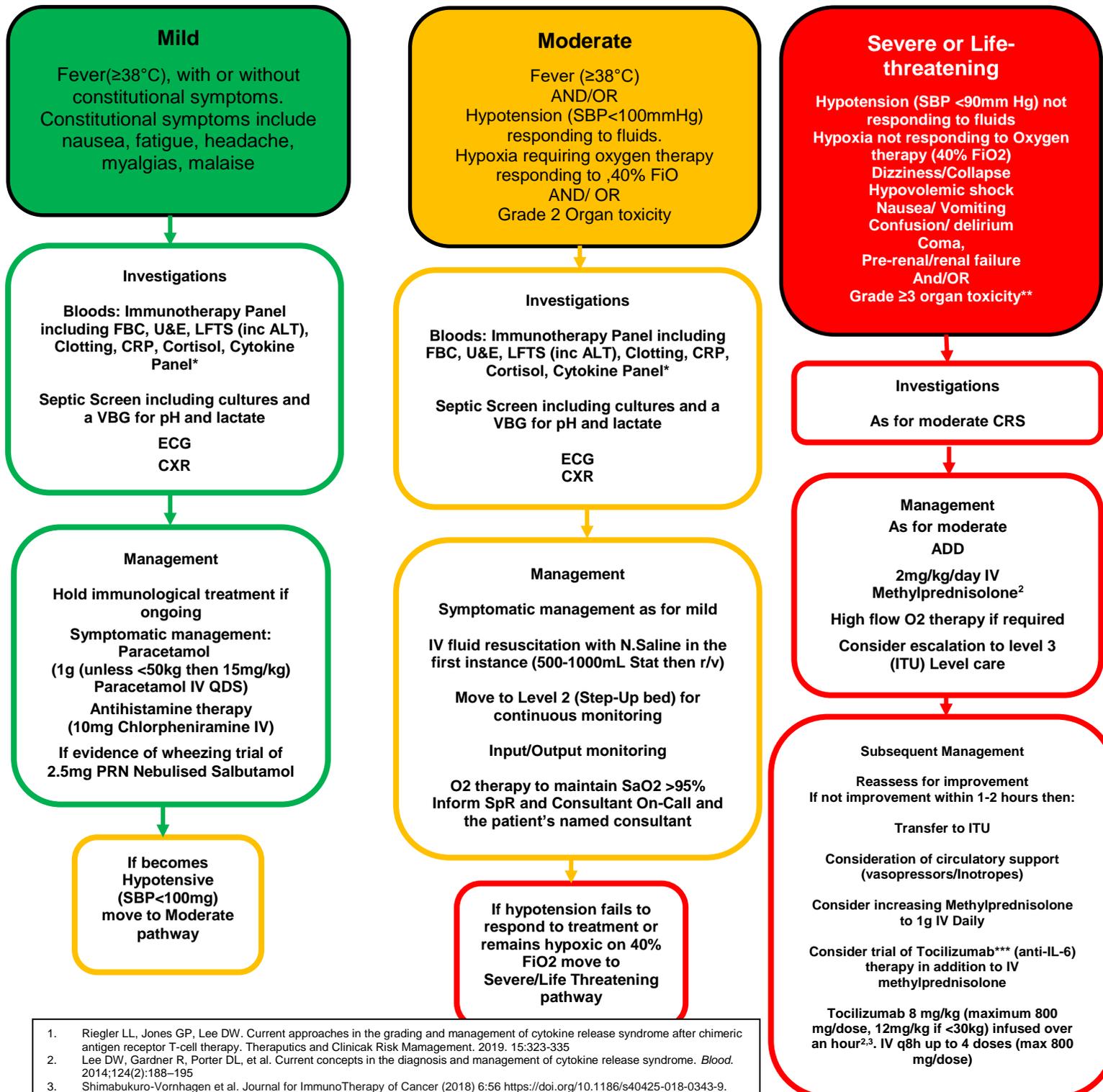


Immune-Related Adverse Event: Cytokine Release Syndrome

Cytokine Release Syndrome (CRS)

CRS has been defined as a systemic inflammatory state that occurs due to robust and widespread immune activation induced by a cell-mediated immune response. The National Cancer Institute defines CRS as a condition that may occur after treatment with some types of immunotherapy, such as monoclonal antibodies and CAR T cells, caused by a large, rapid release of cytokines into the blood from immune cells¹



1. Riegler LL, Jones GP, Lee DW. Current approaches in the grading and management of cytokine release syndrome after chimeric antigen receptor T-cell therapy. *Therapeutics and Clinica Risk Management*. 2019. 15:323-335
2. Lee DW, Gardner R, Porter DL, et al. Current concepts in the diagnosis and management of cytokine release syndrome. *Blood*. 2014;124(2):188-195
3. Shimabukuro-Vornhagen et al. *Journal for ImmunoTherapy of Cancer* (2018) 6:56 <https://doi.org/10.1186/s40425-018-0343-9>.
*If available
** Cardiac (tachycardia, arrhythmias, heart block, low ejection fraction), respiratory (tachypnea, pleural effusion, pulmonary edema), GI (nausea, vomiting, diarrhea), hepatic (increased serum ALT, AST, or bilirubin levels), renal (acute kidney injury, increased serum creatinine, decreased urine output), dermatological (rash), and coagulopathy (disseminated intravascular coagulation)²
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