Joint Symposium 27
Radiation Protection Committee / Japanese Society of Nuclear Medicine (JSNM)
Wednesday, October 16, 10:00-11:30

Session Title
Lessons from Fukushima - Low Dose Radiation from Environment Radioisotope

Chairpersons
Takahashi Kudo (Nagasaki, Japan)
Glenn Flux (London, United Kingdom)

Programme

10:00 - 10:20 Noboru Takamura (Nagasaki, Japan): Doses and Likely Health Effects in Fukushima

10:20 - 10:40 Richard Wakeford (Manchester, United Kingdom): Controversies and Challenges of the Linear No Threshold Model

10:40 - 11:00 Keiko Kanai (Osaka, Japan): Supporting Fukushima - The Nuclear accident's Consequences on the Region

11:00 - 11:20 Christoph Reiners (Würzburg, Germany): Special Aspects of Radiation Induced Paediatric Thyroid Cancer

1120 – 11:30 Discussion

Educational Objectives

1. Learn the societal and health impact of the Fukushima incident
2. Learn and discuss the implication of low doses of radiation in medicine and environmental incidents
3. Consider implications of medical treatment and the environmental impact of radiation exposure to children and young people with radiation

Summary

The potential effect of exposure to low doses of radiation remains poorly understood, despite many decades of research at huge cost. The current model of keeping radiation doses 'As Low As Reasonably Achievable (or Practicable)', commonly referred to as the ALARA principle, has been adhered to globally for many years in the medical, environmental and occupational sectors. This model is based on a linear extrapolation to low radiation doses of the observable effects of high radiation doses, notably the so-called 'bomb data' obtained from Hiroshima and Nagasaki. An intense debate between experts continues almost monthly on the validity of this model, with advocates

ensuring that regulations are strictly monitored and enforced whilst those opposed to the model claim that there is likely a threshold radiation dose below which no adverse effects would be seen. The current model, the detractors claim, causes unnecessary expenditure, operational limitations and patient and public anxiety. This argument is epitomised by the key topics in this programme. The incident referred to as the 'Fukushima Daiichi nuclear disaster' in which three nuclear meltdowns occurred following a Tsunami, resulted in mass evacuation of the area and a consequent clean up programme that is expected to continue for some decades. However, the health impact of the incident is debatable. Also, social impact was huge due to the lack of well-organized risk-communication to the public. The regulatory insistence on the ALARA principle takes account of public concern in matters of radiation used for medicine, but can be argued to limit patient throughput and diagnostic scan quality in nuclear medicine. Overall the greatest concerns in terms of deterministic and stochastic effects are those pertaining to children and young people. This symposium will cover these topics.

Key Words
Radiation Protection, Radiation Safety, Linear-no-threshold Model, Risk-communication, Fukushima