

## Letter

### TO THE EDITOR

## Novel Radiation Reduction Protocol



We found interesting the article by Wassef et al. (1), showing that a novel radiation reduction protocol from Phillips called ECO decreased the  $K_{a,r}$  by 48% in an unselected group referred for coronary angiography and angioplasty. Absolute dose reductions are impressive.

We recently published similar proportion dose reductions in  $K_{a,r}$  and  $P_{KA}$  using the GE Innova 3000 angiography suite (GE Healthcare, Chalfont St Giles, United Kingdom) in 2 of our catheterization laboratories. It was reached basically by manually decreasing the setting to low fluoroscopy mode and the “coronary” default settings from 30 images per second (ips) in fluoroscopy and acquisition, to 7.5 ips in fluoroscopy and 15 ips in acquisition modes, respectively (2). Physicians chose either 7.5 or 15 according to their preferences and the ability to visualize their work while performing coronary angioplasty with stent implantation. Interestingly, one-half of our staff preferred the higher-fluoroscopy 15 ips approach to the 7.5 ips, arguing poor quality of the latter, and the difference in radiation emitted in both groups was not statistically different, though lower in the 7.5 ips group. Again, the correct approach while performing interventional procedures is to deliver as the lowest dose of radiation reasonably achievable. In order to see, one should give radiation. It would be very interesting if the

authors had randomized radiation emission into low- and high-fluoroscopy frame rates. Also, the ability of the interventionalists to perform diagnostic and therapeutic coronary cases should be measured by clearly defined endpoints in advance, preferably controlled by intravascular ultrasound or optical coherence tomography, such as edge dissections and geographical miss. Also, it should be noted that appropriate physician training in the proper delivery of x-rays, and not only the equipment used, is important in reducing the dose to patients, and training should be frequently reinforced because it seems to lose its impact with time (3).

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<http://dx.doi.org/10.1016/j.jcin.2014.06.027>

### REFERENCES

1. Wassef AW, Hiebert B, Ravandi A, et al. Radiation dose reduction in the cardiac catheterization laboratory utilizing a novel protocol. *J Am Coll Cardiol Intv* 2014;7:550-7.
2. Azpiri-Lopez JR, Assad-Morell JL, Gonzalez-Gonzalez JG, et al. Effect of physician training on the X-ray dose delivered during coronary angioplasty. *J Invasive Cardiol* 2013;25:109-13.
3. Georges JL, Livarek B, Gibault-Genty G, et al. Reduction of radiation delivered to patients undergoing invasive coronary procedures. Effect of a programme for dose reduction based on radiation-protection training. *Arch Cardiovasc Dis* 2009;102:821-7.