

True Extramedullary Versus Paraskeletal/Paramedullary Disease as Determinants of CAR-T Outcomes in Relapsed or Refractory Multiple Myeloma

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Introduction & Aim

CAR-T therapy has improved outcomes in relapsed or refractory multiple myeloma, but disease outside the marrow is heterogeneous. True extramedullary disease is independent of bone, whereas paraskeletal or paramedullary disease extends directly from an osseous lesion. We evaluated whether these patterns have different associations with response, survival, toxicity, and post-progression outcomes.

Design & Methods

A PRISMA-guided systematic review included primary clinical studies reporting CAR-T outcomes according to extramedullary, paraskeletal, or paramedullary disease status. Extracted outcomes included treatment response, progression-free survival, overall survival, immune-mediated toxicity, infection, non-relapse mortality, and post-progression disease pattern.

Limitations: Retrospective, heterogeneous studies limited direct comparison.
Conclusion: True extramedullary disease identifies a distinct high-risk CAR-T phenotype.

REFERENCES

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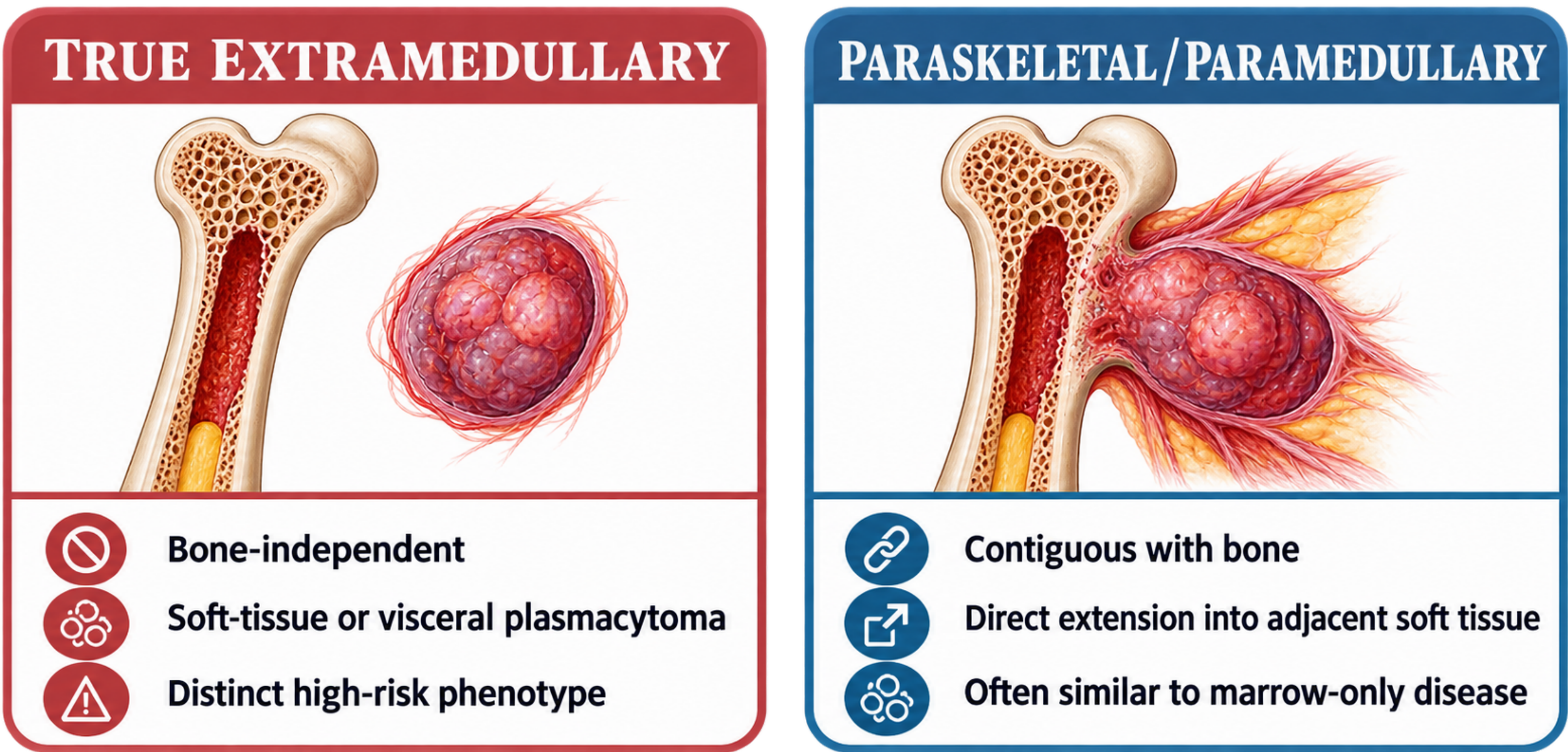
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6 studies | 871 patients



OUTCOME	TRUE EXTRAMEDULLARY	NO TRUE EXTRAMEDULLARY
Overall response	58%	96%
Median progression-free survival	5.1 months	12.4 months
Median overall survival	12.2 months	27.5 months

Results

- True extramedullary disease was consistently associated with lower treatment response and shorter survival.
- Paraskeletal or paramedullary-only disease generally showed outcomes similar to marrow-only disease.
- True extramedullary disease was also associated with greater neurotoxicity, infection, and non-relapse mortality.
- Extramedullary or paramedullary involvement was present in 51% of patients at post-CAR-T progression.

TOXICITY BURDEN

