Patients implanted with a WiSE-CRT system have a trend towards superior reverse left ventricular remodelling compared with those receiving conventional epicardial cardiac resynchronisation therapy upgrades

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**Introduction**: Heart failure (HF) patients undergoing CRT upgrades are more symptomatic and have lower rates of reverse LV remodelling compared with de novo implants. WiSE-CRT delivers endocardial LV pacing and has many advantages over epicardial CRT which can be particularly useful in this upgrade population. Currently, WiSE-CRT is reserved for patients considered high risk for epicardial CRT such as venous occlusion, risk of pocket infection and multiple co-morbidities placing patients at an increased risk.

**Methods**: Consecutive patients undergoing epicardial CRT upgrades at Guy’s and St Thomas’ between 2014-2018 were compared with patients undergoing high-risk CRT upgrades with a WiSE-CRT.

**Result**: 95 patients were included; 58 epicardial and 37 endocardial CRT. Baseline demographics for epicardial vs. endocardial CRT upgrades include: $71.2\pm12.2$ vs. $67.9\pm11.4$ years ($p=0.098$), $77.6\pm0.4$ vs. $83.8\pm0.4$% ($p=0.023$) male, $39.7\pm0.5$ vs. $37.8\pm0.5$% ischaemic, QRS $176.3\pm27.5$ vs. $182.4\pm29.0$ms ($p=0.315$) and LVEF $30.2\pm8.2$ vs. $29.7\pm7.9$% ($p=0.796$). At 6 month follow-up, epicardial CRT upgrades had an 81% improvement in clinical composite score (alive, no HF hospitalisations, improvement in NYHA or global assessment) and 78% had improvement following WiSE-CRT ($p=0.784$). There was a trend towards a non-significant improvement in LV remodelling following WiSE-CRT compared with epicardial CRT; $73.5\pm0.4$ vs. $66.0\pm0.5$% ($p=0.367$) of patients had an absolute change in LVEF $\geq 5$% and $69.0\pm0.5$ vs. $52.8\pm0.5$% ($p=0.185$) of patients had improvement in
LVESV≥15%.

**Conclusion**: Patients undergoing high-risk CRT upgrades with a WiSE-CRT system have comparable outcomes with those patients undergoing epicardial CRT upgrades. There is a tendency towards improved LV remodelling following WiSE-CRT, however further studies are required to determine if this reaches significance in a larger patient cohort.