



Short Communication

Alara in pediatric CT – Image gently

A. T. Tayade, V. Gupta and S. K. Kale

Department of Radio Diagnosis, MGIMS, Sewagram ,Maharashtra (India)

Accepted April 12, 2013

The availability and intellectual acceptance of information does not always translate into appropriate action. This is particularly true regarding computed tomography (CT) radiation dose in children. It is estimated that since the 1980s when CT was beginning its ascendancy there has been up to an 800% increase. CT scans in children provide great benefit in patient care when used appropriately. However, the practice of CT has been increasingly under scrutiny because of the association between cancer and low levels of childhood radiation such as in CT. While for most patients the benefits of CT greatly exceed the risks, this margin narrows when an excess of radiation is used. However, increased use requires a team approach to ensure that only indicated exams are performed and at the lowest appropriate dose to the pediatric patient.

Keywords: ALARA , Computed Tomography, Radiation Safety

INTRODUCTION

Alara in Pediatric CT

Alara recommends using all the measures to reduce the unwanted exposure and expose the child at adjusted doses. But apart from the technical parameters what all we can do is the need for the future. The Society for Pediatric Radiology, with an unrestricted grant from GE Medical Systems, organized a multidisciplinary international conference to discuss dose issues in pediatric CT (As Low as Reasonably Achievable, or ALARA, Concept in Pediatric CT—Intelligent Dose Reduction) in August 2001. There were over 100 attendees (participants and registrants) from the crucial disciplines (scientists, physicians, technologists, manufacturers, and representatives of government agencies) necessary to respond to the problem(s).

The transcription of this unique conference is published in its entirety in the April 2002 issue of *Pediatric Radiology* (link.springer.de/link/service/journals/

level of state and medical colleges also particularly in developing countries. Through a combined effort of all imaging healthcare workers from member organizations, educational and awareness campaign has the potential to improve patient care and safety by encouraging thoughtful CT practice tailored to children in the healthcare setting.

What society for radiologists can do

Radiologists are passionate about care of their patients. Society members view themselves as advocates for children in imaging in all facets. Specific steps that can have a significant local impact include:

- Making a commitment to give a talk on radiation protection at pediatric grand rounds, or for a regional interdisciplinary meeting as part of the campaign.

- Offering to give this talk to radiology residents. Many are used to the “adult way,” where CT radiation dose is considered less frequently.

- Displaying the poster in all clinics and emergency room that reminds Doctors to order the CT only

*Corresponding Author E-mail: dr.vinitgupta@gmail.com

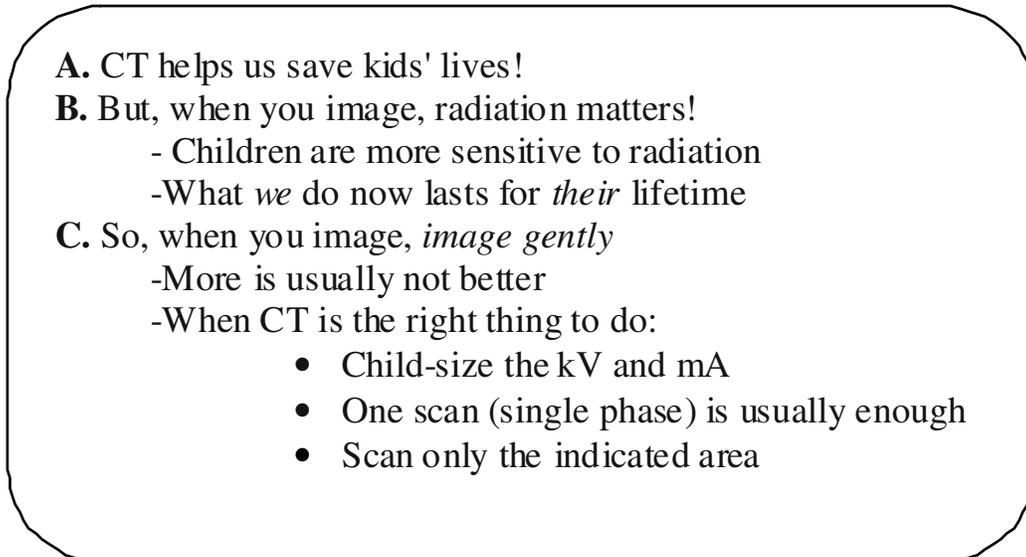


Figure 1. Primary message of the “Image Gently” campaign

protocols where required and look for other modalities if have choice.

– Discussing exam appropriateness with pediatricians and staying committed to individualized CT scan protocols. The risk/benefit ratio for performance of a CT exam must be considered. Repeat CT scanning in a brief time period might not be indicated and radiologists play a crucial role as radiologist-consultant.

Alternate imaging modalities might be discussed. Discussion of specific patients when appropriate provides an opportunity for educational interaction with the child’s pediatrician, who has unique medical knowledge crucial to the care of the patient.

As noted by the National Council on Radiation Protection and Measurements, “any decision by a medical provider to expose a patient to ionizing radiation shall be justified”. This means that the expected benefits to the patient must exceed the overall risk.

The goal of all presentations and meetings should be a positive message, with new insights for referring physicians and increased understanding of the role CT

plays in the care of patients from the pediatrician’s, emergency room doctors and surgeon’s points of view.

There is much to be learned from this dialogue. Our rewards for this effort will be to ensure safer use of our technology and better care of our most valuable asset—our children!

REFERENCES

- Frush DP, Slack CC, Hollingsworth CL (2002). Computer-simulated radiation dose reduction for pediatric abdominal multi-detector CT. *AJR* 179:1107–1113
- Radiation risks and pediatric computed tomography (CT) (2007). a guide for health care providers. National Cancer Institute, Rockville,MD Available via <http://www.nci.nih.gov/cancertopics/causes/radiation-risks-pediatric-CT>. Cited 15 Dec
- Risks and benefits in pediatric CT (2001). MR/CT Committee of the Society of Pediatric Radiology. *Pediatr Radiol* 31:387;discussion 389–391
- Slovis TL (ed) (2002). The ALARA (as low as reasonably achievable) concept in pediatric CT intelligent dose reduction. Multidisciplinary conference organized by the Society of Pediatric Radiology. Aug. 18–19, 2001. *Pediatr Radiol* 32:217–313