Renoprotective Effect of the Transradial Approach in Coronary Interventions

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Background:
Transradial access (TRA) for coronary interventions has been shown to improve patient comfort and improve patient outcomes with a reduction of complications and in-hospital mortality. These procedures may impact renal function secondary to contrast material as well as intraprocedural embolization to the renal arteries. We assessed the impact of TRA on the use of contrast material and renal function in coronary interventional procedures.

Methods:
Analysis of all coronary interventions where pre and post creatinine levels were available, was performed to evaluate the impact of the procedure on renal function. Multivariate models were used to assess the adjusted association between procedure approach and reduction of renal function (defined by increase in creatinine level of greater than 25%, 33% or 50%). Models were adjusted to patients' age, gender, CAD risk factors and history, current acute coronary syndrome, baseline creatinine levels within normal limits and procedural characteristics including contrast material volume.

Results:
Over the study period, the TRA was used in 1067(27%) of the 3953 interventions performed. Comparing TRA to femoral access (FA), mean patient ages were 63.0±12.6 and 63.9±12.7 (p=0.04), with no significant differences in female gender (26.3% and 27.2%, p=0.61) or PCI success rates (95.9% and 95.6%, p=0.73). In patients undergoing TRA PCI, a strong preference for catheters 6 French was noted, 96.2% vs 3.1% for the FA (p0.0001). Significantly less contrast media was used with the TRA 117.3±49.6 vs 141.2±57.2 cc with the FA (p0.0001). Furthermore in a multivariate model controlling for patient and procedural variables including contrast volume, a significant reduction of renal dysfunction (OR=0.57, 95%CI 0.40-0.80, =0.001) was noted.

Conclusions:
In addition to other previously reported benefits of the TRA, this registry demonstrates a beneficial impact on post PCI renal impairment. This finding remains independent of delivered contrast material volumes.