

OUTCOMES OF SINGLE-FRACTION SPINAL SBRT FOR SPINAL METASTASES

A retrospective cohort study

Dr Sana Liaquat¹, Dr Tabinda Sadaf¹, Dr Sadia Anjum¹

¹Shaukat Khanum Memorial Cancer Hospital and Research Centre, Radiation Oncology, Lahore, Pakistan.

OBJECTIVE

To evaluate outcomes after single-fraction spinal SBRT, with emphasis on pain response, overall survival (OS), progression-free survival (PFS), toxicity and vertebral compression fracture (VCF).

METHODS

- Retrospective observational cohort, Radiation Oncology, SKMCH&RC, Lahore
- 29 unique patients; 31 single-fraction SBRT courses
- Adults with radiologically confirmed spinal metastases
- Data: demographics, primary tumour, intent, pain outcome, toxicity, VCF, PFS, vital status
- Descriptive analysis; Kaplan–Meier OS

REFERENCES

1. Sahgal A, et al. Lancet Oncol 2021.

2. Guckenberger M, et al. Radiother Oncol 2020.

3. Cox BW, et al. IJROBP 2012.

4. Laufer I, Bilsky MH. J Clin Oncol 2013.

5. Redmond KJ, et al. Cancer 2020.

6. Hashmi A, et al. J Neurosurg Spine 2016.

7. ASTRO Bone Metastases Guideline. PRO 2024.

8. Yamada Y, et al. Spine 2008.

TREATMENT

- All 31 SBRT courses: 18 Gy in a single fraction
- 29 unique patients treated
- Intent: radical 20 (69%), palliative 9 (31%)
- Others in Table 1: nasopharynx, oesophagus, lung, thyroid, rectum (1 each)

TABLE 1. PRIMARY SITE

Site	No	%
Breast	18	62
Prostate	6	21
Others	5	17

TABLE 2. CHARACTERISTICS

Characteristic	No	%
Female	19	66
Radical intent	20	69
Palliative intent	9	31

LIMITATIONS

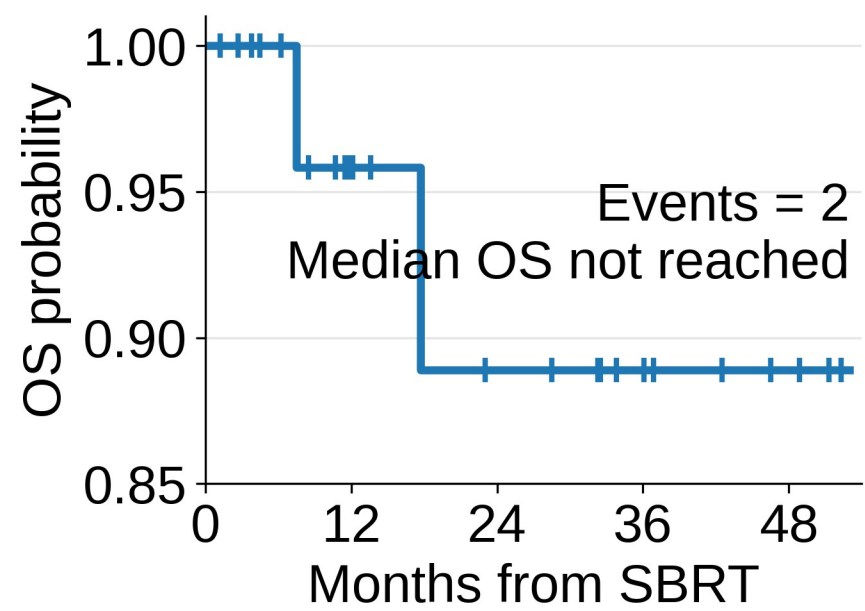
- Small retrospective cohort; variable follow-up
- Toxicity grade/timing not consistently recorded
- VCF timing not explicit
- Local control not assessable

TABLE 3. TOXICITY & VCF

Outcome	No	%
No toxicity	19	66
Acute toxicity	3	10
Late toxicity	7	24
VCF recorded	7	24

RESULTS

- 29 patients (31 courses); median age 46 y (range 32–81); 66% female
- Breast cancer most common primary (62%)
- OS: 1-year 95.8%, 2-year 89.0%; median not reached (2 deaths)
- Median recorded PFS 15 months (range 0–54)
- VCF recorded in 7/29 (24%)



At risk 29 17 12 8 3

Pain Outcome	No
Improved	24
Not improved	3
Not present	2

Pain improved in 24/27 patients with documented pain status (89%).

CONCLUSION

Single-fraction 18 Gy spinal SBRT showed substantial pain improvement (89%) and encouraging overall survival in this preliminary cohort.

Findings are hypothesis-generating (small, retrospective). Local control could not be assessed; formal local-control and standardized toxicity/VCF assessment are needed.