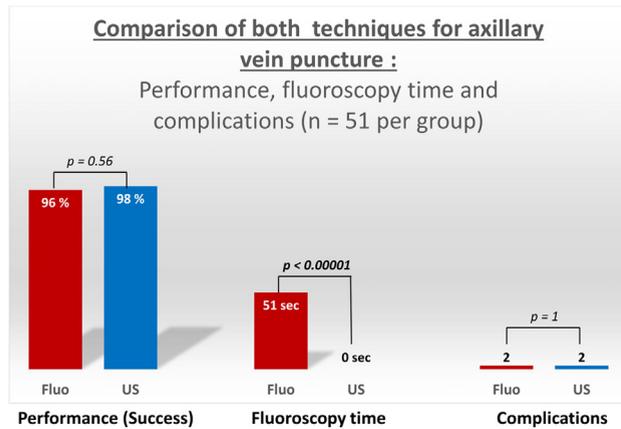


Conclusion: Our study demonstrates that both US and fluoroscopy-guided AV catheterization for CEID are highly effective and safe techniques. Despite similar AV access time, compared to fluo guidance, US reduce time radiation exposure by 20 %.



CI-523-03

REDEFINE-EP: A PROSPECTIVE, RANDOMIZED EVALUATION OF THE CONTROLRAD SYSTEM TO REDUCE RADIATION EXPOSURE DURING CARDIAC ELECTRONIC IMPLANTABLE DEVICE PROCEDURES

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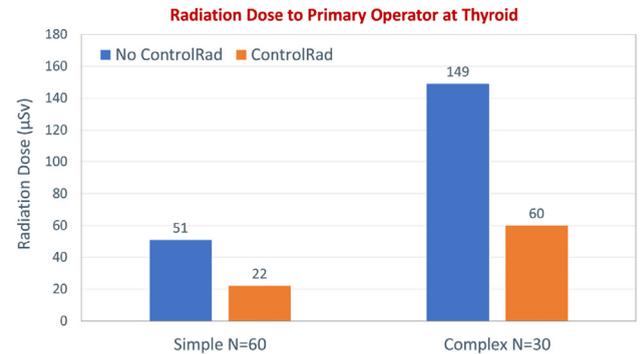
Background: The ControlRad (CR) system utilizes a dynamic collimator that allows high resolution imaging in an operator-selected region of interest, with significant radiation dose reduction for the remaining field of view.

Objective: The aim of this study was to evaluate the effectiveness of the CR system to reduce scatter radiation during cardiac electronic implantable device (CEID) procedures.

Methods: In a prospective, single center study, 90 patients undergoing simple (single or dual chamber CEID) or complex (left bundle pacing and biventricular CEID) procedures were randomly assigned to undergo the procedure with or without the CR system (CR= 43, No CR=47). The primary study endpoint was the scatter radiation dose to the primary operator measured using a standard aluminum oxide badge and a real-time radiation dosimeter badge. Secondary endpoints included the radiation dose to the secondary operator and nurse anesthetist, and dose-area product (DAP).

Results: Of the 90 patients, 60 (67%) underwent simple and 30 (33%) underwent complex CEID procedures. For the primary operator, the mean radiation dose at the thyroid position per case was 63% lower in the CR arm (standard badge: 56 vs. 23 μ Sv). For the second operator, the thyroid dose was also lower in the CR arm (9 vs. 2 μ Sv, 81% reduction). The cumulative radiation dose for the nurse anesthetist was too low to report meaningful data. The median DAP was 68% lower in the CR arm (622 vs 196 μ Gym²). Using the real-time radiation dosimeter badge, relative reduction in radiation dose for the primary operator was similar in simple (57%) and complex (60%) procedures (Figure 1). The mean procedure times were similar in CR vs. noCR (71 vs 66 mins, $p=0.6$). There was no difference in complications between study arms ($p=0.19$).

Conclusion: The ControlRad system effectively reduces scatter radiation exposure to the operators and patient during CEID procedures without prolonging procedure times or complications.



CI-523-04

CARDIAC RESYNCHRONIZATION THERAPY USING THE SYNCV ALGORITHM COMPARED TO CONVENTIONAL BIV PACING: PRELIMINARY RESULTS OF THE DOUBLE-BLIND, RANDOMIZED, MULTICENTER CLINICAL TRIAL "CRUSTY-TRIAL"

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Background: Some of the devices for cardiac resynchronization therapy (CRT) have automatic algorithms to achieve ventricular fusion, such as the SyncAV™ algorithm (Abbott). There are few data on the possible clinical benefit of its use in clinical practice.

Objective: To assess whether cardiac resynchronization using the SyncAV™ algorithm achieves greater electrical resynchronization compared to a conventional biventricular pacing (CVP).

Methods: The CRUSTY trial is a multicenter, randomized, double-blind clinical trial to evaluate the superiority of CRT with fusion using the SyncAV™ algorithm over CVP (with optimization of AV and VV intervals) with a 6-month follow-up.

(ClinicalTrials.gov Identifier: NCT03961399). This sub-study focuses on the data obtained at the inclusion and baseline visit to assess the acute electrical response.

Results: From January 2019 to April 2021, 54 patients were included in the 15 participating centers (mean age 66 \pm 9 years, 40% women). After 1: 1 randomization (Figure 1A), no significant differences were observed in their baseline characteristics (TABLE). After resynchronization, the duration of paced QRS in SyncAV group was lower (137 \pm 4 MS VS 118 \pm 17 ms, $p < 0.01$), as well as the absolute (deltaQRS) and relative (% deltaQRS) reduction of the QRS (29 \pm 23 ms Vs 52 \pm 19ms, $p < 0.01$; 17% vs 30%, $p < 0.01$ respectively) (FIGURE). The number of "super-resynchronizers" (QRS <120ms) was higher in the SyncAV group (19% vs 63%, $p < 0.01$). In the multivariate analysis, the use of the SyncAV™ algorithm was the only factor that predicted a "super-resynchronizer" response type (OR 7.8; 95% CI 2-26)

Conclusion: Fusion CRT using the SyncAV™ algorithm achieves greater electrical resynchronization compared to EBC in the short term. We remain awaiting the results of the follow-up

