

**Table 1** Summary of Patient Demographics. One-way ANOVA was performed for continuous variables and Chi-Square was performed for categorical variables.

Characteristic	Current System (CLARITY) (n=35)	Reference System (XPER) (n=116)	Training Phase (CLARITY and XPER) (n=58)	All Patients (n=209)	p-Value <sup>a</sup>
Age (years)					$p > 0.05$
Mean $\pm$ SD	6.21 $\pm$ 6.45	6.45 $\pm$ 5.51	8.58 $\pm$ 6.20	7.00 $\pm$ 5.92	
95% CI	3.31 – 9.11	5.79 – 11.36	5.79 – 11.36	4.34 – 9.66	
Median	1.87	4.51	7.11	4.88	
Min-Max	0.03 – 20.1	0.07 – 19.64	0.75 – 20.35	0.03 – 20.35	
Gender					$p > 0.05$
Male	19	66	27	112	
Female	16	50	23	89	
Imaged Vessel					$p < 0.05$
External Carotid Artery	3 (9%)	4 (3%)	9 (16%)	16 (8%)	
Internal Carotid Artery	30 (86%)	108 (93%)	42 (72%)	180 (86%)	
Vertebral Artery	0 (0%)	2 (2%)	2 (3%)	4 (2%)	
Common Carotid Artery	2 (5%)	2 (2%)	5 (9%)	9 (4%)	

CI Confidence Interval, SD standard deviation  
<sup>a</sup>p-Value (two-sided) from ANOVA for continuous variables, and X<sup>2</sup> test for categorical variables

**Table 2** Descriptive summary of DAP values for diagnostic procedures. One-way ANOVA was performed between the two groups. DAP reduction was statistically significant for both channels and combined channels at the  $\alpha=0.05$  level.

Variable	Current System (CLARITY) (n=35)	Reference System (XPER) (n=116)	p-Value <sup>a</sup>
<b>DAP Frontal Channel (mGy<sup>2</sup>/frame)</b>			<i>p</i> = 0.045
Mean ± SD	190.10 ± 117.85	255.88 ± 185.65	
Median	164.21	181.08	
Q1-Q3	102.62 – 226.17	144.84 – 271.25	
Min-Max	71.62 – 535.00	49.87 – 994.33	
95% CI	151.06 – 229.15	222.39 – 289.38	
<b>DAP Lateral Channel (mGy<sup>2</sup>/frame)</b>			<i>p</i> <0.001
Mean ± SD	92.97 ± 50.86	153.98 ± 96.02	
Median	76.37	118.55	
Q1-Q3	56.55 – 118.00	94.32 – 191.67	
Min-Max	33.00 – 242.00	38.00– 544.00	
95% CI	76.12 – 109.82	136.66 – 171.31	
<b>Total DAP (mGy<sup>2</sup>/frame)</b>			<i>p</i> =.011
Mean ± SD	283.08 ± 165.85	409.87 ± 278.09	
Median	238.47	292.44	
Q1-Q3	157.51 – 341.04	238.28 – 458.56	
Min-Max	105.00 – 744.66	93.04 – 1505.58	
95% CI	228.13– 338.02	359.69 – 460.04	

CI Confidence Interval, SD standard deviation, Q1 first quartile, Q3 third quartile

**Table 3** Descriptive summary of CAK values for diagnostic procedures. One-way ANOVA was performed between the two groups. CAK reduction was statistically significant for both channels and combined channels at the  $\alpha=0.05$  level.

Variable	Current System (CLARITY) (n=35)	Reference System (XPER) (n=116)	p-Value <sup>a</sup>
<b>CAK Frontal Channel (mGy/frame)</b>			$p = 0.003$
Mean $\pm$ SD	1.04 $\pm$ 0.61	1.52 $\pm$ 1.03	
Median	0.90	1.10	
Q1-Q3	0.58 – 1.29	0.89 – 1.63	
Min-Max	0.39 – 2.77	0.35 – 5.36	
95% CI	0.84 – 1.24	1.33 – 1.70	
<b>CAK Lateral Channel (mGy/frame)</b>			$p < 0.001$
Mean $\pm$ SD	0.39 $\pm$ 0.17	0.77 $\pm$ 0.40	
Median	0.34	0.62	
Q1-Q3	0.25 – 0.48	0.52 – 0.88	
Min-Max	0.14 – 0.80	0.32 – 2.61	
95% CI	0.33 – 0.44	0.69 – 0.84	
<b>Total CAK (mGy/frame)</b>			$p < 0.001$
Mean $\pm$ SD	1.57 $\pm$ 0.87	2.28 $\pm$ 1.39	
Median	1.23	1.71	
Q1-Q3	0.97 – 1.90	1.46 – 2.43	
Min-Max	0.62 – 3.54	0.67 – 7.97	
95% CI	1.19 – 1.95	2.03 – 2.53	

CI Confidence Interval, SD standard deviation, Q1 first quartile, Q3 third quartile

**Table 4** Descriptive summary of acquisition markers for diagnostic procedures. One-way ANOVA was performed between the groups and did not reveal significant difference between groups for number of radiation events or fluoroscopy time.

Variable	Current System (CLARITY) (n=35)	Reference System (XPER) (n=116)	Training Phase (CLARITY and XPER) (n=58)	p-Value <sup>a</sup>
<b>Number of Radiation Events</b>				$p = 0.98$
Mean $\pm$ SD	196.12 $\pm$ 101.53	195.92 $\pm$ 83.30	191.92 $\pm$ 80.58	
Median	155.00	181.50	178.50	
Q1-Q3	124.00 – 232.00	152.75 – 201.00	142.50 – 217.75	
Min-Max	87.00 – 545.00	56.00 – 601.00	101.00 – 573.00	
95% CI	162.48 – 229.76	179.91 – 211.93	155.72 – 218.88	
<b>Fluoroscopy Time (min)</b>				$p = 0.69$
Mean $\pm$ SD	25.82 $\pm$ 23.64	27.24 $\pm$ 22.36	24.74 $\pm$ 17.76	