







Clinical suspicion should be elevated in conjunction with increased transfusion requirements before engraftment

## Organ-specific TMA signs and symptoms

## **Cardio-pulmonary** Renal GI **CNS** Headache Proteinuria Hypoxemia Severe abdominal Hypertension Seizures **Pulmonary** pain Acute or chronic Confusion Signs & hypertension Intestinal bleeding kidney injury Hallucinations **Symptoms** Pleural effusion Diarrhoea **PRES** Pericardial effusion, Vomiting especially refractory Ascites to diuretic/steroid therapy **Brain MRI** Chest imaging Liver ultrasound Random urine Viral serologies Echocardiogram Coagulation studies protein/creatinine Nutritional Bronchoscopy Liver blood tests Urine and blood PCR evaluation including Pulmonary function Amylase, lipase for BK virus Diagnostic thiamine testing Viral serologies & Screening • ECG, troponin Consider stool **Tests** culture for STEC Consider bowel tissue biopsy for **GVHD** and TMA assessment

## Differential diagnoses

Parameter	HSCT-TMA	SOS/VOD	GvHD	Drug toxicity*	DIC
New onset kidney injury	Very Common (primary due to vascular injury)	Common (secondary to fluid overload)	Rare	Common	Common (secondary due to hypotension or shock)
New onset MAHA	Very Common	Rare	Rare	Uncommon	Common
Rapidly progressing thrombocytopenia	Very Common (destruction/consumption due to microangiopathy)	Common (due to platelet consumption)	Common	Drug dependent	Very Common
Hypertension	Very Common	Rare (typically hypotension)	Uncommon (Drug related)	Drug dependent	Rare (typically hypotension)
Seizures/PRES/CNS involvement	Common	Uncommon (encephalopathy with liver failure)	Uncommon (no CNS GVHD)	Drug dependent	Uncommon
Icterus	Rare	Very Common	Common with liver GVHD	Uncommon (Drug dependent)	Uncommon
Liver	Common (transaminase elevation or indirect bilirubin)	Very common (elevated direct bilirubin)	Very Common (secretory diarrhea)	Common	Uncommon
Bowel	Common (injury and bleeding)	Uncommon	Very Common	Uncommon	Uncommon
Skin rash/purpura	Common (advanced cases)	Rare	Very Common	Very Common	Common
Elevated pTT/PT/INR	Rare	Very Common	Rare	Rare	Very Common
CV/lung involvement	Common (as primary vascular injury)	Common (secondary due to fluid overload)	Common (in cGVHD e.g., bronchiolitis obliterans)	Uncommon	Common

BP, blood pressure; CBC, complete blood count; CNI, calcineurin inhibitor; CNS, central nervous system; CV, cardiovascular; EASIX, Endothelial Activation and Stress Index; ECG, electrocardiogram; GI, gastrointestinal; GvHD, graft versus host disease; HLA, human leukocyte antigen; HSCT, hematopoietic stem cell transplant; INR, international normalized ratio; LDH, lactate dehydrogenase; LLN, lower limit of normal; mmHg, millimetres of mercury; MRI, magnetic resonance imaging; mTORi, mammalian target of rapamycin inhibitor; PCR, polymerase chain reaction; PRES, posterior reversible encephalopathy syndrome; PT, prothrombin time; pTT, partial thromboplastin time; RBC, red blood cell; sC5b-9, soluble C5b-9; ST2, suppression of tumorigenicity 2; STEC, Shiga toxin Escherichia coli; TMA, thrombotic microangiopathy; ULN, upper limit of normal; UPCR, urine protein creatinine ratio.

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