

P968

Impact of contact force sensing catheters on fluoroscopy time in left-sided atrial procedures

Blessberger H.¹; Fiedler L.²; Balsam P.³; De Potter T.⁴; Buchta P.⁵; Nahler A.⁶; Hoenig S.⁶; Hrnčić D.⁶; Lambert T.⁶; Schoenbauer R.⁷; Pfeffer M.²; Roithinger FX.²; Steinwender C.⁶; Kosiuk J.⁸

¹Kepler University Hospital Linz, Linz, Austria

²LK Wiener Neustadt Abteilung fuer Kardiologie und Nephrologie, Wiener Neustadt, Austria

³Medical University of Warsaw, First Department of Cardiology, Warsaw, Poland

⁴Cardiovascular Research Center Aalst, Aalst, Belgium

⁵School of Medicine in Katowice, Medical University of Silesia, 3rd Department of Cardiology, Katowice, Poland

⁶Kepler University Hospital Linz, Department of Cardiology, Linz, Austria

⁷Medical University of Vienna, Department of Cardiology, Vienna, Austria

⁸Helios Klinik Koethen, Department of Cardiology, Koethen, Germany

Funding Acknowledgements: None.

OnBehalf: Go for Zero Fluoroscopy Project investigators

Background Contact force sensing catheters provide electrophysiologists with direct feedback and therefore improve safety and help to generate more effective lesions. The use of contact force may also reduce fluoroscopy and procedure times.

Purpose The aim of this study was to systematically evaluate the impact of using contact force sensing catheters (CFSCs) on fluoroscopy times and procedure times in left-sided atrial procedures.

Methods In this multinational, multicenter study, data from 622 left-sided procedures (142 without and 480 with CFSCs) of 25 participating European centers were prospectively collected with a structured questionnaire. Examinations comprised 393 pulmonary vein isolations (PVIs, group 1[G1]), 122 PVIs with linear lesions (group 2[G2]), 65 left-sided accessory pathway ablations (group 3 [G3]) and 42 ablations for left atrial tachycardia (group 4 [G4]). Fluoroscopy and procedure times were compared with respect to the use of CFSCs, procedure type, and level of operator experience as possible confounders. A Mann-Whitney U-test was applied for comparison, and a p-value <0.05 was considered statistically significant.

Results With the use of CFSCs, fluoroscopy time was significantly reduced when performing pulmonary vein isolations (G1 median [IQR]: 19 [11.0-33.7] vs. 7.2 [4.0-13.0] min., p < 0.001, G2: 45.3 [34.9-61.8] vs. 7.3 [5.0-14.0], p < 0.001, respectively). For groups G3 and G4, no difference could be detected. Procedure times were shortened for pulmonary vein isolations with additional lesions only (G4: 210 [180-240] vs. 153 [127-200] min., p < 0.001). When assessing the effect of operator experience, all left-sided atrial procedures were combined. Significantly shorter fluoroscopy times with contact force were found at all career levels (early career < 5 years: median -6 min., p = 0.024, mid-career 5-15 years: -15 min., p < 0.001, mentor status with experience > 15 years: -6.5 min., p < 0.001). The use of contact force proved to be especially beneficial in reducing fluoroscopy time in operators performing one to 19 procedures per month (1-9: median -15.8 min., p < 0.001, 10-19: -15.9 min., p < 0.001), whereas it lost its statistical significance when more than 20 procedures per month were performed (20-39: -3.2 min., p = 0.100, >40: -1.5 min., p = 0.346).

Conclusion Contact force sensing catheters can help to reduce fluoroscopy times, especially when performing pulmonary vein isolations. This effect could be demonstrated for all career levels. However, it diminished with the operator's caseload. A shortening of procedure time was found for PVIs with additional linear lesions.