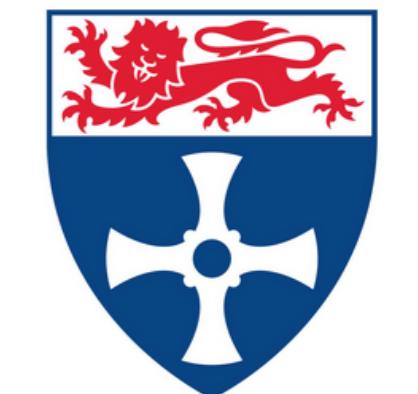


Do angiographic characteristics of older patients with non-ST elevation myocardial infarction differ across Scotland and England?

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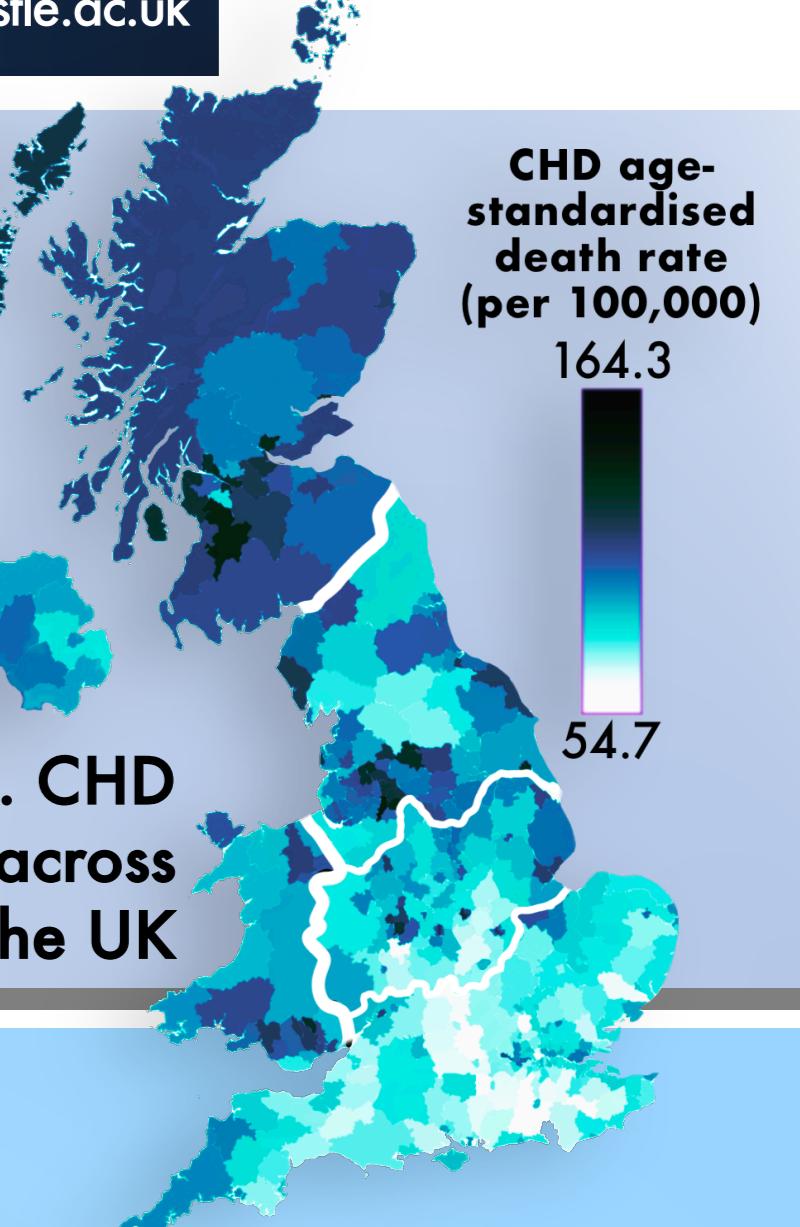


Figure 1. CHD mortality across the UK

1. BACKGROUND

- Society is ageing and the older population has a greater risk of acute coronary syndrome (ACS) which most commonly presents as non-ST elevation myocardial infarction (NSTEMI).^{1,2}
- Older people are less likely to receive evidence-based treatment and percutaneous coronary intervention (PCI) due to a lack of studies incorporating older populations—hence experiencing higher rates of complications and mortality.³
- Mortality of coronary heart disease is higher in Scotland and Northern England than other regions of the UK (Figure 1), but significance to angiographic characteristics is unknown.⁴
- To date, there are no investigations of angiographic characteristics of older patients with NSTEMI in the UK despite its important application in guiding NSTEMI intervention for the older population and regional health policies.

