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Usefulness of Computed Tomography Myocardial Perfusion Imaging in guiding the management of Coronary artery disease

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Background/Aim:To study the safety and feasibility of functional assessment of coronary artery disease (CAD) by using newly introduced computed tomography myocardial perfusion (CTMP)Methods: All consecutive patients who underwent CTMP for the functional assessment of CAD from June 2013 onwards In our centre utilizing the 320-slice Toshiba Aquilion ONE CT scanner (Toshiba Medical Systems Corp., Tochigi-ken, Japan) were recruited into this study. Patient demographics, indications, radiation dose, were prospectively entered into the cardiovascular imaging and outcome database and retrospectively analyzed. Effective dose (ED) was calculated from the dose-length product and a conversion factor (k=0.017 mSv / mGy x cm). Clinical outcome and subsequent management plan were also recorded.Results: Fourteen patients (mean age 64.9 +/- 9.1; male sex: 78.6%, body mass index (BMI): 23.6 +/- 3.6) with stable effort angina who underwent CTMP were recruited into this study. Five patients (35.7%) had previous coronary bypass surgery while 4 patients (28.6%) had coronary stent(s) implanted. Effective dose (ED) were 10 mSv. Six patients (42.9%) were found to have positive ischaemia and/or evidence of prior myocardial infarct, leading to subsequent coronary revascularization while the remaining patients were identified to have coronary disease without functionally significant ischaemia and thus managed medically. No patient developed allergic reaction or contrast nephropathy.Conclusion: CTMP demonstrated its feasibility in diagnosis of CAD and identification of functionally significant ischaemia, providing important clinical information in guiding subsequent management. Despite higher exposure to radiation, it remains a useful and safe clinical tool in detecting functionally significant CAD.