0.191
	CRT-D	Predictor: Age Definition: Age <60 Unit: years	548	3 years	NR	Cox regression	NR	HR: 1.3 OR: NR RD: NR 95% CI: 0.56- 3.04 p: 0.547
Shen,2011 ⁷⁵	Overall	Predictor: Gender Definition: NA Unit: NA	136	NR	NR	Cox regression	NR	HR: NR OR: 0.26 RD: NR 95% CI: 0.04- 1.65 p: 0.15
	Overall	Predictor: Age Definition: NA Unit: NA	136	NR	NR	Cox regression	NR	HR: NR OR: 0.97 RD: NR 95% CI: 0.88- 1.08 p: 0.6

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
	Overall	Predictor: QRS duration Definition: NA Unit: ms	136	NR	NR	Cox regression	NR	HR: NR OR: 1.03 RD: NR 95% CI: 0.995-1.07 p: 0.09
	Overall	Predictor: Cardiomyopathy subtype - DEFINE Definition: Ischemic Unit: NA	136	NR	NR	Cox regression	NR	HR: NR OR: 0.74 RD: NR 95% CI: 0.04- 12.87 p: 0.84
Bristow,2004 ²⁹ COMPANION	Pace maker defibrillator v Pharmacological therapy	Predictor: Cardiomyopathy subtype - DEFINE Definition: Non ischemic cardiomyopathy Unit: NA	903	NR	NR	Other: RCT	NR	HR: 0.5 OR: NR RD: NR 95% CI: 0.29- 0.88 p: 0.015
	Pace maker defibrillator v Pharmacological therapy	Predictor: Cardiomyopathy subtype - DEFINE Definition: Ischemic cardiomyopathy Unit: NA	903	NR	NR	Other: RCT	NR	HR: 0.73 OR: NR RD: NR 95% CI: 0.52- 1.04 p: 0.082
	Pace maker v Pharmacological therapy	Predictor: Cardiomyopathy subtype -	925	NR	NR	Other: RCT	NR	HR: 0.91 OR: NR RD: NR

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		DEFINE Definition: Non ischemic cardiomyopathy Unit: NA						95% CI: 0.55- 1.49 p: 0.7
	Pace maker v Pharmacological therapy	Predictor: Cardiomyopathy subtype - DEFINE Definition: Ischemic cardiomyopathy Unit: NA	925	NR	NR	Other: RCT	NR	HR: 0.72 OR: NR RD: NR 95% CI: 0.51- 1.01 p: 0.058
Rickard,2013 ⁷⁰	Overall	Predictor: QRS duration Definition: NA Unit: NA	112	NR	64.3	Cox regression	NR	HR: NR OR: 0.02 RD: NR 95% CI: 0.001-0.42 p: 0.01
Shanks,2011 ⁷²	Non Responders	Predictor: Gender Definition: Male Unit: NA	254	6 months	NR	Cox regression	NR	HR: NR OR: 1.504 RD: NR 95% CI: 0.814-2.777 p: 0.192
	Non Responders	Predictor: QRS duration Definition: NA Unit: ms	254	6 months	NR	Cox regression	NR	HR: NR OR: 0.994 RD: NR 95% CI: 0.986-1.002 p: 0.119
Cheng, 2012 ³⁵	Overall	Predictor: Gender	846	6 months	NR	Linear regression	NR	HR: NR OR: NR

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
SMART AV Sub Study		Definition: NA Unit: NA						RD: 4.66 95% CI: NR p: 0.002
	Overall	Predictor: Age Definition: per 5 year increase Unit: years	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: -1.03 95% CI: NR p: 0.002
	Overall	Predictor: Left ventricular ejection fraction Definition: NA Unit: %	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: 0.07 95% CI: NR p: 0.559
	Overall	Predictor: QRS duration Definition: per 10 ms increase Unit: ms	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: -1.08 95% CI: NR p: 0.002
	Overall	Predictor: QRS morphology - DEFINE Definition: LBBB vs non-LBBB Unit: NA	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: -4.77 95% CI: NR p: 0.004
	Overall	Predictor: Cardiomyopathy subtype - DEFINE	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: 5.3 95% CI: NR p: 0.002

