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EDITORIAL

COST OF DRUG IS AN ETHICAL ISSUE!!

Cost is an ethical issue in three ways: price, value and burden. Cancer treatment is costly due to high **priced** drugs. How does the patient **value** that treatment? Does the treatment **burden** the family? The high prices of newer treatments and technologies that are set by Pharma Companies or manufacturers are unsustainable for common man and most insurance companies. Pharma companies justify high prices by advertising and marketing drugs as "breakthroughs".

Can we change our prescribing practices so that we don't signal to the manufacturers our tacit acceptance of high cost drugs as the status quo. Clinical oncologists describe their costly drugs as "breakthrough" or "new standard" or "magic bullets". These newer drugs are proved to be more effective than existing drugs and serve the marketing interest of manufacturers. They justify all costs as they need to recoup their research costs. The benefits interms of response rate may be marginal but the researchers call it "Breakthrough". New drug may be slightly more effective than conventional medicines in only 15% patients; it is called "wonder drug". What about the wonder drug not affecting 85% of patients. Do the companies compensate for "not so good response" of wonder drug?

Can the oncologists or clinicians take a moral and professional stand against prohibitively expensive drugs? Can the clinicians prescribe generics rather than branded drugs? In 2013 MSKCC announced that its doctors would refuse to prescribe a drug for the treatment of colorectal cancers priced at more than $11000/ month that according to evidence, offered no advantage over an existing drug. (New York Times, April 26, 2013). This public stance on the part of the MSKCC oncologists led the manufacturer to "Cut the price to half."

This brings us to cost as value. People value their own lives when presented with latest treatment options, people may continue to opt for chemotherapy even near the end of life. Oncologists fail to explain what a treatment can and cannot do for a particular patient. They say it is the latest drug and start comparing branded shirt with a local stitched shirt. The act of offering the drug implies that the drug has value. High price further implies that they drug is newer, better and more worth it. Oncologists should also make every effort to learn what a patient values in life-longer life, quality of life or staying out of hospital.

Finally cost can be experienced as a burden by patient and their families. Imatinib (Gleevac) was introduced for CML in 2001 at cost more than 1 lac/month. It transformed life threatening disease into chronic disease. Now the cost of same drug is Rs. 2000/month. Newer drugs costing more than 1.5 lac/month are entering into market which should be used after failure of Gleevac and not as initial therapy just because new drug is more expensive, and patented. Patients who are able to benefit from either cancer drug will be greatly burdened by high price of new drug. The issue of drug pricing is a matter of urgent moral concern for oncologists in that high price, questionable value or both can harm our patients, our profession and our societies. We must confront the reality of "financial toxicity" for our burdened cancer patients.

Don't you think the pricing, the value and the burden to patients are ethical issues??

Dr. A. K. Dewan
Medical Director

EVOLUTION OF IMRT, SBRT
IS BRACHYTHERAPY A DYING ART IN GYNAECOLOGICAL MALIGNANCIES?

Brachytherapy has been an uncontested form of radiotherapy in almost all forms of gynaecological malignancies. It has been used in almost all stages of cancers of the cervix, endometrial carcinomas, vulval and vaginal malignancies.

Brachytherapy has a long and successful history in the treatment of gynaecological cancers. The first successful applications of radioisotopes to treat cancer were reported shortly after the discovery of radium in 1898. Over the next century and more, the evolution of brachytherapy into a valued component of the radiotherapy for many malignancies became firmly established. For locally advanced cervical cancer, the standard treatment consists of a combination of external-beam radiation therapy (EBRT) along with concomitant chemotherapy followed by a brachytherapy boost . Brachytherapy has also been used in early-stage endometrial and cervical cancers as the sole curative treatment and as an adjuvant treatment in post-operative cases of cervical and endometrial carcinomas. As a boost, brachytherapy has been proved to increase local control and also to increase overall survival. The beauty of brachytherapy lies in its conformity and an unmatchable dose fall off; thus it allows for a high dose to the tumour while sparing the nearby normal structures. Brachytherapy delivers a highly effective dose to the primary tumour-- more than 80-85 Gy biologically equivalent dose in 2-Gy fractions (EQD2) to the tumour periphery while the central part of the tumour receives even higher doses (>120 Gy EQD2). The ability to safely deliver a high dose to central disease explains the excellent local control rates that can be achieved when cervical cancers are treated with a combination of EBRT and brachytherapy. It would be impossible to deliver so high a tumoricidal dose using EBRT alone as it would lead to significant dose to nearby normal structures (mainly rectum, small bowel, and bladder), entailing a high probability of acute and late toxicity.

