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Initial experience with dedicated eye lens dosimetry in interventional radiology

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Purpose

In 2020 our Institute introduced the use of dedicated eye lens dosimeters as an addition to the standard estimate through apron dosimeters. This work aims at providing a preliminary overview of our experience with the two methods used side-by-side.

Methods

The readings of the eye lens dosimeters have been compared to the official estimate calculated from the under- and over-apron dosimeters, for three interventional radiologists over a period of around 60 man-months. The two most active radiologists performed on average similar procedures but worn different eye protection gear.

Results

The introduction of the additional dosimeter was in general well received and faced no insurmountable obstacles.

No clear correlation between the direct eye lens dose measurements and the estimated values could be observed.

The exposure recorded by the eye lens dosimeter was on average lower than the estimate by means of chest dosimeters, although the value ranges become similar when the most important correction factors are taken into account.

Conclusion

Dedicated eye lens dosimeters are an additional piece of equipment whose correct usage must be ensured in the daily routine.

The use of these additional dosimeters can simplify the evaluation of the eye lens exposure and reduce the associated errors, by removing variables with heavy influence like exposure geometry and effectiveness of the protecting gear.

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