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		Definition: Ischemic cardiomyopathy Unit: NA						
	Overall	Predictor: History of atrial fibrillation Definition: NA Unit: NA	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: 0.14 95% CI: NR p: 0.945
	Overall	Predictor: Chronic kidney disease Definition: NA Unit: NA	846	6 months	NR	Linear regression	NR	HR: NR OR: NR RD: 3.65 95% CI: NR p: 0.058
Shen,2009 ⁷⁴	Overall	Predictor: Age Definition: NA Unit: Years	108	NR	NR	Cox regression	NR	HR: NR OR: 0.99 RD: NR 95% CI: 0.93- 2.34 p: 0.71
	Overall	Predictor: Gender Definition: NA Unit: NA	108	NR	NR	Cox regression	NR	HR: NR OR: 0.51 RD: NR 95% CI: 0.11- 2.34 p: 0.38
	Overall	Predictor: QRS duration Definition: NA Unit: ms	108	NR	NR	Cox regression	NR	HR: NR OR: 1.02 RD: NR 95% CI: 1- 1.04 p: 1

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
	Overall	Predictor: QRS morphology - DEFINE Definition: LBBB Unit: NA	108	NR	NR	Cox regression	NR	HR: NR OR: 0.58 RD: NR 95% CI: 0.06- 4.89 p: 0.06
	Overall	Predictor: Left ventricular ejection fraction Definition: NA Unit: %	108	NR	NR	Cox regression	NR	HR: NR OR: 1.03 RD: NR 95% CI: 0.93- 1.14 p: 0.93
Hsu,2012 ¹⁴ MADIT CRT Sub Study	CRTD	Predictor: Gender Definition: Female Unit: NA	752	6 months	NR	Cox regression	NR	HR: NR OR: 1.96 RD: 95% CI: 1.32- 2.90 p: 0.001
	CRTD	Predictor: QRS duration Definition: >/=150 Unit: ms	752	7 months	NR	Cox regression	NR	HR: NR OR: 1.79 RD: 95% CI: 1.17- 2.73 p: 0.007
	CRTD	Predictor: QRS morphology - DEFINE Definition: LBBB Unit: NA	752	8 months	NR	Cox regression	NR	HR: NR OR: 2.05 RD: 95% CI: 1.24- 3.40 p: 0.006
	CRTD	Predictor: Body mass index	752	9 months	NR	Cox regression	NR	HR: NR OR: 1.51

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		Definition: <30 Unit: kg/m2						RD: 95% CI: 1.03- 2.20 p: 0.035
	CRTD	Predictor: Left atrial volume Definition: NA Unit: ml	752	9 months	NR	Cox regression	NR	HR: NR OR: 1.47 RD: 95% CI: 1.21- 1.79 p: <0.001
Leong,2013 ⁶³	Overall	Predictor: Age Definition: NA Unit: years	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 0.991 OR: NR RD: NR 95% CI: 0.973-1.01 p: 0.3
	Overall	Predictor: Gender Definition: NA Unit: NA	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 0.82 OR: NR RD: NR 95% CI: 0.53- 1.3 p: 0.4
	Overall	Predictor: Cardiomyopathy subtype - DEFINE Definition: Non Ischemic Unit: NA	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 0.73 OR: NR RD: NR 95% CI: 0.535-0.996 p: 0.047
	Overall	Predictor: History of atrial fibrillation Definition: NA	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 1.4 OR: NR RD: NR 95% CI: 1.0- 2.0 p: 0.045

Author,Year Trial	Arm(name)	Predictors Definition Unit	N for analysis	Timepoint(s)	Proportion of responders	Model	Unadjusted result	Fully adjusted result
		Unit: NA						
	Overall	Predictor: QRS duration Definition: NA Unit: ms	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 0.997 OR: NR RD: NR 95% CI: 0.991-1.0 p: 0.4
	Overall	Predictor: Left ventricular ejection fraction Definition: Per 5% increase) Unit: %	848	44 months (median f/u time; IQR = 29-65 mos)	NA	Cox regression	NR	HR: 0.95 OR: NR RD: NR 95% CI: 0.84- 1.1 p: 0.4
Niebauer,2014 ⁶⁸	Responders	Predictor: Cardiomyopathy subtype - DEFINE Definition: Non Ischemic Unit: NA	94	NA	NR	Logistic regression	NR	OR: 1.71 95%CI: 0.82- 3.57 p: 0.152
	Responders	Predictor: QRS duration Definition: NA Unit: ms	94	NA	NR	Logistic regression	NR	OR: 0.98 95%CI: 0.96- 1.01 p: 0.123

CRT-P=Cardiac Resynchronization Therapy Paced, CRT-D=Cardiac Resynchronization Therapy with Defibrillator, ICD=Implantable Cardioverter Defibrillator, NR=Not Reported, N=Number, HR=Hazard Ratio, CI=Confidence Interval, OR=Odds Ratio, RD=Risk Difference, P=P value, NA=Not Applicable, LBBB=Left Bundle Branch Block LVEF=Left Ventricular Ejection Fraction