The physics behind this is simple. The radioactive source is placed very close to the target to be treated. Because of the inverse-square law (the radiation dose decreases exponentially with distance; so as distance goes from x to $2x$, the radiation dose decreases from y to $0.25y$), the nearby normal tissues receive a much lower dose, while the target tissues receives a very high dose[iv].

But inspite of the advantages, many patients may not be able to take this form of the treatment, because of several factors like, medical comorbidities, unfavourable anatomy, and others. Since SBRT (Stereotactic Body Radiotherapy) too offers a high dose conformity allowing a high dose to the target and sparing normal structures around, there is a growing curiosity if SBRT could be used for this group of patients.

Such patients have been treated in the past with EBRT as a boost in place of brachytherapy with overall very poor results. Barraclough et al[v] have reported his experience on 44 patients treated with external-beam boost instead of brachytherapy ("technical limitations" was listed as the reason in 73% of patients) and found a 48% recurrence rate with a median follow up of 2.3 years. While this treatment may be better than no radiation boost at all, but a high local failure rate cannot be avoided.

Various forms of Non Brachytherapy Boosts in Use—
1. External RT Boost
2. IMRT Boost
3. SIB (Simultaneous Integrated Boost)
4. SBRT
5. Proton Therapy

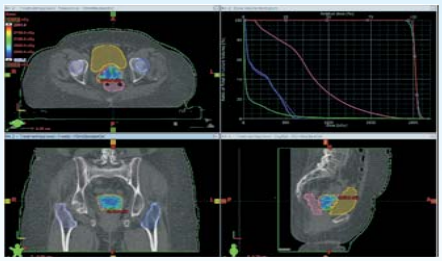
Recently, Han et al published Surveillance, Epidemiology, and End Results (SEER) data for brachytherapy use in patients treated for cervical cancer in the United States. In this study of 7359 patients who received EBRT between 1988 and 2009, only 63% were also reported to have received brachytherapy. The rate of brachytherapy use also dropped from 75%-80% in the 1980s and 1990s to < 60% in 2003. Significantly, patients who were treated with combined EBRT and brachytherapy had a far better overall survival than those treated with EBRT alone (65% and 50%, respectively); there were no significant differences in non-cancer-related deaths between the 2 groups. This fall is inspite of the recent technological advances in image guided planning and delivery of brachytherapy for cervical cancer reporting impressive local control rates of 100% for stage IB, 96% for stage IIB, and 86% for stage IIIB patients[vii].

The fall in brachytherapy could have been due to the rise of use of IMRT during that period. However, interpreting records from SEER should be done with caution. The data do suggest that there might have been a real decrease in the use of brachytherapy after the year 2000 due to inappropriate applications of EBRT, decreasing brachytherapy training and expertise, and failure of clinicians who lacked the ability or resources to administer brachytherapy to refer patients to centres with greater expertise.

Among all EBRT boost techniques mentioned above, SBRT simulates a brachytherapy dose distribution most closely, with sharp dose gradient. In SBRT, multiple noncoplanar beams intersect within the target volume. This produces a high-dose being delivered to the tumor, while maximally sparing the surrounding tissue. In fact, several dosimetric studies have favoured SBRT for optimal target coverage and OAR sparing , In one study, SBRT boost plans were created for 11 cervical cancer patients and compared in dose distribution to Brachytherapy boost plans. Rectal dose to 1 cc (d1cc), bladder d1cc, and median target coverage by the 100% isodose line were all superior in the SBRT plans. In yet another study volumetric-modulated arc therapy (VMAT) dosimetric plans were generated for 51 gynecologic cancer patients, and similarly demonstrated that compared to BT, SBRT yielded favorable rectal d1cc, d2cc, and maximum dose, with comparable doses to bladder and bowel, although BT offered superior integral dose and PTV coverage. Although dosimetrically comparable, the outcome may not be the same.

Recently, Gill et al used the National Cancer Data Base to analyze the radiation dose-escalation technique that was used in the treatment of 7,654 patients with cervical cancer. From 2004 to 2011, use of brachytherapy decreased from 96.7% to 86.1% whereas use of IMRT and SBRT increased from 3.3% to 13.9% (P.01). The median survival time was 70.9 months for patients who received brachytherapy compared with 47.1 months for those dose-escalated with either IMRT or SBRT as an alternative to brachytherapy. The risk of cervical cancer-specific death was significantly higher for women who did not receive brachytherapy (hazard ratio of 1.86)

despite controlling for several relevant clinical and pathologic factors. Of particular note, the increase in the mortality rate was more pronounced for patients who did not receive brachytherapy than for those who did not receive chemotherapy.



