



Adverse Transfusion Reactions

While transfusion of blood and its components is usually a safe and effective form of therapy, there are risks of adverse reactions. All adverse reactions to transfusion must be evaluated and documented in the medical record. A brief summary of the reaction types; symptoms and signs; usual causes; treatment and prevention-strategies follows.

TYPE	SIGNS AND SYMPTOMS	USUAL CAUSE	TREATMENT	PREVENTION
Acute intravascular hemolytic (immune)	Hemoglobinemia and hemoglobinuria, fever, chills, anxiety, shock, DIC, dyspnea, chest pain, flank pain	Incompatibility due to clerical errors, involves ABO (primarily) or other erythrocyte Ag-Ab incompatibility	Stop transfusion; hydrate, support blood pressure and respiration; induce diuresis; treat shock and DIC	Avoid clerical errors; insure proper sample and recipient identification
Delayed extravascular hemolytic (immune)	Fever, malaise, indirect hyperbilirubinemia, increased urine urobilinogen, falling hematocrit	Usually involves non-ABO Ag-Ab incompatibility occurring 3-10 days post transfusion	Monitor hematocrit, renal function, coagulation profile; no acute treatment generally required	Awareness of patient transfusion or pregnancy history
Febrile	Fever, chills, rarely hypotension	Antibodies to leukocytes or plasma proteins	Stop transfusion; give antipyretics	Pretransfusion antipyretic; leukoreduction-filtered products; autologous transfusion
Allergic	Urticaria (hives), rarely hypotension or anaphylaxis	Antibodies to plasma proteins	Stop transfusion; give antihistamine (PO or IM), resume transfusion; if severe, do not continue transfusion; give epinephrine and/or steroids	Pretransfusion antihistamine; leukoreduction-filtered products; autologous blood; washed cells as last resort
Hypervolemic	Dyspnea, hypertension, pulmonary edema, cardiac arrhythmia's	Too rapid and/or excessive blood transfusion	Induce diuresis; phlebotomy; support cardiorespiratory system as needed	Avoid rapid or excessive transfusion autologous blood
Noncardiogenic pulmonary edema (Transfusion related acute lung injury)	Dyspnea, pulmonary edema, normal cardiac pressures	Anti-HLA or anti-leukocyte antibodies	Support blood pressure and respiration (may require ventilatory support)	Leukoreduction-filtered products; washed cells; avoid unnecessary transfusion
Bacterial sepsis	Shock, chills, fever	Contaminated blood component	Stop transfusion; support blood pressure; give antibiotics	Care in blood collection, storage and handling
Hypotensive	Sudden and unexplained fall in blood pressure	Combination of ACE inhibitors and leukofilters	Support blood pressure	Avoid use of leukofilters in patients taking ACE inhibitors