

From tissue treatment to human being treatment: is radiotherapy ready to change?

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SUMMARY

The increasing request of radiotherapy in the next years, according to recent past trend, could be an opportunity to include new characters in the process of radiotherapy renewing that is involving all the modern medicine. "Tissue" has been till now the key word in radiotherapy, while scientists seem not to care about the fact that their real substrate is "humans".

Key words: radiotherapy, IAP

INTRODUCTION

The increasing request of radiotherapy in the next years, according to recent past trend [1], could be an opportunity to include new characters in the process of radiotherapy renewing that is involving all the modern medicine. It is not only time to increase the services' number in the world but also to involve patients in the process of changing machines and accessories design in order to humanize the radiotherapy's sessions.

"Tissue" has been till now the key word in radiotherapy. However, these white big machines, with poetic names and the physic Nobel technology inside, exploiting years of knowledge and research, able to fascinate physicians around the globe, are able to save tissues, assure radioprotection but seem not to care about the fact that their real substrate is "humans".

The current machines are designed for tissue treatments and till now, probably there has been the false belief that people under them is prone to afford every discomfort.

The state of mind of a person that for many minutes lies for days and months in an unpleasant position, scared by the movement of an engineered sloth, is not a priority of the radiotherapy machine industry. In the internet era, the increased awareness of the people accessing medical treatment is a more and more spread and wider phenomenon, with the consequence that the expected knowledge asymmetry between doctors and patients is quickly reducing over time. The so called "patient" is always less dependent by doctor competence and communication skills and in many cases, according to the education level, a large amount of details about diseases, therapies and side effects are reported by the affected person. This is the reason why a new term has been proposed instead of "patient": "Individual, Active Participant" (IAP) [2].

Scientific societies nowadays organize meetings with the aim to promote the sharing of experience between users and suppliers, like the "Patient Day" by Marie Curie Legacy [3], in order to improve high-quality and tailored treatments and to fight diseases reducing psychological distress. This point of view is of particular important for radiotherapy where professionals have had always careful attention to side effects.

ESTRO Vision 2030 [4] is a very important and suggestive

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document for those who will take care of all who need radiation oncology in the near future. On these terms, the WHO together with Allianz for Patient Safety has produced precious educational material for the radioprotection of patients. [5].

IAPs are becoming actors of this new medicine and, of course, of radiation oncology too. An Individual active participant in radiotherapy department can give a substantial contribution in key innovation. For example, the Australian mask removing campaign “Remove the mask” were started by patient experience and it is still in progress collecting wider and wider consensus [6].

However, IAPs involvement is not only something useful for “humanization” but their participation can likely project new radiotherapy delivery based on their personal experiences.

The people that had lived this experience knows very well how the time perception under radiotherapy treatment could change, how taking the same unnatural position for minutes could be so uncomfortable, causing fainting and dizziness. In order to be treated, the person should be still, otherwise the radiation could fail the target and affect undesired part of the body; it cannot be hidden that also the breathing control, became very stressful; the bed on which the person lies is hard and cold and it is remotely moved.

During years the technology developed for the radiotherapy was

characterized by significant progress and evolution: distribution and modulation of doses, tissue protection, measurement precision, self-detecting error, reduction of noise. On the other hand, the machines are nowadays becoming more and more patient-friendly, tailored on the doses and the surface involved, open and with a wide-side sight around leaving perception of the surround.

The design of machine has to become pleasant, clever, and safer in order to optimize the treatment experience and to limit and prevent harms to not interested tissues.

Concluding, the increasing access to the radiotherapy for cancer, the increased awareness of the potential IAP of the care path are the basis for the possible development of machines that allow a dignified and easier treatment.

The stakeholders, technologists and designers should start from day-by-day people experience, from the witness of the medical staff, creating a machine designed around humans not a rifle whose bullets are gamma-rays or electrons. Ergonomics should help with the aim to reach a position that should be as much natural as possible even seated or stand up (IGRT systems could permit it).

The following steps will allow the people feel safe, physically and psychologically comfortable, aware and confident.

REFERENCES

<p>1. Borrás JM, Levens Y, Barton M, Corral J, Ferlay J, et al. How many new cancer patients in Europe will require radiotherapy by 2025? An ESTRO-HERO analysis. <i>Radiother Oncol.</i> 2016;119:5-11.</p> <p>2. Topol E The Patient Will See You Now: The Future of Medicine Is in Your Hands. <i>J Clin Sleep Med.</i> 2015;11:689-690.</p> <p>3. https://mariecurielegacy.org. 2020.</p>	<p>4. Lievens Y, Ricardi U, Poortmans P, Verellen D, Gasparotto C, et al. Radiation Oncology. Optimal Health for All, Together. ESTRO vision, 2030. <i>Radiother Oncol.</i> 2019;136:86-97.</p> <p>5. https://www.who.int/patientsafety/activities/technical/radiotherapy_risk_profile.pdf . 2020.</p> <p>6. https://crowdfunding.sydney.edu.au/project/13874/wall</p>
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