SBRT Plan simulating HDR brachytherapy plan

At RGCIRC, SBRT has been done in about 10 patients, who were not suitable for the invasive intra cavitary brachytherapy, with good and comparable local control. Our current treatment protocol is to treat to 20-25 Gy in four to five fractions using dose constraints as described previously.

Conclusion

Most of the available data to date are retrospective and heterogeneous. But some trends do emerge from these studies. First of all, there appears to be good local control with SBRT or IMRT according to some studies. Secondly, the major late toxicity seen in the published studies are late GI toxicities.

It has also been seen that the survival is compromised when brachytherapy is omitted. Hence at present, it is not recommended thatwe replace brachytherapy with SBRT or IMRT in patients who are eligible candidates for brachytherapy. However, when a patient is not suitable for brachytherapy, SBRT can be a safe and effective treatment modality. Further work in this area can be used to better define SBRT dose and to prospectively collect toxicity and outcome information on this patient subset.

Dr. Swarupa Mitra
Sr. Consultant & Chief of Gynecological and Genitourinary Radiation Oncology

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THALASSEMIA MEET 2016

Thalassemia Major is a common and deadly disease. The kids affected with Thalassemia Major require regular blood transfusions to survive and at the same time they also suffer from iron overload, organ dysfunction/ chronic infections and usually death early in life.

Thalassemia can be cured by bone marrow/ stem cell transplantation. The defective stem cells of thalassemia patients are replaced with healthy cells from a HLA matched donor from within the family or outside of family / unrelated donor.

Rajiv Gandhi Cancer Institute & Research Centre is a leading BMT centre of north India providing this curative treatment for thalassemia patients. We provide both related donor as well as unrelated donor transplant.

The Haemato - Oncology team of RGCIRC organized an event "Thalassemia Meet" on Thursday, 16th June, 2016 at Hotel Crown Plaza, Rohini, Delhi. Some Thalassemia kids gave amazing performances. Our Chief Guest D.S. Negi (CEO, RGCIRC), Dr. J. S. Arora (Head of National Thalassemia Welfare Society, Delhi) were mesmerized by their performance.

The event was organized as an initiative towards getting all thalassemia patients & their families under one roof. It was an interactive session where the parents and the thalassemia kids were inquisitive regarding the disease and treatment options these days. A quiz was planned where questions were based on Thalassemia disease, treatment and some general knowledge and bollywood questions to make it interesting for the children. Some of the patient's have undergone bone marrow/stem cell transplant at our institute. These patient's & their families helped other Thalassemia parents to know the pros and cons of Bone marrow/stem cell transplant procedure.

NURSES WEEK - 2016
NURSES - A FORCE FOR CHANGE - IMPROVING HEALTH SYSTEM'S RESILIENCE

Nurses' week celebration started on 6th May, 2016 with an academic session on Line care by Sister Robina, which was followed by lamp lighting by Dr . Gauri Kapoor, Director – Pediatric Hematology Oncology, Dr. Anil Kumar Gupta, JMS cum Registrar - Academics and Ms. Kathleen G. Jacobs, Chief of Nursing. Ms. Susen briefly talked about the founder of modern nursing - Florence Nightingale.

Dr. Gauri Kapoor and Ms. Kathleen G. Jacobs addressed the nurses about the role of Knowledge and skills in patient care and congratulated the nurses for their endless

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contribution to healthcare and patients.

The week activities were as follows:

An academic session on nursing excellence by Ms Neeta, Phlebotomy, Line Care, Wound & Ostomy care by Mr. Libu, and a refreshing Quiz competition was held.

Finally on 12th May, Nurses Day was celebrated in Ashray from 3.30pm onwards. Dr. A. K. Dewan, Medical Director and Chief of Head & Neck Surgical Oncology and Dr. Gauri Kapoor addressed the nurses after lamp lighting. Ms. Kathleen G. Jacobs spoke on this year's theme for nurse's day. There was a cultural program with an opening dance performance on Shri Ganesha, a Solo song of yester year byMr. Thompson, brake dance and lastly a Punjabi dance performance which was the main attraction and was enjoyed by everyone, followed by cake cutting & high tea after vote of thanks by Ms. Kathleen G Jacobs.

CONTINUING MEDICAL EDUCATION PROGRAMME – API MORADABAD, UP

RGCIRC organized a CME Programme on Oncology in association with API, Moradabad on Saturday, 11th June 2016. Dr. L. M. Darlong, Consultant & Head – Thoracic Surgical Oncology delivered a talk on "Advances in Thoracic Oncology". The talk was very well appreciated by members of API Moradabad.

We would like to keep you abreast of the latest developments at RGCIRC. Please send us your updated address, contact number and email id at marketing@rgcirc.org

Architect's Impression of RGCIRC (post expansion)

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