Asian Network of Cardiologists in Radiation Protection

Newsletter January 2008

Issue No. 2

Mission: To enhance cooperation among cardiologists on radiation safety in cardiac catheterization procedures and in procedures that utilise ionizing radiations

From the Editor's Desk

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Dear Colleagues,

Recent timely publications on radiation risks from cardiac imaging modalities have made this very important, but under-recognized, unglamorous topic in our cardiac profession very "hot" world–wide, particularly in Western countries.

Unfortunately, very little data on knowledge and practice of radiation protection among interventional cardiologist is available from Asia. As a first step, our Asian network is trying to fill this gap, while at the same time attempting to improve the situation and estimate the degree of improvement. I take pride that in our second issue of the Newsletter; we have some of our own data to share with our colleagues in the region, so that together we can advance this very "hot" topic further. Such changes as shown in Table on next page are a good sign about the shape of things to be in coming years. We can hope that our dream to be on fore-front in this area can be realized by these small but significant steps.

I strongly encourage our colleagues in the region to continue presenting the topic of radiation protection in their respective countries' scientific meetings, "live" demonstration courses, publications or this Newsletter, as we have a duty towards our patients, our colleagues at work, our profession, our family and ourselves in radiation safety. Help is always available from the network or the International Atomic Energy Agency (IAEA).

Again, I urge you to share and circulate this newsletter with your country's cardiac fraternity. As always, I welcome your comments and look forward to receiving your contributions in radiation safety, be it in cardiac interventions, cardiac imaging or any interesting news items in the field for this newsletter.

Seasons greetings and happy 2008

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Through the desert, looking for garden

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While it is pleasing to note the momentum Asian network is creating, the road ahead is long before one reaches garden.

Let me start as a critic. I had the chance of visiting many labs or interacting with cardiologists from China, Vietnam, Indonesia, Philippines, Thailand, India, Sri Lanka, Bangladesh, Myanmar, Malaysia, Japan and Singapore. I noticed scant attention to radiation protection (RP) by many senior interventional cardiologists. A cath lab director, when asked why ceiling suspended screen and lead flap (present in the lab) were not used, he jokingly remarked that "we are from Army and army members are not afraid to die …….". Another young cardiologist, returning to his country after attending an IAEA training course in 2005, could not convince his senior colleagues to use the ceiling suspended screen for the past 2 years. Seniors awake!!!

Many interventional cardiologists have no idea as to how positioning of patient in relation to image receptor and X ray source can itself cut down radiation dose to patient. If at all there is some concern about radiation, it is for self, hardly for the patient. Many pay little attention to total fluoro or cine duration. At a LIVE course in 2007 in my part of the world, one world-renowned interventional cardiologist started fluoroscopy the moment the rapid-exchange balloon was inserted in abdominal aorta! Very simple things but this is what lack of training can result in.

Strange as though it may seem, but things do not seem better in other parts of the world. Be it lack of educational sessions in international conferences on RP or even concern about points raised in above paragraph. The more I am getting involved in RP; more I realize how little we cardiologists know and how much we need to learn.

On the positive side, during the last 3 years, many Asian interventional cardiologists in leadership position have graduated from IAEA RP Training Courses. Some are actively promoting RP awareness, at the very least, in the busy cath lab they are working in. Clinically-oriented sessions on RP are being introduced at regional cardiology conferences. This Asian network is an example of the lead Asia is taking. It is hoped that all these efforts will translate into better radiation protection for both the patients and the staff.

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Survey of situation of radiation protection in interventional cardiology in Asian countries

Lim Soo Teik (Singapore) & Madan M. Rehani (Vienna)

Countries that responded to survey: Bangladesh, India, Malaysia, Myanmar, Singapore, Thailand, Vietnam (Alphabetically) = 7

Actions	Before participation in IAEA course Y/N	After participation in IAEA course Y/N	Change in situation or practice reported by following number of respondents out of 7 listed above*
Staff protection			
• Use of thyroid shield	N	Y	1
• Use of 2 personal monitoring badges one below the lead apron and another at collar level	N	Y	2
• Lead glasses eye wear	N	Y	3
• Lead flaps for legs protection	N	Y	3
Is there unnecessary movement of people in Cath Lab	Y	N or sometime	5
Is there aawareness on where X-Ray comes from	N	Y	2
Is there a system			
• To test regularly protective devices (eg. Lead Apron) (Y/N)	N	Y	1
• Routine QC testing of angio machine (Y/N)	N	Y	2
• To liaise with medical physicist (Y/N)	N	Y	1
Changes in technique (by operator actions)			
• Keep X–ray tube away from patient	N	Y	5
• Keep image intensifier near to patient	N	Y	4
• Fluoro recording (Y/N)	N	Y	6
• Avoidance (as far as possible) of steep angulation (Y/N)	N	As much as possible	5
• Use of lower frame rate/ pulse rate (Y/N)	N	Y	3
• Use of lesser magnification (Y/N)	N	Y	4
• Proper wedge filter positioning (Y/N)	N	Y	3
• Collimation (Y/N)	N	Y	2
• Avoiding irradiation of same area to achieve skin sparing (Y/N)	N	Y	7
• Reducing cine duration and fluoro time (Y/N)	N	Y	5
Patient dose measurement			
• DAP	N	Y	4
• Skin dose	N	Y	2
• Cumulative air kerma	N	Y	2

* Some changes are due to new equipment. Most data is from representative cath lab, not whole country.

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Dr. Ngo Minh Hung, an interventional cardiologist from Choray Hospital, Ho Chi Minh City, Vietnam attended the IAEA course in December 2006. He reports significant changes in his practice in cath lab, some of which have been included in the survey table in this newsletter. In addition, he has collected good amount of data on patient doses and has contributed a chapter on radiation protection in a book on Basic Interventional Cardiology. For further details please contact drngominhhung@gmail.com

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