

Radiation dose during CTO-PCI: Insights from the PROGRESS-CTO registry

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BACKGROUND

Chronic total occlusion (CTO) percutaneous coronary intervention (PCI) has been associated with high radiation doses.

METHODS

We analyzed trends and determinants of radiation dose in 6,457 CTO PCIs performed at 6,305 patients enrolled in the PROGRESS-CTO registry between 2012 and 2020 at 26 US and 4 international centers.

RESULTS

Mean age was 64.5±10.2 years. Most patients were men (82%), 42% had diabetes mellitus and 31% had prior coronary artery bypass graft surgery (CABG). Median body mass index (BMI) was 29.9 [26.6, 34.1] kg/m². The median AK radiation dose of all procedures was 2.3 Gy. Patients in the highest air kerma (AK) radiation tertile (>3.235 Gy) had higher median BMI (32 vs. 30 vs. 28 kg/m², p<0.0001, Wilcoxon rank sum test), were more likely to have prior CABG (40% vs. 34% vs. 24%, p<0.0001, chi-square). Technical success was 86.2% and procedural success was 84.6%. In-hospital major adverse cardiovascular events (MACE) were 2.1%.

CONCLUSION

Radiation dose during CTO-PCI has been **decreasing** over time. Potential explanations include:

- the use of newer X-ray systems
- Improvement in equipment and techniques
- Increased operator expertise

Radiation dose during CTO-PCI has been decreasing over time.

