

Curative Radiotherapy Treatment for Non Melanoma Skin Cancer: The Airo Campania Experience

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ABSTRACT

Radiation therapy (RT), for patients with non-melanoma skin cancer (NMSC), achieve high LC rates and favourable toxicity profile. The AIRO Campania board presents retrospective data collection of NMSC patient treated with exclusive RT. Tumor response was defined according to RECIST criteria and toxicity according CTCAE v 0.5 scale. Local control (LC) was defined as stable disease, complete or partial response to treatment. A total of 263 patients treated from January 2019 to March 2022 were enrolled from eight Centres. The most frequently used fractionation (24%) was 40 Gy delivered in 5 fractions. At a median follow-up of 11 months, LC was achieved in 89% of patients. G3 toxicity rate was only 5%. The data reveal an effective collaboration in the creation of the first retrospective database of NMSC patients in Campania. We need to standardize following current guideline and as for follow-up data, clinical and radiologic response criteria.

Keywords: Radiation therapy (RT); The AIRO Campania board; Local control (LC)

Non melanoma skin cancer (NMSC) represents some of the most common types of cancer. Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are mainly caused by sun exposure promoting neoplastic transformation of precancerous lesions according to a precise carcinogenic pathway or by ex-novo lesions promoted by immunodepression or genetic syndromes^[1, 2]. Incidence is dramatically increasing due to world population aging and public health implications are vastly underestimated in terms of morbidity and treatment costs^[3]. Surgery with adequate margins is primary treatment and radiotherapy (RT) could represent a safe and well tolerated therapeutic option for patients who are inoperable due to refusal, poor clinical condition or surgical infeasibility. Radiotherapy could be also used as primary therapy for surgical difficult zone as face and lips^[4]. Different techniques and fractionations are used depending on patient's and lesions characteristics^[5]; this variability can be confusing and a possible source of medical errors. Multidisciplinary tumor boards are trying to enhance a more active collaboration among skin tumours specialists to choose optimal therapeutic strategy for every patient^[6]. Starting from a plenaria discussion of these topics in AIRO (Associazione Italiana Radioterapia Oncologica) Campania meeting, the board presents retrospective data of NMSC patient treated with exclusive RT in high volume centers in Campania. All patients were not suitable for surgery for medical conditions or patients choose and all of them have signed an informed consent to the proposed treatment. Clinical and dosimetric data about RT treatment and acute (during treatment and up to 6 months) and late (after 6 months from RT) toxicity information according to the Common Terminology Criteria for Adverse Events (CTCAE) 5.0 scale^[7] were collected. Treatment response, considered as complete response (CR), partial response (PR), stable disease (SD) and progression disease (PD) was assessed both clinically and/or instrumentally, with TC or RM, dermoscopy and photographic observation according to Response Evaluation Criteria in Solid Tumours (RECIST) criteria^[8]. Local control was considered as CR, PR and SD. Eight centres with experience in the treatment of NMSC (IRCCS Pascale, Università degli Studi della Campania 'L. Vanvitelli', Ruggi D'Aragona Hospital in Salerno, AO San Pio in Benevento, AO San Pio in Avellino, Emicenter Napoli, Emicenter Casavatore, Aktis Marano and Agropoli Radiosurgery) were involved. A total of 263 patients, median age 74 (range 42-99) years treated with exclusive RT from January 2019 to March 2022 were included in our analysis. Patient's characteristics are reported in Table 1. 43% (113 patients) were treated with electron beam, 48% (126 patients) with photon beam and 9% (24 patients) were treated with brachytherapy. Concomitant chemotherapy with Cemiplimab for SCC was administered in 12 (4.5%) patients. Interestingly, many physicians preferred hypofractionated schedule maybe due to age and COVID-19 period^[9]. In particular, the most frequently used fractionation (24%) was 40 Gy delivered in 5 fractions (8 Gy per fraction), although we found eight major different dose schedule, as reported in table 2. Regarding tumor response, we found 97 CR patients, 91 PR patients, SD for 46 patients and 29 PD patients (among these, 18 patients had in field recurrence and 11 out of field in LC nodes). Therefore, LC was achieved in 89% of patients. Treatment was well tolerated, with most patients reporting mild toxicity and G3 toxicity rate of only 5% (13/263). No patients had to interrupt or discontinue RT early due to acute toxicity. Regarding late toxicity, 2% (6/263) patients showed severe fibrosis and (0,4%) 1/263 skin necrosis. Follow up of these patients had been difficult, due to patients and physician's low adherence to follow up schedules with a median of 11 months (range 2-21). Many patients were lost at follow up schedules also for logistic problems. Basing on the results of this preliminary analysis, exclusive RT could be considered as a cornerstone in the treatment

