British Society for Heart Failure

Response to the appraisal consultation document (January 2014) on implantable cardioverter defibrillators for the treatment of arrhythmias and cardiac resynchronisation therapy for the treatment of heart failure (review of TA95 and TA120)

We would like to thank NICE for a much improved document. This has shrunk considerably from two large volumes to 71 pages, and the standard of writing is dramatically better. Although there have been a number of positive developments as a result of this provisional guidance, there are a number of omissions/anomalies that give us cause for concern.

Positive findings:

1) The inclusion of selected patients with non-ischaemic cardiomyopathy for ICD therapy (a population that was previously not considered in the previous TA95)
2) Patients with a broad QRS (>150ms), severe LVSD (LVEF ≤35%), and NYHA I-II are added to the recommendations for CRT-D
3) Removal of the need for non-sustained VT or positive EP studies as selection criteria for ICD therapy
4) The removal of echo dyssynchrony as a selection criterion for CRT

Concerns:

1) ICDs are not recommended in the provisional guidance for patients with a QRS <120ms. This group represents a large proportion of heart failure patients that might be denied important life-saving therapy, and is the group largely represented by the MADIT-II study where half of patients had a narrow QRS (N Engl J Med 2002;346:877-83). In this study, there was a 31% RRR in overall mortality, with no difference in outcome in those with a narrow QRS on subgroup analysis. Meta-analysis including the results from SCD-HeFT suggests that QRS duration has little effect on the benefit to be gained from ICD (Heart Rhythm 2013;10:200-6).
2) Particularly with regards to defibrillators, it would seem appropriate to emphasise that guidance does not mandate therapy. This is particularly relevant is certain demographic subgroups.
    a. **AGE** - As has been mentioned in the document, the mean age in clinical studies is younger than those in the general heart failure population. Generally, elderly patients are more interested in symptomatic improvement rather than reduction in sudden death, and in such a cohort, ICD therapy may be inappropriate or undesired. Furthermore, there is evidence from a meta-analysis of ICD studies (Santangeli et al.

Ann Intern Med. 2010;153:592-599) that ICDs primarily benefit younger patients (<60 years).

b. **GENDER** - There is evidence from a large American registry (National Cardiovascular Data Registry 2012) and sub-group analyses from SCD-HeFT and MADIT-II, that it is male patients that seem to confer benefit from primary prevention ICDs. Women on the other hand appear to have a higher complication rate following ICD implantation.

3) The discrepancy in patients with NYHA class III and QRS>150ms. Those with LBBB have been allocated CRT-P, and those with non-LBBB allocated CRT-D. CRT has a much stronger evidence base in LBBB, and those with a wide QRS are at particular risk. We would suggest the same recommendation of "CRT-D or CRT-P" in either category. This is in keeping with the 2012 ESC heart failure guidelines – see below (from European Heart Journal doi:10.1093/eurheartj/ehs104):

Recommendations for the use of CRT where the evidence is strong—patients in sinus rhythm with NYHA functional class III and ambulatory class IV heart failure and a persistently reduced ejection fraction, despite optimal pharmacological therapy

Recommendations	Class[a]	Level[b]	Ref[c]
LBBB QRS morphology CRT-P/CRT-D is recommended in patients in sinus rhythm with a QRS duration of ≥120 ms, LBBB QRS morphology, and an EF ≤35%, who are expected to survive with good functional status for >1 year, to reduce the risk of HF hospitalization and the risk of premature death.	I	A	156, 157
Non-LBBB QRS morphology CRT-P/CRT-D should be considered in patients in sinus rhythm with a QRS duration of ≥150 ms, irrespective of QRS morphology, and an EF ≤35%, who are expected to survive with good functional status for >1 year, to reduce the risk of HF hospitalization and the risk of premature death.	IIa	A	156, 157

4) The exclusion of CRT-D in patients with NYHA II heart failure, LVEF≤35%, LBBB and QRS 120-149ms. Again, this is at odds with the ESC Guidelines who recommend "CRT, preferably CRT-D" in patients with a QRS duration ≥130ms (see below):

Recommendations for the use of CRT where the evidence is strong—patients in sinus rhythm with NYHA functional class II heart failure and a persistently reduced ejection fraction, despite optimal pharmacological therapy

Recommendations	Class[a]	Level[b]	Ref[c]
LBBB QRS morphology CRT, preferably CRT-D is recommended in patients in sinus rhythm with a QRS duration of ≥130 ms, LBBB QRS morphology, and an EF ≤30%, who are expected to survive for >1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	I	A	154, 155
Non-LBBB QRS morphology CRT, preferably CRT-D should be considered in patients in sinus rhythm with a QRS duration of ≥150 ms, irrespective of QRS morphology, and an EF ≤30%, who are expected to survive for >1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	IIa	A	154, 155

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We would be grateful if NICE would consider these points. In summary, the BSH are happy with the guidance for the categories highlighted in green in the figure below, but we feel strongly that the alterations to the recommendation (highlighted in yellow) should be given serious consideration.

	LBBB	NYHA I	NYHA II	NYHA III	NYHA IV
< 120 ms	No	ICD	ICD	OMT or ICD	OMT
120-149 ms	No	ICD	ICD	ICD	CRT-P
	Yes	ICD or CRT-D	ICD or CRT-D	CRT-P or CRT-D	CRT-P
>150ms	No	CRT-D	CRT-D	CRT-P or CRT-D	CRT-P
	Yes	CRT-D	CRT-D	CRT-P or CRT-D	CRT-P