Prolonged Cytopenia after TCEs: Mechanisms, Biomarkers, and Risk Stratification

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T cell–engaging therapies (TCEs), including CAR-T cells and bispecific antibodies, have transformed the treatment landscape for hematologic malignancies but are associated with distinct, potentially life-threatening toxicities. This class provides a practical, case-based overview of the recognition and management of cytokine release syndrome (CRS), prolonged cytopenia, and infectious complications. We will review current grading systems and evidence-based interventions for CRS, with emphasis on the timely use of tocilizumab, anakinra, and corticosteroids. Mechanisms, risk factors, and monitoring strategies for early and late cytopenias will be discussed, along with supportive approaches. Infectious risks unique to T cell–engaging therapies, including bacterial, viral, and fungal infections, will be addressed with preventive and preemptive strategies. The session aims to equip clinicians with pragmatic tools to optimize safety while preserving therapeutic efficacy in real-world practice.