of NMSK for unoperable patients and for difficult to treat areas. This preliminary study confirms how RT is a safe and effective therapeutic modality with high LC rates with favourable toxicity profile, overlapping with literature data. Pros of the experience were an effective collaboration (8 centers) involved with important data sharing: the importance of regional AIRO meeting is fundamental to share ideas and other Campania RT centers asked to join the data update among involved physicians. This data could be the first stone for creation of a network for a prospective study in collaboration with surgeons and dermatologists. Limitations of the experience were the too many fractionations used. We need to standardize following current guidelines, searching also a personalized treatment. Lack of standardization of follow-up data, clinical and radiologic response criteria are a main issue. Enhanced use of interventional radiology is also mandatory for difficult anatomical site as eye, nose and lips regions.

	Patients number (%)
Median age (range)	74 (42-99)
Gender	
Male	196 (74,5)
Female	67 (25,5)
Cancer histology	
BCC	152 (57,8)
SCC	111 (42,2)
Mean lesion maximum diameter (range)	2,9 (0,3-6,2)
RT type	
EBT	113 (43,1)
BRT	24 (9,1)
3D-CRT	99 (37,6)
IMRT	27 (10,2)

Table 1: Patient clinical and treatment characteristics. BCC: Basal cell carcinoma, SCC: Squamous cell carcinoma, RT: radiation therapy, EBT: electron beam therapy, BRT: brachytherapy, 3D-CRT: 3D-conformal radiation therapy, IMRT: intensity modulated radiation therapy.

Schedule		Number of patients (%)
Total dose (Gy)	Number of fractions	
40	8	62 (23,6)
60	30	58 (22,1)
35	5	27 (10,3)
35	7	23 (8,7)

60	20	20 (7,6)
50	25	11 (4,2)
54	27	11 (4,2)
52,5	6	7 (2,6)
40	20	4 (1,5)
Other		40 (15,2)

Table 2: Most frequently used radiotherapy schedules.

REFERENCES

1. Peris K, Fargnoli MC, Garbe C, et al. Diagnosis and treatment of basal cell carcinoma: European consensus-based interdisciplinary guidelines. Eur J Cancer 2019; 118: 10-34.
2. Stratigos AJ, Garbe C, Dessinioti C, et al. European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 1. Epidemiology, diagnostics and prevention. Eur J Cancer 2020; 128: 60–82.
3. Jones OT, Ranmuthu CKI, Hall PN, et al. Recognising Skin Cancer in Primary Care. Adv Ther 2020; 37: 603–616.
4. DI Stefani A, Del Regno L, Piccerillo A, Peris K. Practical indications for the management of non-melanoma skin cancer patients. G Ital Dermatol Venereol 2017; 152: 286–294.
5. Muto P, Pastore F. Radiotherapy in the Adjuvant and Advanced Setting of CSCC. Dermatol Pract Concept 2021; 11: e2021168S.
6. Mori S, Navarrete-Dechent C, Petukhova TA, et al. Tumor Board Conferences for Multidisciplinary Skin Cancer Management: A Survey of US Cancer Centers. J Natl Compr Canc Netw 2018; 16: 1209–1215.
7. Common Terminology Criteria for Adverse Events (CTCAE). 2017; 155.
8. Eisenhauer EA, Therasse P, Bogaerts J, et al. New response evaluation criteria in solid tumours: Revised RECIST guideline (version 1.1). European Journal of Cancer 2009; 45: 228–247.
9. Tagliaferri L, Di Stefani A, Schinzari G, et al. Skin cancer triage and management during COVID-19 pandemic. J Eur Acad Dermatol Venereol 2020; 34: 1136–1139.