



Memorial Sloan Kettering
Cancer Center

MP14-15: The Spinal Distribution of Metastatic Renal Cell Carcinoma: Support for Locoregional Rather than Arterial Hematogenous Mode of Early Bony Dissemination

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BACKGROUND

- Skeletal-related events (SRE) occurs in 20% of patients with metastatic renal cell carcinoma (mRCC) and is a devastating complication of bony metastasis
- Understanding mechanisms of metastasis may allow for development of prognostic tools to identify patients at risk for SRE's and ultimately, of antimetastatic therapy

OBJECTIVE

- **Investigate distribution of spinal metastasis in mRCC and explore the relationship between clinical factors and patterns of spinal spread**

METHODS

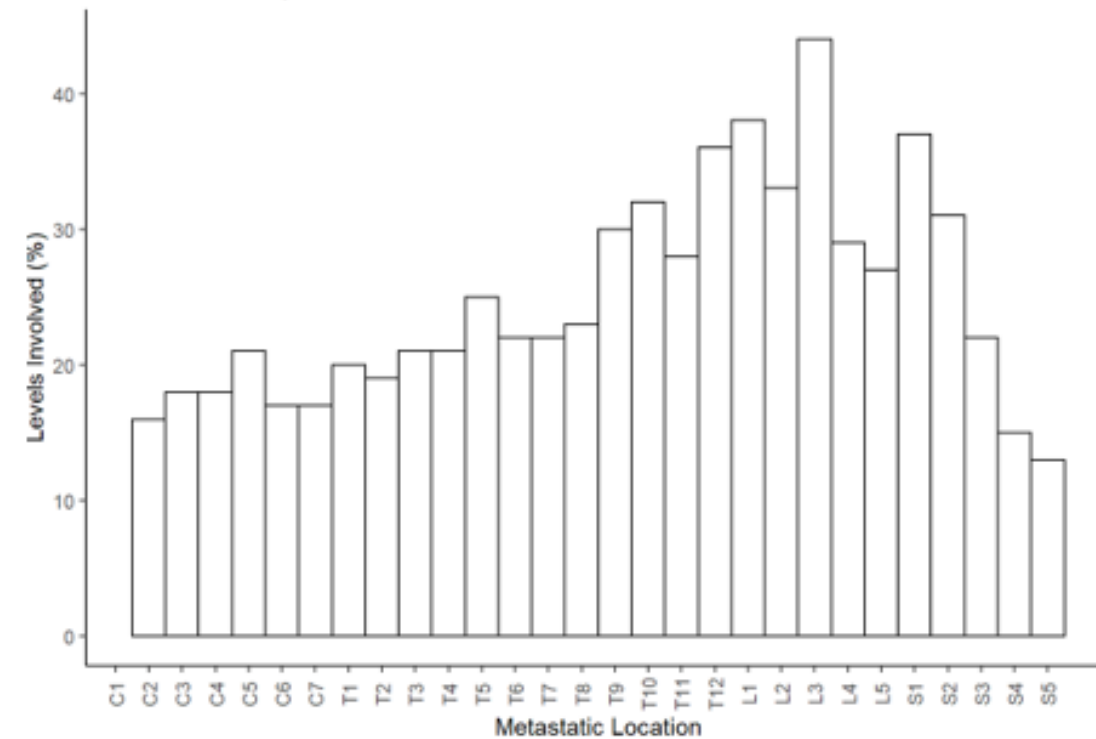
- Retrospectively identified 100 patients with mRCC and spinal involvement
- Spinal distributions evaluated by the Kolmogorov Smirnov test
- Null hypothesis: metastases distributed uniformly across levels



RESULTS

- Nonuniform spatial distribution observed across cohort ($p < 0.001$); **mode** → **L3**
- No difference in metastatic distribution observed in right vs. left-sided tumors or clear cell vs. non-clear cell histology
- **Smaller tumors** (<4cm vs. >7cm) and those with **distant spread** had significantly more uniform distributions of spinal metastasis ($p < 0.001$ and $p = 0.015$, respectively)

Distribution of Spinal Metastasis Across Cohort
(n = 100)



CONCLUSION

- Data supports a dominant locoregional as opposed to arterial hematogenous mechanism for early dissemination of mRCC to the spine
- Characterizations of the biologic molecular features contributing to osseous tropism and aggressive tumor biology are an area of active investigation

