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Radical IORT Yes or No?

Radiation therapy (RT) is an integral part of cancer treatment for local control, in International Atomic Energy Agency (IAEA) report cancer cure is related to surgery, by 49%, radiation therapy as a single treatment or adjuvant by 40%, chemotherapy as a single or with other treatment by 11%. For local management surgery and RT are two main accepted procedures.

From the first day of X-Ray discovery the scientific community used it as intra operation or external depending on facilities and available accepted status to treat the cases.

The Electron and Proton are other ionized radiation material in RT departments. Nowadays mobile machines are available in the operating rooms to treat the cases with X-Ray or Electron, and because of that some new problems are raising up. Radical and or boost dose of RT are acceptable management, for many cases of abdominal malignancies such as cardia, stomach, pancreas, rectum and retroperitoneal cancers, sarcoma in particular in the retropritoneum and extremities. There is no doubt that IORT in these cases are efficient and acceptable in cancer management but in Breast Cancer there is a different situation.

Nowadays, RT after Breast Conserving Surgery (BCS) is essential part of treatment that in conventional manner, it is used after surgery and chemotherapy with at least 120 days delay. Whole Breast Radiation (WBR) and boost dose are modalities of treatment with at least 30 days engagement. In IORT, these two are done in few minutes (Electron) or half an hour (photon). Because of such differences, IORT is going to be standard of care for selected cases of breast cancer.

There is two important trial called Targit and Eliot using X-Ray and Electron as Boost and/or Radical dose. There is some question about selecting cases for radical dose, to have appropriate outcomes. In two trials all cases less than 50 years old, with early stage breast cancer, tumor size less than 4 cm and node negative, good biological markers(ER, PR positive and Her-2 negative) and appropriate pathological features (Grade 1 and no vascular invasion) were suitable cases for radical RT. Radical IORT for the others are questionable and needs more investigation to use it, here in my country we create a new protocol called IRIORT. In IRIORT, the cases older than 40 years old, with tumor size less than 4cm, node negative are eligible for radical dose of IORT. So we hope that with a suitable period, our data as a new experience will be available to be judged in scientific communities.

IORT is an acceptable RT treatment for whole cases now and in the future as a part of cancer management with other procedures such as external radiation, brachytherapy, and more.

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