IMPACT OF A NEW OPEN IRRIGATED CATHETER ON THE RISK OF FLUID OVERLOAD AFTER ABLATION OF LONG STANDING PERSISTENT ATRIAL FIBRILLATION: RESULTS FROM A PROSPECTIVE RANDOMIZED STUDY

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Background: The use of standard open-irrigated tip catheter may result in fluid overload and/or pulmonary congestion. The aim of this study was to compare the clinical outcomes of two different open irrigated ablation catheters.

Methods: 138 patients (pts) undergoing ablation for longstanding persistent AF at our institution were randomized to ablation with a standard 3.5 open irrigated catheter (group 1, n=46) and discharged with 40 mg bid of furosemide, or ablation with a standard 3.5 open irrigated catheter (group 2, n=46) and discharged with 80 mg bid of furosemide, and ablation with a new irrigated catheter (SF= surround flow) and discharged with 40 mg bid of furosemide (group 3 n=46). At the end of the procedure all pts were given 40 mg of i.v. furosemide. Clinical data on fluid administration, pulmonary congestion, weight increase, and re-hospitalization due to fluid overload were collected and analyzed.

Results: Baseline characteristic had no statistical significant difference between groups. No differences in RF time and procedural time were observed between groups. At the end of the procedures a total of 4.4±0.9 liters of fluid were given in group 1 and 2 compared to 1.7± 0.7 liters in group 3 (p< 0.005). The weight of the pts the day after the procedure increased by an average of 8±2 pounds in groups 1 and 2 while increased of 2± 0.4 pounds in group 3 (P<0.005). One hour following the procedure, one patient in group 1 had pulmonary congestion requiring re-intubation. No acute complications were observed in groups 2 and 3. Three days after discharge only 1 pts in group 3 showed 2 pounds increase in weight. However, 27 pts in group 1 and 2 (29%) still had a mean weight increase of 4± 0.4 pounds and feeling of shortness of breath. Ten patients in group 1 (22%) and 5 patient (11%) in group 2 required re-hospitalization due to fluid overload, while no patient in group 3 did.

Conclusion: This prospective randomized study demonstrates that the use of the new open irrigated SF catheter, significantly reduce weight gain and re-hospitalization due to peri-procedural fluid overload.