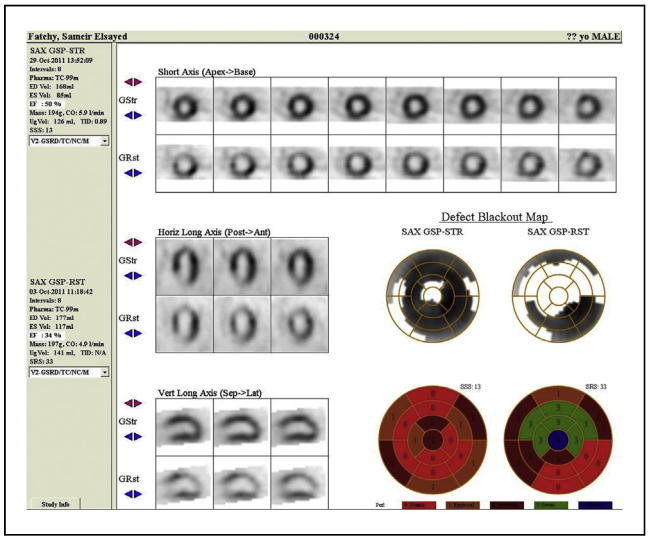

CRT-200.01

Operator Radiation Exposure: A Randomized Trial Comparing Right and Left Radial Approaches in Coronary Interventions

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BACKGROUND Radial approach is the most frequently used arterial access in our center for coronary interventions due to the lower rate of vascular complications, increased patient comfort, as well as decreased mortality in primary angioplasty. Previous studies showed controversial results regarding relative radiation dose received by the first operator (FO) when performing right radial (RRA) versus left radial approach (LRA).

The aim of the present study was to evaluate radiation dose received by the FO during coronary procedures through RRA and LRA.

METHODS This was a prospective randomized trial. From February 2014 to March 2014, patients older than 18, with an indication for coronary intervention were recruited. Exclusion criteria were: failure to achieve the randomized vascular approach, prior CABG with internal mammary artery graft, end stage renal failure and/or hemodialysis and patient preference. Radioprotection devices for the FO included: leaded equivalent skirt, vest and thyroid shield, leaded glasses, screen and curtain under table, as well as leaded equivalent skirt for the patient between waist and knees. All procedures were performed by three operators, who were equipped with 1 dosimeter (DMC3000 radiation detector), located on the outer left side of the thyroid shield. Clinical and procedural variables were recorded: duration of the study (minutes), fluoroscopy time (FT-minutes), number of scenes (NS), dose-area product (DAP-μGym2), total radiation (TR-μGym) and radiation dose to the FO (mSv). t test for comparison of means was used, with alpha value ≤ 0.05.

RESULTS 97 patients were randomly assigned to the RRA (45 patients) or the LRA (52 patients). 58 patients were men. The mean age was 63.3 ± 1.1 years (26-83 years). There were no significant differences related to cardiovascular risk factors, BMI and clinical presentation between groups. Study duration 34.8 ± 3.9 vs. 32.8 ± 3.7 ($p = 0.998$), number of scenes (NS) 16 ± 1 vs. 14 ± 1 ($p = 0.277$), fluoroscopy time 11.7 ± 1.4 vs. 10.2 ± 1.4 ($p = 0.441$) were similar between groups, but the LRA was associated with greater dose-area product (μGym2) 10322,0 ± 1046,4 vs. 7117,7 ± 807,4 ($p = 0.016$), total radiation dose 1932,9 ± 136,3 vs. 1260,6 ± 136,3 ($p = 0.009$) and radiation dose to the FO 53,2 ± 87,5 vs. 30,4 ± 5,3 ($p = 0.013$).

CONCLUSION RRA was associated with a statistically significant lower dose of radiation received by the FO as compared to LRA. These results argue in favor of the RRA as the first choice when performing coronary interventions by radial approach.

CRT-200.02

Safety of Routine Heparin-Only Rotablator Cocktail for Rotational Atherectomy

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BACKGROUND Rotational atherectomy therapy with the Rotablator system (Boston Scientific, Marlborough, MA) has evolved over time. It was first introduced in the 1990s as a stand alone intervention for complex coronary artery disease. It would later become an adjunct to coronary stenting. As its role became more complimentary, many aspects of the procedure changed, improving procedural outcome. However, one of the fundamental components of the procedure has remained nearly unchanged- the Rotablator "cocktail." This typically consists of the Rotaglide solution (Boston Scientific, Marlborough, MA), heparin, nitroglycerin, calcium channel blockers, and/or adenosine; in an effort to prevent slow-flow or no-reflow phenomenon. Since adopting modern procedural techniques at our institution, we have routinely used heparin alone in the cocktail, significantly simplifying the pharmacological preparation time. Therefore a retrospective case series was constructed to show the safety and feasibility of routine heparin-only Rotablator cocktail.

METHODS A registry of all Rotablator cases performed at our institution was created. The study design was a retrospective case series. Inclusion criteria were all cases involving Rotablator therapy from January 2007 through May 2015. Primary outcome was incidence of no-reflow or slow-flow post rotational atherectomy. Secondary outcomes included procedural success and total procedure time. Exclusion criteria included the addition of Rotaglide, nitroglycerin, calcium channel blockers, or adenosine in the Rotablator flush bag.

RESULTS A total of 96 Rotablator cases were indentified for the time period of January 2007 through May 2015 where only heparin was used in the cocktail. Rotational atherectomy was successfully performed in 91 cases (94.8%). The Rotablator burr would not cross for 5 cases. Of the successful cases, slow-flow or no-reflow occurred in 2 cases (2.2%). Total procedure time for successful cases was 82 minutes and 12 seconds per case.

CONCLUSION The simplified Rotablator cocktail may serve to compliment the modern procedural techniques such as smaller burr/artery ratios, single burr approach, lower rotational speeds, and shorter ablation run times. Combining these procedural techniques with the routine use of a heparin-only cocktail was safe with low rates of slow-flow or no-reflow (2.2%); and high rates of procedural success (94.8%). This study is limited by its retrospective nature and small sample size but warrants further prospective randomized data.

CRT-200.03

The Hybrid Closure Technique: A Potential Standard for Large-Bore Arteriotomy Closure

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BACKGROUND The "pre-close" technique employing two Perclose (P) (Abott Vascular, CA) is well established for large-bore arteriotomy (LBA) closure. We theorized that using 1 P and 1 Mynx (M) (Accessclosure, CA) or Angioseal (A)(St. Jude Medical, MN) vascular closure device (VCD) in a hybrid closure (HC) technique would be a safe and effective alternative for LBA closure up to 14Fr.

METHODS 43 patients (pts) underwent either high-risk PCI (hrPCI) with Impella (I)(Abiomed, MA) support or TAVR with the Sapien S3 (Edwards, CA) valve. 38 hrPCI pts and 3 TAVR pts had femoral arteriotomy (AR). 2 hrPCI pts underwent axillary artery AR for I insertion due to lower extremity PAD. Prior to I insertion via the common femoral or axillary artery, 1 P device was pre-deployed. At the end of hrPCI, I was removed and a 0.035 wire was inserted through the I sheath (IS). The IS was then withdrawn over the wire and the partially deployed P was fully deployed as the IS was being withdrawn. A 6 Fr sheath was then quickly advanced over this 0.035 wire into the artery achieving hemostasis and effectively reducing the LBA to a 6Fr. An 8Fr sheath was used in cases where the 6Fr did not achieve hemostasis. The 6F or 8Fr AR was then closed with the appropriate size M or A VCD.