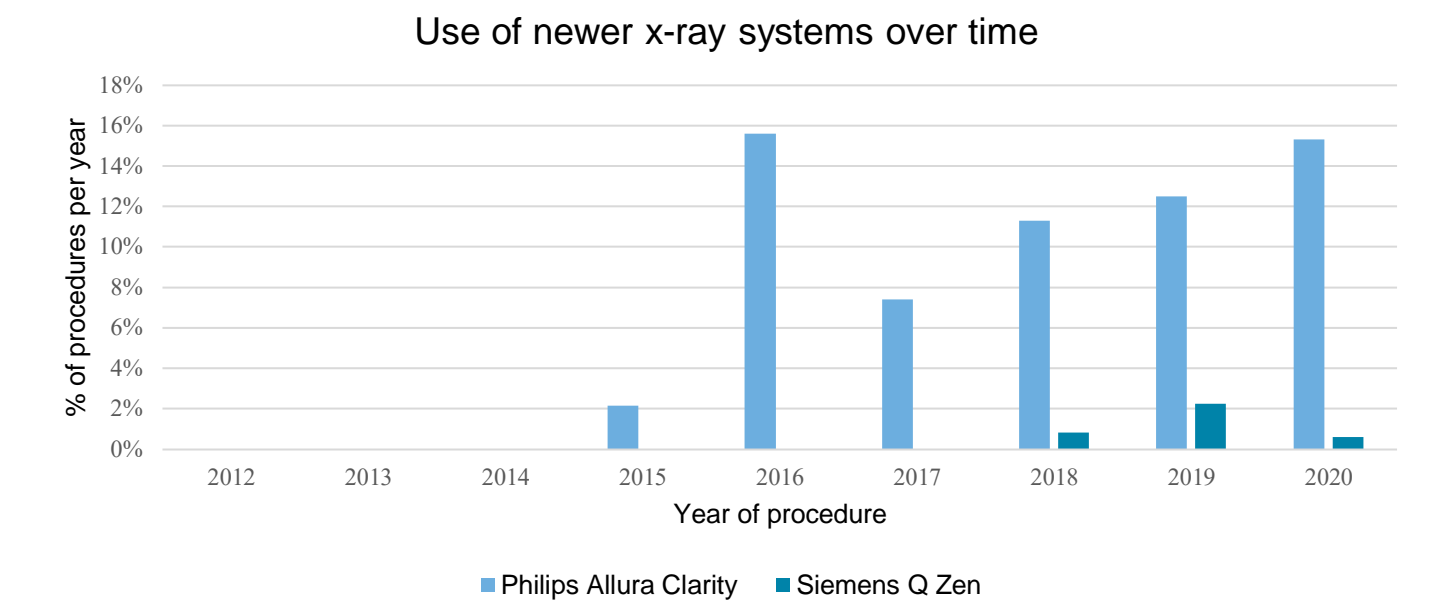
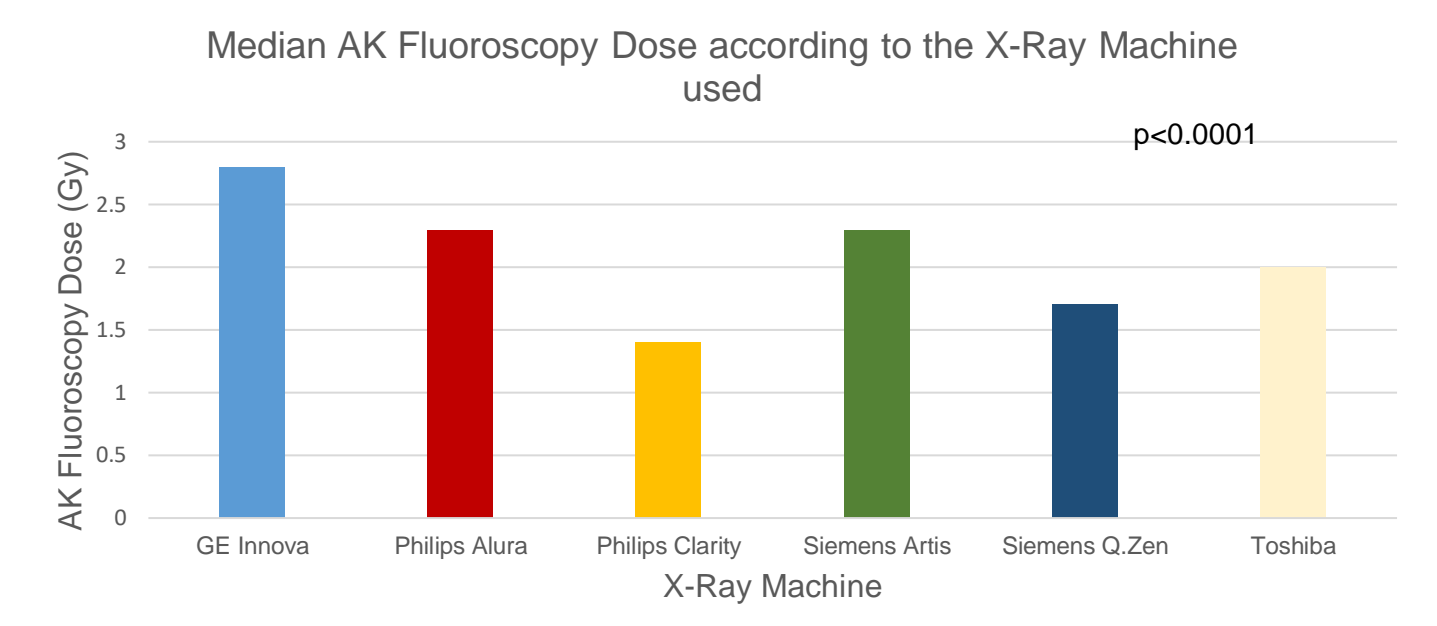
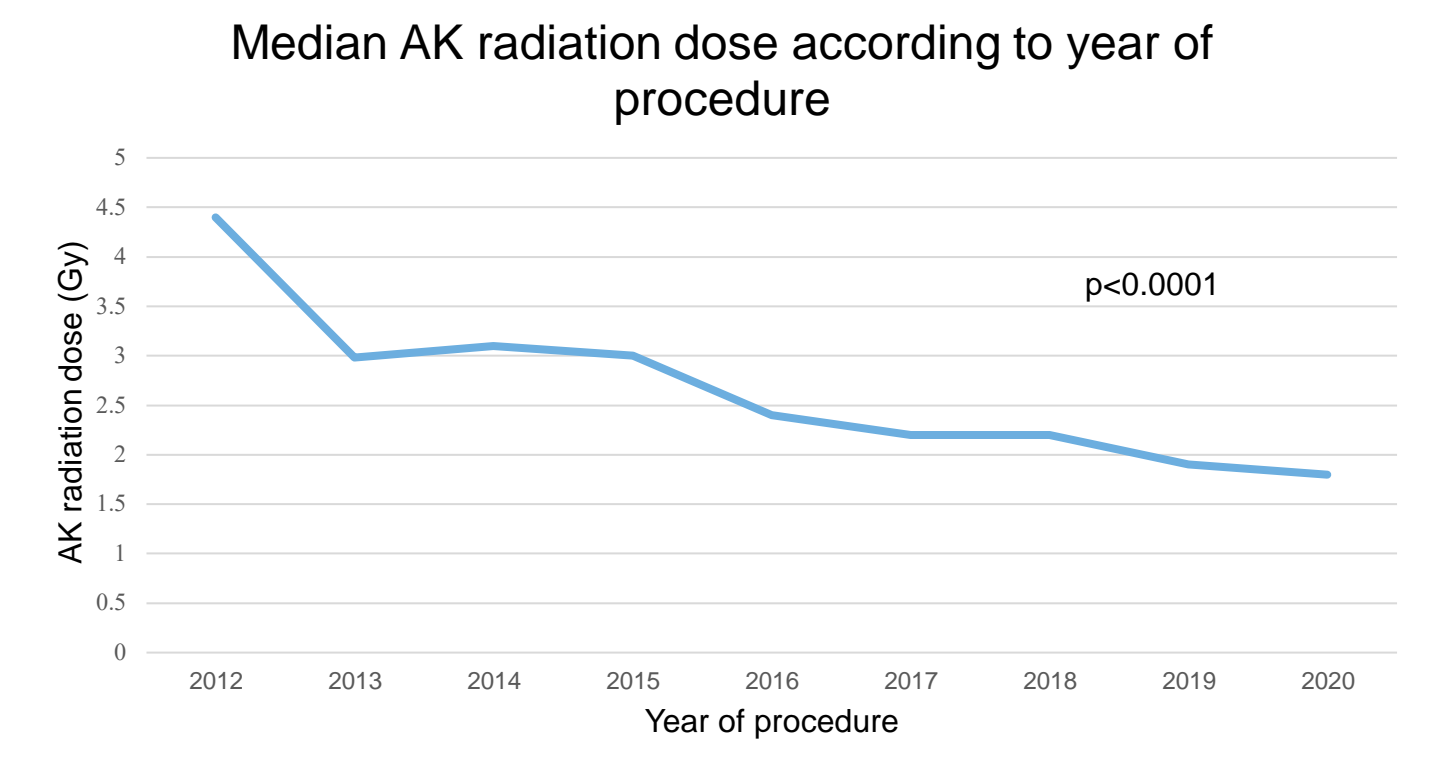


progresscto.org



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FIGURE



LIMITATIONS

1. Observational retrospective study
2. Procedures performed at dedicated, high volume CTO centers
3. No clinical event adjudication by a clinical events committee.

DISCLOSURE INFORMATION

Evangelia Vemmou, MD: nothing to disclose
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