AbstractID: 14516 Title: Late Effects from Diagnostic Imaging

Kaste AAPM presentation abstract:

Over the past several decades, the use of medical imaging has progressively increased to the point where it accounts for the greatest exposure of ionizing radiation to the general population. The use of CT alone has grown to over 60 million studies per year in the United States and represents the largest contribution to medical radiation exposure. Of these, about 11% (>7 million) are performed on pediatric patients.

Pediatric patients are particularly susceptible to the effects of radiation exposure as their tissues are two to ten-times more susceptible to adverse effects associated with such exposure compared to adults. Further, children have a lifetime in which to manifest radiation-induced effects such a cataracts and the development of cancer. As radiation exposure is cumulative, each exposure must be considered in deciding whether or not the benefit of performing the study outweighs its risk.

Limiting patient exposure from medical imaging is multifactorial and requires judicious use of indicated studies performed with appropriate techniques on equipment that optimizes information while minimizing radiation exposure. Education is key to optimizing medical imaging while minimizing patient risk. Included in such initiatives is public education regarding appropriate use and potential risk of excessive use, education of technologists, radiologists and healthcare providers in general, and technical improvements of imaging modalities.

This presentation will provide an overview to issues specific to pediatric imaging where minimizing exposure to ionizing radiation is critically important and address potential long-term effects of such exposure.

Learning objectives:
1. Understand that pediatric patients are not just small adults.
2. Learn methods for controlling exposure to ionizing radiation in medical imaging.
3. Learn potential sequelae of exposure to ionizing radiation in pediatrics.