Background The mechanisms of the clinically observed phenomenon of reduced angina on second exertion, or warm-up angina, are poorly understood. This study compared changes in central haemodynamics, peripheral wave reflection and patterns of coronary blood flow during serial exercise that may contribute.

Methods and Results 16 patients (15 male, 61 ± 4.3 yrs) with a positive exercise stress test and exertional angina completed the protocol. During cardiac catheterisation via radial access they performed 2 consecutive exertions (Ex1, Ex2) using a supine cycle ergometer. Throughout exertions, distal coronary pressure (Pd) and flow velocity (V) were recorded in the culprit vessel using a dual sensor coronary guide wire while aortic pressure was recorded using a second wire. Time to 1 mm ST depression was longer in Ex2 (p = 0.005) and rate pressure product (RPP) was higher (p = 0.025) confirming warm-up. A 33% decline in aortic wave reflection (p < 0.0001) in Ex2 (see Abstract 41 figure 1A) coincided with a reduction in both tension time index and diastolic time index (p < 0.0001). However, the latter was offset by reduced microvascular resistance (Pd/V), p < 0.0002, and enhanced left ventricular relaxation during Ex2 as suggested by a larger backward-travelling suction wave (p = 0.01) on wave intensity analysis (WIA) of the intra-coronary signals. See Abstract 41 figure 1B. The energy of the forward compression wave and overall coronary blood flow, as measured by the velocity time integral, did not change.

Conclusions In patients with warm-up angina, exercise induces changes in the aortic pressure waveform, microvascular function and LV relaxation. These combine to reduce afterload without compromising myocardial diastolic blood flow thereby likely enabling improved performance on second exercise.

Discussion The majority of patients undergoing PCI at the FRH have SYNTAX scores in the lowest tertile. There is no difference in the SYNTAX scores in patients having PCI from referral bases within the centre or from outside. In total almost one quarter of all patients undergoing CABG have a SYNTAX score in the lowest tertile. And this rises to almost one third in those patients referred from district general hospitals. Only a small number of these patients have an additional clear indication for CABG over PCI. Furthermore we found that a significant proportion of these do not go through MDT planning. These results may indicate that cardiologists are more likely to bring patients to MDT meetings than surgeons and, according to SYNTAX scoring, more patients are inappropriately having CABG than are inappropriately having PCI. Based on this data in our institution discussing all patients at an MDT and the use of SYNTAX scoring at point of referral would be more likely to increase PCI revascularisation rates.
unavailable). The ability to allocate a SYNTAX tertile was reproducible between observers (r=0.94). Median scores in the 3 groups were: L 14, IM 26, H 36 (Abstract 43 figure 1A). Although there was no correlation between SYNTAX score and patient sex or diabetic status, there was a linear relationship with patient age (r²=0.03; p<0.0001). Median scores in the 3 groups were: L 14, IM 26, H 36 (Abstract 43 figure 1A). Although there was no correlation between SYNTAX score and patient sex or diabetic status, there was a linear relationship with patient age (r²=0.03; p<0.0001).

1-year absolute survival (Abstract 43 figure 1B) followed SYNTAX score groups: L 94.7%, IM 88.7%, H 82.1% (p=0.0002). Similar results were obtained for freedom from death or unplanned revascularisation (p<0.0001) and death or any revascularisation (p<0.0001).

Abstract 43 Figure 1

Conclusions The SYNTAX score, when applied to an unselected population of patients undergoing PPCI for STEMI, provides important prognostic information regarding 1-year survival from death and revascularisation. These findings may provide supporting evidence towards routine complete revascularisation of obstructive coronary artery disease after PPCI.

Abstract 44 Figure 1

Abstract 44 Figure 2

Conclusions The SYNTAX score, when applied to an unselected population of patients undergoing PPCI for STEMI, provides important prognostic information regarding 1-year survival from death and revascularisation. These findings may provide supporting evidence towards routine complete revascularisation of obstructive coronary artery disease after PPCI.