LifeStream
GIVE HOPE | GIVE LIFE | GIVE BLOOD

Approximate Risks per Unit of Transfused Allogeneic Blood Products

The following collection of data regarding the current estimated risks of allogeneic transfusions may be of value to your medical practice. Because different investigators report different risk estimates, multiple recent references are included below to further clarify this information. Risks are presented as recommended by Calman for the communication of healthcare risk to the public.

Infectious Risks

Level of Risk	Risk / Unit	Agents
Unknown	Thought to be very low risk	T. Cruzi (Chagas) vCJD
Very Low	Low risk with leukoreduction OR CMV antibody screening	CMV
Very low	1:100,000 to 1:10,000 (higher risk in platelets than RBCs)	Bacterial contamination
Minimal	1:1,000,000 to 1:750,000	Hepatitis B
Negligible	< 1:1,000,000	HIV Hepatitis C Hepatitis A Malaria Babesiosis Syphilis West Nile HTLV I/II

Non-infectious Risks

Level of Risk	Risk / Unit	Agents
Unknown		Immune Modulation
High	>1:100	Alloimmunization
High	Essentially all patients chronically transfused with RBCs	Iron Overload
Moderate	1:1000 to 1:100	Mild Allergic Fever/Chills Circulatory overload Coagulopathy
Low	1:10,000 to 1:1000	Transfusion-related acute lung injury (TRALI) Delayed hemolysis (incompatibility)
Very Low	1:100,000 to 1:10,000	Anaphylactic/anaphylactoid Acute hemolysis (incompatibility)
Minimal	1:1,000,000 to 1:100,000	Post-transfusion purpura
Negligible	<1:1,000,000	Graft-versus-host disease

References:

Busch, et al; Current and Emerging Infectious Risks of Blood Transfusions; JAMA 2003; 289: 959-962
Calman KC; Cancer: science and society and the communication of risk; BMJ 1996; 313: 799-802
Dellinger, et al; Infectious and immunologic consequences of blood transfusion; Critical Care 2004; 8: S18-S23
Dodd RY; Emerging Infection, Transfusion Safety, and Epidemiology; NEJM 2003; 349: 1205-1206
Eder, et al; Noninfectious Complications of Blood Transfusion; Arch Pathol Lab Med 2007; 131: 708-718
Goodnough LT; Risks of Blood Transfusion; Critical Care Medicine 2003; 31: s678-s686
Luban NLC; Transfusion Safety: Where Are We Today?; Ann NY Acad Sci 2005; 1054: 325-341
Stramer SL; Current Risks of Transfusion-Transmitted Agents; Arch Pathol Lab Med 2007; 131: 702-707
Ziemann ,et al; High prevalence of cytomegalovirus DNA in plasma samples of blood donors in connection with seroconversion; Transfusion 2007;47:1972-1983