2. OBJECTIVES

Compare angiographic characteristics of patients ≥ 75 years with NSTEMI who underwent PCI across Scotland, North England, Midlands, and South England in the Older Patients with Non-ST Segment Elevation Myocardial Infarction Randomised Interventional Treatment (SENIOR-RITA) trial.

3. METHODS

- Angiographic compact discs (CDs) from November 2016 to May 2021 were obtained from the invasive treatment group (invasive angiography +/- PCI) of the ongoing SENIOR-RITA trial for analysis (Figure 2).

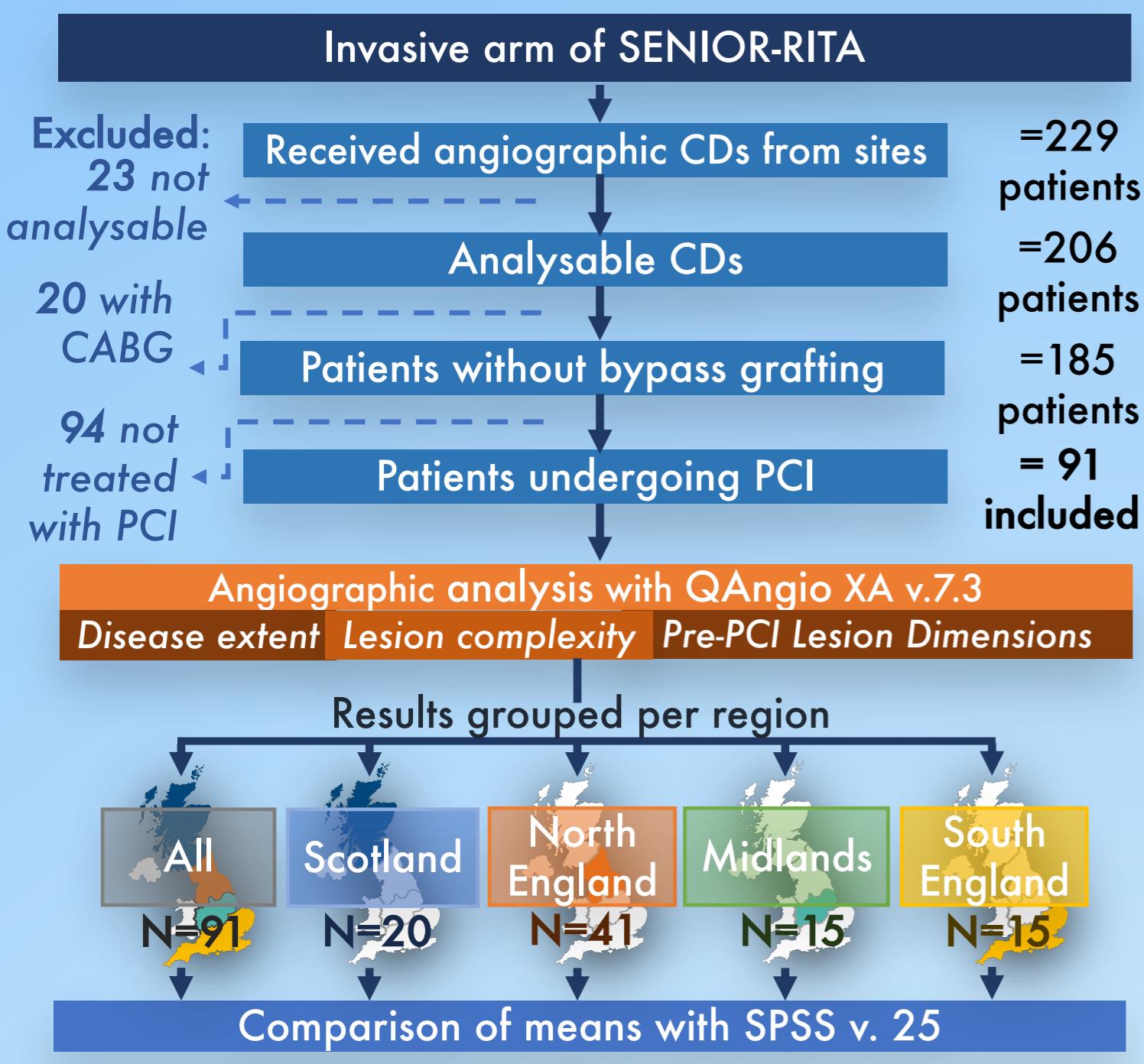
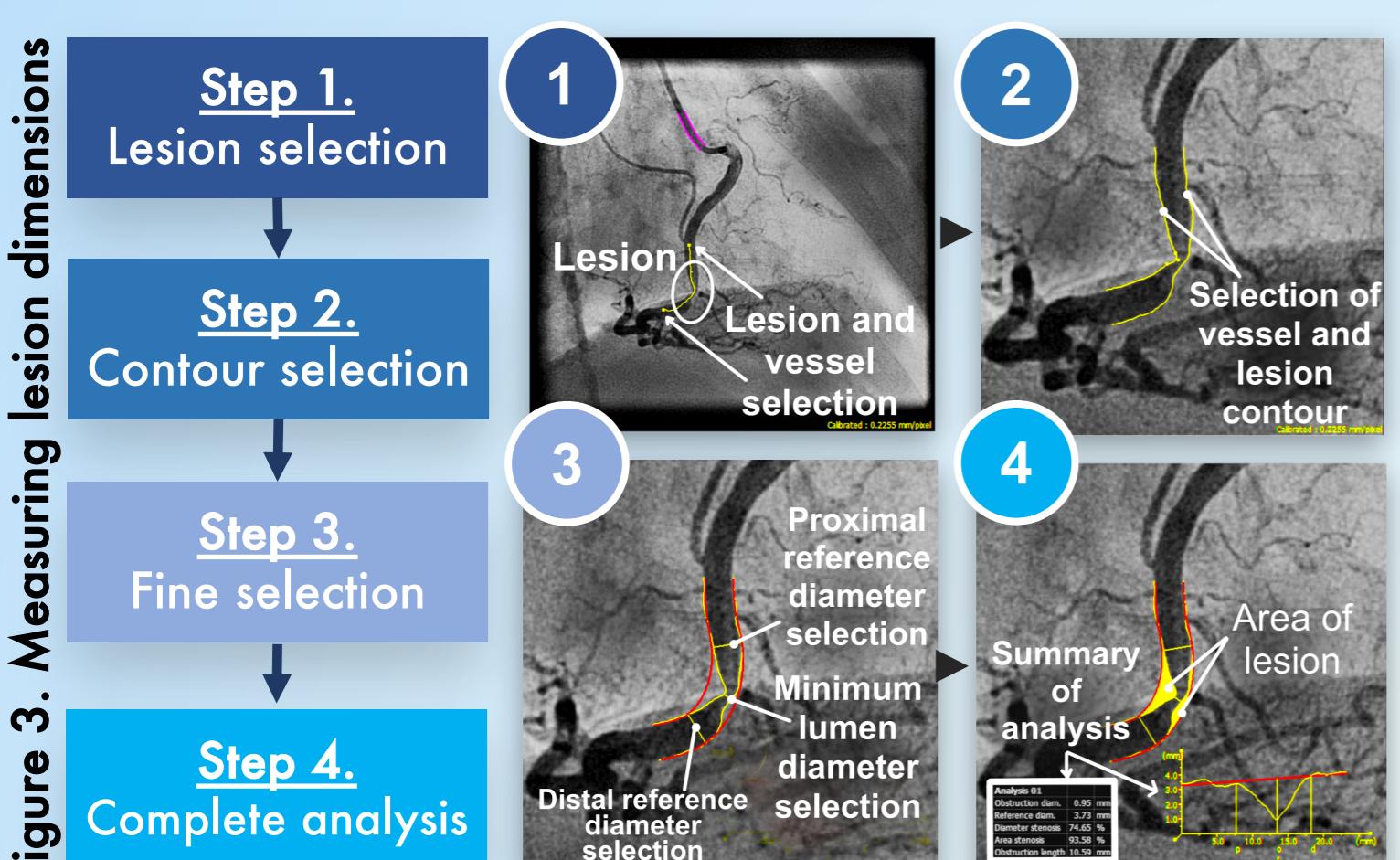


