Some Things To Know About Radiological Procedures

Tips and Suggestions for Ensuring Patient Safety

What happens if a patient receives a very high dose of radiation during a radiological procedure? There are two general types of risks he/she might face. The first one is readily visible and the symptoms can come relatively early, such as skin reddening, or erythema and hair loss. The second effect might manifest itself slowly and take years to appear, such as an increased risk of cancer.

A decade or two ago, fewer patients had to undergo multiple ionizing radiation-based imaging procedures - X-rays and radiation from radioactive materials - in a single day or session. But today technology has advanced to a state that doctors can now use radiation-based imaging examinations and procedures to discover previously hidden diseases, identify their causes and even treat them using fluoroscopic guided procedures that replace scalpel surgery.

Radiation effects on skin have been reported primarily in patients undergoing interventional procedures (such as angioplasty). This may happen in 1 in 10 000 cases and are not possible in simple examinations such as plain X-rays of chest or any part of the body. Some skin injuries in computed tomography (CT) examinations have only recently been reported and again are rare. With this, the main concern is a long-term risk of cancer.

As the technologies and methods become more common, and as these technologies offer more accurate diagnostic results, many more patients are receiving radiation-based diagnostic and interventional procedures.

International organisations like the IAEA are working to ensure patient protection as radiation-based treatment become common practice. Thousands of health professionals from more than 70 countries have undergone training courses supported by the IAEA. The IAEA has also been spearheading a SmartCard/SmartRadTrack project to enable life history of exposure to radiation-based medical diagnostic and interventional procedures. This will help in avoiding repeat procedures in many situations.

Expert Advise

If you, a loved one or someone you know need to undergo X-ray examination, Dr. Madan Rehani, IAEA radiation safety specialist, offers some suggestions:

- Try and find out if the health facility has a program for quality assurance and certification in which the patient-doses are comparable with international standards;
- Never refuse a needed examination. Despite the risks associated with X-rays, you should bear in mind that the benefits of X-ray examinations outweigh the risks. What is most important is that the examination should have been duly justified by the doctor for you;
- Do not expect the health-care providers to give information on the exact figure of the radiation dose. It is important to know that there is no internationally prescribed "upper limit" for a radiation dose; and
- Carry records of all previous radiological examinations.

More detailed information is available on IAEA's Radiation Protection of Patients (RPOP) website, which has a section with information for patients.

-- By Misha Kidambi, IAEA Division of Public Information