RETROSPECTIVE EVALUATION OF LENS INJURIES AND DOSE: RELID STUDY

i2 Poster Contributions
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Background: To present the results on prevalence of radiation induced cataract among interventional cardiologists (IC) and paramedical personnel (PP) working in cath labs obtained by a retrospective evaluation.

Methods: During 3 congresses of the Latin American Society of Interventional Cardiology (SOLACI) held in Bogota (Colombia) in September 2008, in Montevideo (Uruguay) in April 2009 and in Buenos Aires (Argentina) in August 2010, 110 IC and 123 paramedical PP accepted to be submitted to pupillary dilatation and slit lamp examination. They also agreed to fill in a detailed questionnaire including medical history, workload, fluoroscopy time, number of cine series, type of x-ray systems and radiation protection tools (ceiling suspended screen and protective eyewear) used so that we could estimate the radiation doses. Cataract staging was scored by 4 independent ophthalmologists. The IC were 30 to 69 years old (46.7 ± 7.8) with 1 to 40 years experience. The PP were aged between 20 to 66 years (32.2 ± 6.8) with from 1 to 30 years of experience. A sample of 93 people never exposed to radiation comparable to the sample of professionals involved in IC aged between 20 to 58 years (40.5 ± 9.2) was used as control.

Results: 49/110 IC (45%) had posterior subcapsular (PSC) lens changes in one or both eyes consistent with exposure to radiation. Merriam-Focht scores ranging from 0.5-1.5 were noted. Out of these, 26/49 (53%) had bilateral changes, 28/49 (57%) reported never or infrequently using eye protection and 30/49 (61%) reported never using leaded ceiling screens. 39/123 PP (32%) had posterior lens changes, being bilateral in 12 cases (31%) with score ranging from 0.5 to 1.5 in one or both eyes consistent with x-ray exposure. The control sample resulted in a 12% of PSC opacities (score of 0.5 in all cases).

Conclusion: This evaluation study examining lens radiation injuries in the personnel involved in interventional cardiology was conducted on the largest sample ever screened. The high rate of posterior subcapsular opacities detected (45% in IC and 32% in PP) demonstrates the imperative need to improve the training in radiation protection and to promote the use of radiation protection tools to reduce the lens exposure.