Figure 2. Overview of methodology

- The SYNTAX score was utilised to quantify disease extent and is based on number of lesions, diseased vessels, and lesion complexity.
- Lesion complexity was measured by the presence of lesion characteristics and graded A, B1, B2, or C based on modified American Heart Association guidelines.
- Lesion dimensions were measured as follows:



4. RESULTS

Table A. Comparison of Overall Angiographic Disease

Characteristic	Total (n= 91)	Scotland (n=20)	North England (n=41)	Midlands (n=15)	South England (n=15)	P value
Vessels affected, n (%)						
Single vessel disease	53(58.2%)	9(45.0%)	27(65.9%)	10(66.7%)	7(46.7%)	
Two vessel disease	32(35.2%)	10(50.0%)	13(31.7%)	5(33.3%)	4(26.7%)	
Three vessel disease	6(6.6%)	1(5.0%)	1(2.4%)	0(0%)	4(26.7%)	
Number of lesion(s), n (%)						0.33
1	49(53.9%)	9(45.0%)	25(61.0%)	9(60.0%)	6(40.0%)	
2	30(32.9%)	7(35.0%)	12(29.3%)	6(40.0%)	5(33.3%)	
≥ 3	12(13.2%)	4(20.0%)	4(9.8%)	0(0%)	4(26.7%)	
SYNTAX score ($\pm SD$)	9.3(6.7)	10.1(7.7)	9.17(6.5)	7.0(3.9)	10.8(8.2)	0.45
SYNTAX tertiles, n (%)						0.70
Low (0-7)	44(48.4%)	9(45.0%)	19(46.3%)	9(60.0%)	7(46.7%)	
Medium (7.5-15.5)	34(37.4%)	7(35.0%)	16(39.0%)	6(40.0%)	5(33.3%)	
High (≥ 16)	13(14.3%)	4(20.0%)	6(14.6%)	0(0%)	3(20.0%)	

- Most patients undergoing PCI had one-vessel disease (58.2%) with one lesion (53.9%).
- Most patients fall into the 'low' SYNTAX tertile.
- No significant difference of disease extent across regions ($P>0.05$).

Table B. Comparison of Culprit Lesion Complexity

Characteristic	Total (n= 91)	Scotland (n=20)	North England (n=41)	Midlands (n=15)	South England (n=15)	P value
Lesion characteristics						
Calicified, n (%)	37(40.7%)	7(35.0%)	18(43.9%)	7(46.7%)	5(33.3%)	0.80
Eccentric lesion, n (%)	26(28.6%)	5(25.0%)	11(26.8%)	5(33.3%)	5(33.3%)	0.91
Diffuse lesion, n (%)	10(11.0%)	1(5.0%)	4(9.7%)	3(20.0%)	2(13.3%)	0.57
Bifurcation lesion, n (%)	33(36.3%)	7(35.0%)	18(43.9%)	2(13.3%)	6(40.0%)	0.19
Thrombus present, n (%)	7(7.7%)	2(10.0%)	2(4.9%)	1(6.7%)	2(13.3%)	0.74
Lesion complexity, n (%)						0.17
A	10(11.0%)	5(25.0%)	2(4.9%)	0(0%)	3(20.0%)	
B1	33(36.3%)	9(45.0%)	14(34.2%)	6(40.0%)	4(26.7%)	
B2	38(41.8%)	5(25.0%)	21(51.2%)	6(40.0%)	6(40.0%)	
C	10(11.0%)	1(5.0%)	4(9.8%)	3(20.0%)	2(13.3%)	

- Most patients have B2 lesion complexity
- No significant difference of lesion complexity between regions.

Table C. Comparison of Pre-PCI Lesion Dimensions

Characteristic	Total (n= 91)	Scotland (n=20)	North England (n=41)	Midlands (n=15)	South England (n=15)	P value
Lesion length, mean mm ($\pm SD$)	11.9(7.9)	10.5(6.1)	13.1(9.3)	11.6(6.3)	10.3(7.3)	0.54
Discrete (<10mm)	52(57.1%)	12(60.0%)	15(36.6%)	6(40.0%)	9(60.0%)	
Tubular (10-20mm)	35(38.5%)	6(30.0%)	21(51.2%)	5(33.3%)	3(20.0%)	
Diffuse (>20mm)	10(11.0%)	1(5.0%)	4(9.8%)	3(20.0%)	2(13.3%)	
Area stenosis, % mean ($\pm SD$)	94.0%(5.8%)	90.9%(8.0%)	95.2%(5.2%)	92.9%(4.7%)	95.9%(2.8%)	0.02
Diameter stenosis, % mean ($\pm SD$)	78.8(10.9%)	73.4%(14.5%)	81.8%(8.8%)	75.4%(10.5%)	81.3%(8.1%)	0.02
Minimum lumen diameter, mean mm ($\pm SD$)	0.6(0.4)	0.8(0.5)	0.6(0.3)	0.6(0.3)	0.5(0.3)	0.08

