

## **Introducing the new EANM paediatric dosage card in our nuclear medicine department – initial experience and results**

M W Andersen, L A Refsum H Solheim.

### Aim

To reduce effective doses to paediatric patients by introducing the new EANM paediatric dosage card without loss of diagnostic image quality.

### Materials & methods

The new EANM paediatric dosage card was introduced in our nuclear medicine department in August-September 2007. It replaced the old EANM recommendations except for renographies and renal cortical scintigraphy, for which we calculate the amount of activity to be injected by 3MBq/kg of body weight. We have about 300 paediatric patients every year, and our primary examinations are diuretic renography, renal cortical scintigraphy (DMSA spect), bone scintigraphy, radioiodinated MIBG scintigraphy, hepatobiliary scintigraphy and FDG-PET.

### Results

With the new EANM dosage card we have reduced the administered activity, and thus the effective dose, to children considerably. For a paediatric patient of 20 kg the following administered activity would result from the new EANM paediatric dosage card compared to our old procedures (the FDG-PET refers to a wholebody exam, not brain):

Examination	Old procedure	New EANM dosage card	% difference
Bone Scintigraphy	345MBq	170MBq	50%
FDG-PET (WB)	160MBq	70MBq	55%
Renography	60MBq	34MBq	45%
Hepatobiliary scint.	70MBq	50MBq	30%

All images were evaluated by a nuclear medicine specialist, and were considered to be of sufficient diagnostic quality. Some patients had examinations both before and after introduction of the new dosage card. Comparison of these examinations showed no significant reduction of image quality.

As pointed out by Holm et al. in EJNMMI 34 2007, the new EANM dosage card does not take into account the difference in brain and body FDG-PET examinations and the lower recommended limit of administered activity may be too high.

### Conclusion

Following the ALARA principle, by introducing the new EANM paediatric dosage card we have reduced effective dose to paediatric patients considerably without loss of diagnostic image quality, especially for bone scintigraphy and FDG-PET.