The Department of Atomic Energy (DAE), in collaboration with the Press Information Bureau (PIB) Mumbai, organized a half-day event on Saturday, 23-02-2019 to provide an opportunity for the media to get a deeper understanding of issues germane to the field. The theme chosen for the Media Meet was “Radioisotopes in Healthcare – Radiopharmaceuticals for Nuclear Medicine: DAE Roles and Contributions”.

Excerpts from the speech of Dr K N Vyas, Chairman AEC and Secretary, DAE:

Good morning to everyone present here; my colleagues from DAE and the members of the press. First of all, I welcome you all to this heritage building, known as OYC (Old Yacht Club). The building was completed in 1881 and the Architect was John Adams.

Coming to today's theme I would like to mention that Department of Atomic Energy has a wide mandate and one of the mandates is research and development in the field of radiopharmaceuticals.

Historically speaking, scientists working in the field of nuclear science were aware that radiation and radioactive substances could be used for medicinal purposes and, subsequent to the end of World War – II, a very systematic effort was initiated on peaceful uses of atomic energy. Oak Ridge National Laboratory in USA was the first laboratory in the world to make radioactive Carbon-14 which was given to a cancer hospital for treating skin cancer.

In India, thanks to the leadership of Dr. Bhabha, we constructed the research reactor APSARA in 1956. With this, the work related to radiopharmaceuticals was initiated in India. I may like to mention here that all around us we see the elements which are stable or are not radioactive. If the stable element is placed inside a nuclear reactor it becomes unstable and this is one of the most convenient way of making radioactive substances.

In the initial days, the institute called INMAS (Institute of Nuclear Medicine and Allied Sciences) under the leadership of the then Lt. Col. Mazumdar played a big role in converting the radioisotopes produced in APSARA to radiopharmaceuticals. You will be briefed about many radiopharmaceuticals being used in India today, but in those days, three radioactive compounds which were used are Iodine-131, Phosphorous-32 and Chromium-51.

• Iodine-131 was used for diagnostic purposes as well as for treatment of thyroid related problems;
• Phosphorous-32 was used for treating of fluid accumulation in peritoneum as well as plura, while

• Chromium-51 was used for studies related to blood in human body.

After commissioning of CIRUS in 1960, both the quantity as well as activity of the radioisotopes produced in BARC increased significantly. In addition, Radiation Medicine Centre was started in Mumbai next door to Tata Memorial Centre. Today, TMC and RMC, which are both part of DAE, show a good synergy for treatment of cancer in India.

As you will soon learn that production of radiopharmaceuticals is a multi-disciplinary activity, which involves many stages like:

• Irradiating naturally occurring compounds in a nuclear reactor;

• Removal of the irradiated capsules from reactor;

• Extraction of the required radioactive substance from the capsule and speedy conversion of the resulting radioactive material into radiopharmaceuticals;

• This is to be followed by distribution of the produced radiopharmaceuticals to the hospitals, so that the same can be administered to the patients.

In conclusion, I may bring out that this is a novel attempt by us to brief the friends from the Press about the technical aspects of the work being done in DAE.

Jai Hind.

Glimpses of the event