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Abstract 16: CAC-RDS and CAD-RADS as a potential tool to better Characterise CAD Disease Prevalence, Severity And Variation Within Described Disease Cohorts And Populations

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CAC-RDS and CAD-RADS as a potential tool to better Characterise CAD Disease Prevalence, Severity And Variation Within Described Disease Cohorts And Populations.

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Introduction: CAC-RADS and CAD-RADS were introduced to create a standardized method to communicate findings of coronary calcium scoring (CCS) and coronary CT angiography (cCTA) and to facilitate standardized clinical decision making regarding the potential need of further assessment and management. Yet an important and welcome "by-product" may be the ability to respectively quantitate and semi-quantitate the extent and/or severity of disease biomarkers in large distinct patient groups and population. For example, characterisation of the UK NICE-CG95 compliant RACPAC populations, as underway in the National audit CA2017-18-191, has the potential to yield extremely valuable information on disease distribution and hot-spots allowing the creation of "disease heat maps" which in turn can be used to inform public health and research strategies alike as well as informing and ultimately optimising down-stream resource utilisation.

Methods: We sought to characterise our own RACPAC population and determine to what degree the variability in disease over time may be influenced by intra- and inter-observer variability. We studied our RACPAC-CT data with respect to CAC-RDS and CAD-RDS reporting output over a 1-year period, here we present the last 4 month . We performed inter- and intra-observer variability for both CAC-RDS and CAD-RDS of the 2 Consultants with the highest reporting volume (>500 reports/annum). Below we show the preliminary data relating to 02/2019.

Results: CAC-RDS- intra-observer variability; Weighted Kappa 1.0 (95% CI 1.0-1.0)CAC = RDS-inter-observer variability; Weighted Kappa 0.96 (95% CI 0.90-1.0)CAD-RDS - intra-observer variability; Weighted Kappa 0.84 (95% CI 0.715-0.98)CAD-RDS - inter-observer variability; Weighted Kappa 0.9 (95% CI 0.80-0.99)

CAD-RADS	Month 1(June)	Month 2(July)	Month 3(August)	Month 4 (September)	Average and (Range) in %
0	56/39.2	42/31.8	39/30.7	55/38.7	35.1 (30.7-39.2)
1	38/26.6	30/22.7	26/20.5	31/21.8	22.9 (21.8-26.6)
2	23/16.1	16/12.1	30/23.6	18/12.7	16.1 (12.1-23.6)
3	16/11.2	29/21.9	9/7.1	22/15.5	13.9 (7.1-21.9)
4A	8/5.6	13/9.8	20/15.7	16/11.3	10.6 (5.6-15.7)
3+4A	24/16.8	42/31.8	29/22.8	38/26.7	24.5 (16.8-31.8)
4B	2/1.4	0/0	0/0	0/0	0.35 (0-1.4)
5	0/0	2/1.5	3/2.3	0/0	0.95 (0-2.3)
	143	132	127	142	140 (127-156)
FFR analysis Total/%+-veFFR/%	——	39/29.5	29/22.8	28/19.7	24.1 (19.7-29.5)

Conclusions: This QC process of real-world data collected in a NICE CG95 compliant NHS environment demonstrates that the disease population presenting to GM RACPAC clinics is reasonable stable over time and broadly similar to the population studied in SCOTHEART. It provides a sound data for commissioners and healthcare providers with respect to the disease distribution and severity presenting via NICE CG 95 compliant RACPAC clinics. Importantly, it demonstrates that temporal disease variability is unlikely the consequence of significant variability of CAC-RDS and CAD-RDS application and variation when applied by experienced practitioners and as such validates these tools to compare regional and national data.

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