CRS and ICANS: Early Detection and Personalized Management

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The rapid integration of T-cell engaging therapies into the treatment of hematologic malignancies has introduced a unique spectrum of immune-mediated toxicities, most notably Cytokine Release Syndrome (CRS) and Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS). These toxicities are driven by the systemic activation of T-cells and the subsequent release of inflammatory cytokines, necessitating a proactive approach to clinical monitoring. Early detection remains the cornerstone of safety, requiring a high index of suspicion and the use of standardized tools, such as the ASTCT consensus grading, to identify the early onset of fever, hypotension, or hypoxia. Personalized management strategies are now evolving from reactive interventions toward risk-stratified models that tailor the timing and choice of therapy based on the specific kinetics of the agent used and the patient's baseline tumor burden. Managing these toxicities requires addressing the heterogeneity of patient responses and recognizing the emerging role of prophylactic or preemptive strategies. By identifying high-risk patients early, clinicians can implement individualized monitoring protocols that facilitate the safe delivery of these potent therapies across various clinical settings. Ultimately, the successful administration of T-cell engaging therapies depends on a multidisciplinary framework that ensures rapid diagnosis and the execution of evidence-based management algorithms, thereby maximizing both the safety and efficacy of these transformative treatments for patients with relapsed or refractory disease.