

XXXIII CONGRESSO NAZIONALE AIRO

# AIRO2023

BOLOGNA,  
27-29 OTTOBRE 2023

PALAZZO DEI CONGRESSI

Radioterapia Oncologica: l'evoluzione al servizio dei pazienti



Associazione Italiana  
Radioterapia e Oncologia clinica



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## Role of ablative regimen and prior chemotherapy in liver metastases treated with SBRT

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**AIM**

Stereotactic Body Radiation Therapy (SBRT) has emerged as a therapeutic option in the ablative treatment of liver metastases. There is wide heterogeneity of clinical scenarios, both in terms of fractionation and technique, so the aim of this work is to evaluate the effects of SBRT to assess whether there are predictors for Overall Survival (OS), Local Control (LC) and Progression Free Survival (PFS).

**MATERIALS AND METHODS**

Among the 88 patients with liver metastases treated from 28/01/2019 to 14/12/2022 in our center, we included the 62 for whom radiological follow-up was available. Patients were treated either with fiducial based real time tumor tracking (CK) or abdominal compression VMAT. Clinical and treatment-related data were analysed. Survival analysis was performed using the Kaplan-Maier, survival curve comparison was performed with Log-rank Test and Cox regression.

**RESULTS**

Of the 62 patients, with median follow up 12 months, 25 were oligometastatic (OM) and 37 oligoprogressive (OP); 24 had metastases of breast origin, 17 of colorectal origin and 21 had other histologies; 44 were chemo-naïve or at first-line chemotherapy and 18 were multi-chemotherapy treated (>1 line). Seventeen patients had VMAT treatment and 45 CK treatment. (Tab.1) SBRT was delivered in 3-5 fractions for a DTF of 30-60 Gy. Median BED was 112.5 Gy with 39 patients treated with BED > 100Gy.

	N (%)
Median age	67
Metastatic setting	
Oligometastatic	25 (40)
Oligoprogressive	37 (60)
Site of original primary tumor	
Breast	24 (39)
Colorectal	17 (27)
Others	21 (34)
Line of chemotherapy	
0-1	44 (71)
≥2	18 (29)
Type of treatment	
VMAT	17 (27)
CK	45 (73)

**Tab.1 Baseline Characteristics**

Median OS, LC and PFS were 21 months, 21 months and 7 months respectively.

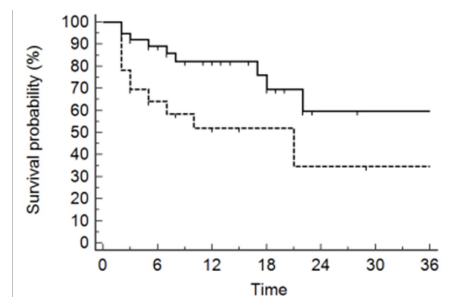
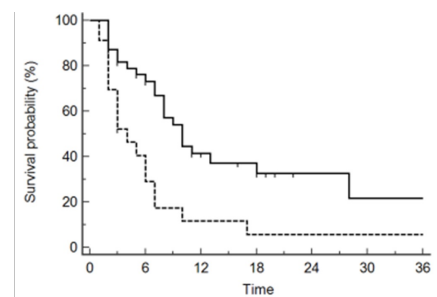
6 months OS, LC and PFS were 86%, 80% and 57% respectively; while 1 year OS, LC and PFS were 69%, 71% and 31% respectively.

LC was correlated to BED >100 Gy (p 0,031, HR 0,4): LC is 41 months and 21 months respectively for BED >100 Gy and <100Gy (Fig.1)

PFS was associated with BED >100 Gy (p 0,002, HR 0,4) (Fig.2) and chemotherapy exposure (p 0.0002), both proved independently correlated at MV analysis (p 0,014 and p 0,0028 respectively).

OS was correlated with chemotherapy exposure (p 0.0301), multi-treated patients with systemic therapy (second line or more) have worse outcomes.

No differences were found in terms of treatment outcome for technique, OP/OM disease and primary histology.

**Fig1. Median LC (BED < 100 vs ≥ 100)****Fig2. Median PFS (BED < 100 vs ≥ 100)****CONCLUSION**

Liver SBRT have good oncological outcomes in both OP and OM disease, particularly in not-heavily chemotherapy-treated patients. Independently of primary tumor, the use of dose intensive regimen (BED >100Gy) have better outcomes. Furthermore the use of abdominal compression assisted VMAT was not inferior to fiducial based real time tumor tracking CK.