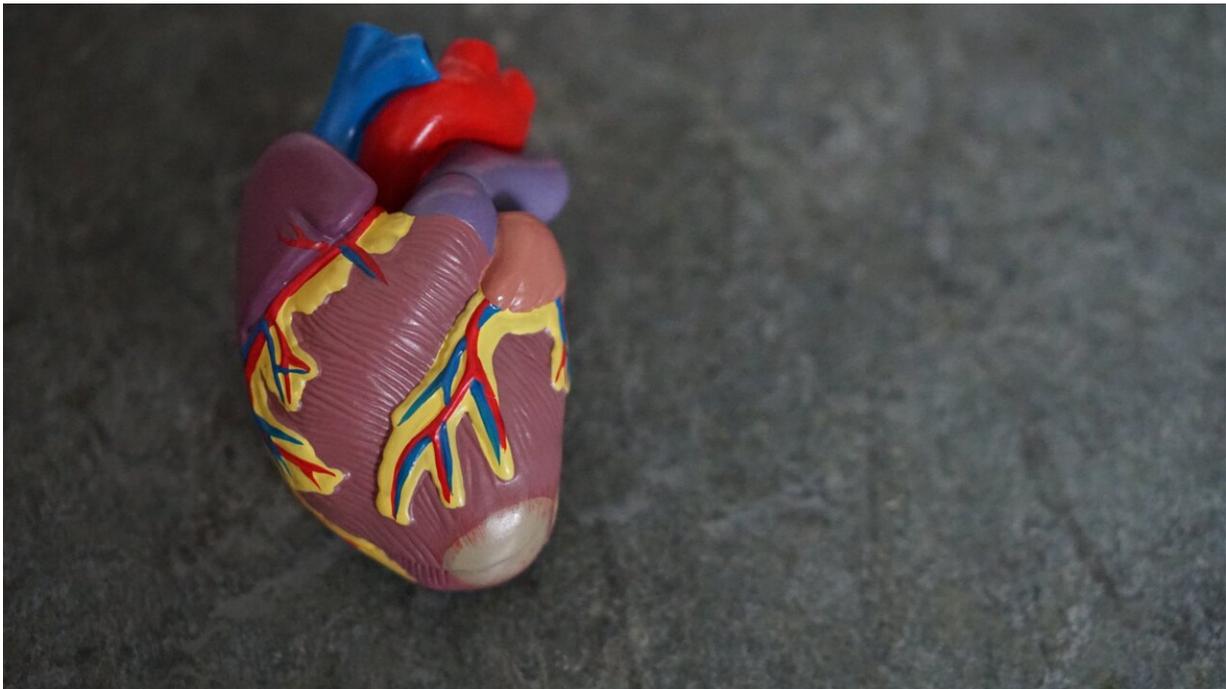


Systematic pressure wire assessment has no additional benefit at diagnostic angiography

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Adding systematic fractional flow reserve (FFR) assessment to coronary angiography does not reduce costs or improve quality of life in patients undergoing diagnosis for chest pain, nor does it reduce major adverse cardiac events or revascularisation rates. That's the finding of late breaking research presented in a Hot Line session today at ESC Congress 2021.

In patients with chest pain, [coronary angiography](#) alone does not accurately determine whether or not there is reversible myocardial ischaemia. The RIPCORDER concept proposes routine pressure wire assessment of all epicardial vessels amenable to revascularisation at the stage of diagnostic [angiography](#), and before triage to medical therapy alone, [percutaneous coronary intervention](#) (PCI), or [coronary artery bypass](#) grafting (CABG).

The original 200 patient proof-of-concept RIPCORDER study previously showed that when systematic FFR data were added to information from coronary angiography in patients with [chest pain](#), the management plan changed in 26% of the population. RIPCORDER2 is the first randomized trial to examine whether systematic FFR assessment of all relevant coronary arteries at the stage of the diagnostic angiogram would provide superior resource utilization, quality of life and clinical outcomes when compared to angiographic assessment alone.

The open label trial enrolled 1,100 patients undergoing invasive coronary angiography for the investigation of angina or non-ST elevation myocardial infarction. The mean age was 64 years and 75% were men. All participants had a stenosis of 30% or greater in at least one coronary artery suitable for either PCI or a bypass graft. Patients were randomized to systematic pressure wire-derived FFR after angiography or angiography alone. FFR measurement was performed in all coronary arteries of sufficient caliber for PCI or CABG unless Thrombolysis in Myocardial Infarction (TIMI) grade flow was less than 3. The recommended management plan was reported for all patients.

The co-primary outcomes, assessed at one year, were (a) total hospital costs and (b) quality of life and angina status. Costs incorporated the initial admission and any hospital episode starting within one year after randomisation. All inpatient admissions, outpatient visits and attendances at accident and emergency departments were included, but costs for

primary care or routine medications were not. Quality of life was assessed using the visual analog scale of the EuroQol EQ-5D-5L questionnaire and angina status was assessed using the Canadian Cardiovascular Society scale.

Prespecified secondary endpoints included clinical events (all-cause mortality, non-fatal stroke, non-fatal myocardial infarction and unplanned revascularisation) and management strategy (optimal medical therapy alone, PCI, or CABG).

The median total hospital cost over the one-year period was similar in the two groups: £4,510 (interquartile range [IQR] 2721–7415) for FFR plus angiography versus £4,136 (IQR 2613–7015) for angiography alone ($p=0.137$). There were no differences between groups in inpatient and outpatient costs, nights in hospital or the number of outpatient visits. There were no differences between groups in quality of life and angina status at one year.

Regarding secondary endpoints, there were a similar number of deaths, strokes, myocardial infarctions, and unplanned revascularisations in both groups. Nor were there significant differences between groups in the selected management plan. However, in the FFR group, the strategy was chosen immediately after the catheter laboratory procedure in more than 98% of patients whereas a further test was required in 14.7% of patients in the angiography alone group.

Chief investigator Professor Nicholas Curzen of University Hospital Southampton NHS Foundation Trust, UK, said: "RIPCORDER2 found that a strategy of systematic FFR in all major coronary arteries amenable to revascularisation was cost neutral compared to angiography-guided management and was not associated with any difference in [quality of life](#) or angina status at one year. In addition, there was no change in the management plan or the rate of clinical events, indicating that this

strategy provides no overall advantage compared to angiography alone."

More information: RIPCORDER 2: does routine pressure wire assessment influence management strategy of coronary angiography for diagnosis of chest pain?

Provided by European Society of Cardiology

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