Kids Highly Vulnerable to Radiation in Imaging

BY JANE SALDOFF MCEINIEL
Southwest Bureau

Scottsdale, Ariz. — Radiation exposure from the diagnostic imaging of children greatly increases their risk of cancer and other health issues, particularly in the early years, according to a speaker at a pediatric update sponsored by Phoenix Children’s Hospital.

Dr. Thomas L. Slovis and Dr. Alan H. Friedman urged pediatrics to be judicious, limiting their use of chest x-rays and computerized tomography to essen-
tial studies. They also called on pediatrics to insist that radiologists adjust radiation doses to minimize future harm to children.

Among the alarming statistics reported in separate talks were the follow-
ing: • A 1-year-old infant is 10-15 times as likely to develop malignancy as is a 50-year-old adult given the same dose of radiation, according to the International Commission on Radiological Protection. • The equivalent natural-radiation exposure ranges from 2.4 days of natural ex-
posure during one chest x-ray to 4.3 years of natural exposure during one 30-minute cardiac catheterization. Within this range are one upper-gastrointestinal x-ray (0.01 year), one barium enema (equivalent to 2.3 years), and one abdominal CT scan (equivalent to 3.3 years). • The risk of dying from complications of an abdominal CT scan performed in the first year of life is 1 in 1,000. This is greater than the risk of death from a bi-
cycle accident, drowning, or a medical complication, according to the National Safety Council.

• Low doses of radiation comparable to a chest x-ray and 780 mg of aspirin are associated with excess cancers and excess deaths in an ongoing 50-year study of 50,000 atomic bomb survivors (Radiation Research 2000;154:178-86).

The issue is not whether to image, but when and how often and which test, said Dr. Friedman, director of the pediatric echocardiography laboratory at Yale Uni-
versity, New Haven, Conn.

“We’re not careful and thoughtful in the use of the technology, we may be ex-
posing our youngest and most vulnerable patients to potentially dangerous and wor-
some doses of radiation,” he said in an interview. “It may not have an effect in the short term, but we may really start to re-
alize deleterious effects decades down the road. Along with more judicious use of tests, pediatrics should ask radiologists whether they tailor radiation doses for children, said Dr. Slovis, of the division of pediatric imaging at Wayne State Univer-
sity, Detroit.

He advocated widespread application of the concept of ALARA (“as low as reasonably achievable”) to radiation dosing in chil-
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TNF-Blockers Restore Normal Growth in Children

BY ELIZABETH MECHCATIE
Senior Writer

A study that evaluated children with severe juvenile idiopathic arthritis before and after starting anti-tumor necrosis factor treatment indicated that these biological agents appear to be effective in restoring normal growth in this population, reported Dr. Pirjo Tynjälä. The results also suggest that the improvements in growth are related to the impact these treatments have on inflammatory activity, he said.

In the group overall, the mean growth velocity increased significantly during treatment, which was mostly because of the increase in the 53 children whose growth was delayed before starting treatment. Among the 18 children whose growth was normal or accelerated before treatment, growth velocity increased, but not significantly, during treatment. Over the 4 years, there were no significant differences in the total steroid dose among those with delayed growth and those with normal growth.

After 24 months of treatment, disease was inactive in 52% of the patients, and activity decreased in the remainder, Dr. Tynjälä and her colleagues noted. “The change in inflammatory activity ‘remained a significant predictor of the growth velocity, even after glucocorticoids were taken into account,’ suggesting that the improved growth velocity may be because of the reduction in inflammation and not ‘a direct effect of biological agents on growth or on skeletal maturation.’”

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OPANA® ER is not indicated for preemptive analgesia (administration preoperatively for the management of postoperative pain).

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