IS VISUAL INTERPRETATION OF CORONARY EPICARDIAL FLOW RELIABLE IN ST ELEVATION MYOCARDIAL INFARCTION PATIENTS UNDERGOING PRIMARY ANGIOPLASTY? INSIGHTS FROM APEX-AMI

ACC Poster Contributions
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Background: Estimating culprit coronary stenosis and perfusion in STEMI is key to evaluating outcome. Elective PCI studies suggest substantial variability between visual assessments and blinded core laboratories. We evaluated this in the angiographic substudy of the APEX-AMI trial.

Method: We assessed % coronary artery stenosis and TIMI epicardial flow grade (0-3) of the infarct related artery (IRA) in 922 STEMI pts undergoing primary PCI. Evaluation of the same parameters was conducted before and after PCI as assessed by a core laboratory (CL) vs visual assessment by local investigators (LIs).

Results: In 922 pts substantial agreement existed between CL and LIs on % IRA stenosis pre-PCI (kappa = 0.76). By contrast poor agreement existed on TIMI flows pre- and post-PCI: this disagreement was greater and directionally different after PCI (kappa=0.56 pre and 0.36 post PCI respectively) and especially evident for TIMI flow 2 & 3 pre-PCI and TIMI 1 & 2 post-PCI. Disagreement between LIs and CL occurred in 167 pts pre-PCI and 123 pts post-PCI. Of these pts, LIs TIMI grades consistently underestimated flow pre-PCI in 63% and overestimated flow post-PCI in 78% of pts by at least one grade relative to CL flow grades.

Conclusion: Visual estimation of IRA stenosis severity agreed well with CL; however, directionally different disparity existed for TIMI flows before and after PCI. These data deserve consideration when interpreting clinical outcomes and clinical trials of STEMI pts undergoing primary PCI.