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Abstract 31: Radiation Dose On A Novel Generation Purpose Built Single Heart Beat Cardiac Ct Scanner(GE Cardiographe^{Tm})

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Introduction: The purpose of this study was to evaluate radiation dose for Computed Tomography Cardiac Angiography (CTCA) on a purpose built single heart beat cardiac CT scanner. As the only scanner of its kind, the GE CardioGraphe^{TM} CT presented us with a dedicated system to produce high quality images albeit keeping the radiation dose as low as reasonable achievable. There is currently no UK national dose reference levels (DRL's) or European DRL's for CTCA. The British Society of Cardiovascular Imaging (BSCI) have proposed a DRL of 200mGycm^2. For a group of patients we compared our radiation doses on this new scanner with the available published data.

Methods: We looked at the data retrospectively for a group of patients scanned over a period of two weeks in August 2018. This consisted of 58 patients. Each of these patients underwent both a cardiac CT calcium score, followed by CCTA on the GE CardioGraphe^{TM} cardiac CT scanner. 53% were male (mean age of 61) and 47% females (mean age of 65). CTDI's and DLP's from the CTCA's were analysed taking into account patient's BMI's and heart rates.

Results: The results showed us that the average radiation dose for this group of patients was 190.63 mGycm^2. As shown in the table. We demonstrated that lower doses were achieved with lower heart rates.

Conclusions: 1) Doses were within the BSCI recommended range. 2) Doses compare favourably with current published data.3) Doses for technically difficult patients (e.g. patients in AF) were also comparable. 4) With perfection of technique we hope to further reduce doses using this world first scanner.5) Given these promising results we hope to contribute towards future national and international dose surveys.

Summary of statistics

	BMI	DLP (mGycm^2)	mSv	Heart Rate (bmp)
Median	29.40	164.76		60
Mean	29.49	190.63	5.34	61
Std Deviation	6.14	76.67		11
Range	16.9-49.50	87.98-431.93		35-94

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