Figure 4. Mean pre-PCI diameter stenosis by region

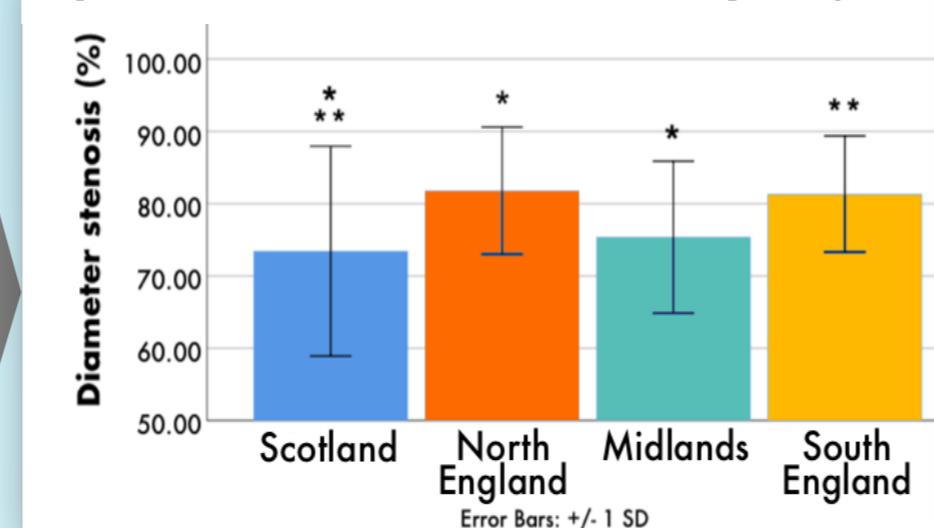
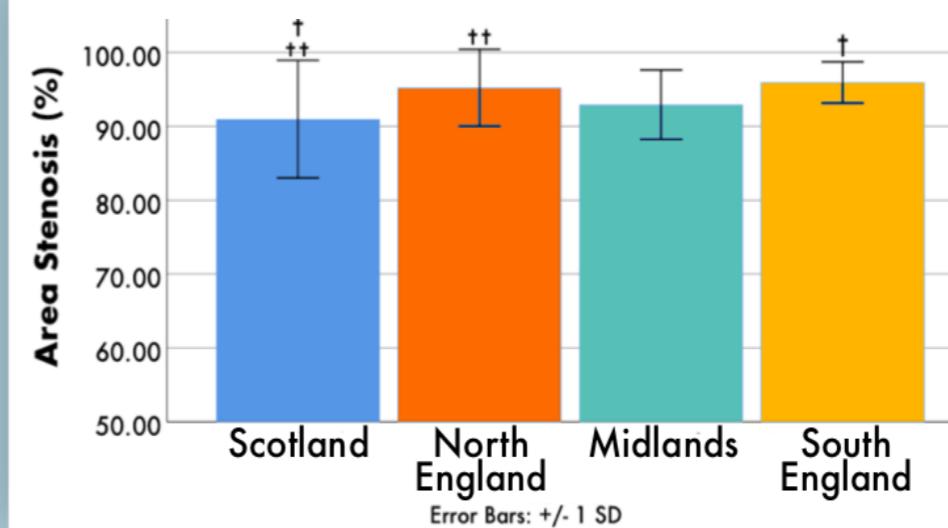


Figure 5. Mean pre-PCI area stenosis by region



5. CONCLUSIONS

Mean pre-PCI culprit lesion diameter and area stenosis were significantly ($P<0.05$) higher in North and South England compared to Scotland or Midlands. However, all other pre-PCI angiographic parameters were not significantly different between regions ($P>0.05$). In conclusion, more severe stenosis may be found in North and South England, but characteristics of disease extent and lesion complexity do not differ between regions.

Scan for references

