Contribution ID: **86** Type: **oral (invited speaker)**

Risk of radiation-induced cataract for interventional cardiologists

Thursday 18 October 2012 17:45 (30 minutes)

Interventional cardiologists are exposed to X-rays during their occupational activity and may be at risk to develop early cataracts known as radiation-induced eye lens opacities. The O'CLOC study (Occupational Cataracts and Lens opacities in interventional Cardiology) was performed in France to quantify this risk.
O'CLOC study is a cross-sectional multicenter study including an exposed group of interventional cardiologists –ICs –and a comparable unexposed group of non medical workers. Individual information, including risk factors of cataract were collected. A specific part of the questionnaire focused on occupational history in cardiology and procedures description (kind, frequency, use of radiation protection tools) in order to retrospectively assess cumulated eye exposure of ICs. All participants had a clinical eye examination based on the international standard lens opacities classification –LOCS III –that allowed screening of type (nuclear, cortical or posterior subcapsular) and stage of cataracts.
The study included 106 ICs (mean age=51±7 yrs.) and 99 unexposed people (mean age =50±7 yrs.). For ICs, mean duration of activity was 21 years. Based on retrospective assessment combining information from occupational questionnaire and doses per procedures observed in European countries (ORAMED project), eye lens dose cumulated during occupational life in cardiology ranged from 25 mSv to 1650 mSv (mean=454 ± 369 mSv). About 20% of them had cumulated more than 500mSv corresponding to the ICRP eye lens dose threshold and more than 60% of ICs had been exposed at least once to an annual eye lens dose above 20mSv which corresponds to the ICRP recommended annual limit. Regarding nuclear and cortical lens opacities stage ≥1, no significant difference was observed between both groups. In contrast, posterior subcapsular lens opacities (stage≥1) were significantly more frequent among interventional cardiologists (17% vs. 5%, p = 0.006), corresponding to an adjusted OR= 3.8 [1.3 –11.4]. This risk increased with duration of activity but no clear relationship with workload was observed. However, the risk appeared lower for regular users of protective lead glasses (OR=2.2 [0.4–12.8]).
Interventional cardiologists are at high risk of posterior subcapsular cataracts. Use of protective equipment against X-rays, in particular lead glasses, can limit this risk.

Author: Ms JACOB, Sophie (IRSN, PRP-HOM/SRBE/LEPID)

Co-authors: Dr BREZIN, Antoine (Service d'ophtalmologie, Hopital Cochin, Paris); Mr MACCIA, Carlo (CAATS); Mr LAURIER, Dominique (IRSN, PRP-HOM/SRBE/LEPID); Mr DONADILLE, Laurent (IRSN, PRP-HOM/SDE/LDRI); Dr BERNIER, Marie-Odile (IRSN, PRP-HOM/SRBE/LEPID); Dr BAR, Olivier (Service de cardiologie interventionnelle, Clinique Saint Gatien, Tours); Dr BOVEDA, Serge (Département de Rythmologie, Clinique Pasteur, Toulouse)

Presenter: Ms JACOB, Sophie (IRSN, PRP-HOM/SRBE/LEPID)

Session Classification: Non-Cancer Effects

Track Classification: Non-Cancer Effects