Transfusions

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Course 1: GI, Blood, and Intro to Medicine

Informed Consent

Components of consent (get consent early enough to allow for alternatives to be considered)

1. Describe blood product to be transfused
2. Inform patient of risks and benefits of transfusion AND alternatives
3. Give patient opportunity to ask questions
4. Document obtained consent
5. Document reason for transfusion in patient's chart

Exceptions to consent

1. Urgent transfusion needed to preserve life or continuing health AND
2. Patient unable to consent and substitute decision maker is not available AND
3. No evidence of prior wishes refusing transfusion for personal or religious reasons

Risks and Benefits

Benefits	Risks
• Maintains O_2 carrying capacity in critical illness • Helps stop bleeding • Facilitates high risk surgical and medical tx • Alleviates sx of anemia, thrombocytopenia, and low lvls of non-cellular blood components	• Circulatory overload • Immunologic rxns • Transmission of blood-born pathogens

- *Must* report all transfusion reactions and transfusion-related errors to hospital's transfusion medicine service (errors to Public Health Agency of Canada; product quality to CBS)
- Getting hepatitis or HIV from blood transfusion more unlikely than death from lightning strike
- Most common adverse reactions: (i) allergy and (ii) febrile non-hemolytic reaction

Transfusion

RBC transfusion

- Maintain Hg >70 g/L during active bleeding
- Anticipate need when Hg drops below 80 g/L
- Patients w/ lvls >100 g/L unlikely to benefit
- Transfusion recommended <70 g/L; 100 g/L in patients w/ unstable angina or acute sx

Platelet transfusion indications

- Thrombocytopenia (platelet count <10 billion/L)
- Decreased function and bleeding
- Contraindications: platelet refractoriness, thrombocytopenia associated w/ increased risk of thrombosis

Frozen plasma transfusion

- Used for restoration of normal coagulation
- Infusion time 30-120 min
- Single dose should restore coagulation to normal (250 mL from single donation, 500 mL from apheresis collection)

Transfusion Reactions

1. Fever
2. Dyspnea (shortness of breath)
3. Cytopenia
4. Transmission of infections
    a. Bacterial sepsis is most common infectious hazard of transfusion

- Clinical presentation: fever, chills, tachycardia, hypotension, dyspnea, nausea and vomiting, disseminated intravascular coagulation
- ANY issue during transfusions: **stop transfusion and check the labels**
- Fun fact: If ppl w/ leukemia have fever during transfusion, it's likely a severe rxn (ppl w/ leukemia have hard time getting fever)

Types discussed in class

1. Acute hemolytic reactions: likely due to clerical error (improper labelling)
2. Febrile non-hemolytic transfusion rxns (FNHTR): due to donor cytokines and recipient antibodies; can reduce risk by leukoreduction
    a. Tx: acetaminophen (Tylenol) 325-650 mg orally
    b. Severe rigors: meperidine (Demerol)
    c. Prophylaxis: acetaminophen and steroids (for pts w/ repeated FNHTR)
3. Dyspnea
    a. *Transfusion-related acute lung injury (TRALI):* hypoxia, bilateral pulmonary edema, no evidence of congestive heart failure, hypotension, fever; onset 1-6 hours post-transfusion (usually w/in 2 hrs; usually resolves in 24-72 hrs); 5-10% mortality w/ tx
    b. *Transfusion-related circulatory overload (TACO):* impaired cardiac function, excessively rapid transfusion; elderly at risk; dyspnea, orthopnea, engorged neck veins, hypertension, tachycardia
4. Allergic rxns: 1-45 min post-transfusion; hives, airway obstruction, acute anxiety, hypotension, nausea, vomiting

5. Graft vs host disease: onset ~10 days; **90% mortality**; dx by biopsy, HLA typing; overwhelming infection, fever, rash, diarrhea, liver dysfunction
6. Post-transfusion purpura: acute thrombocytopenia ~10 days post-transfusion; mechanism unclear; female:male risk ratio 5:1; IVIG 1 g/kg daily for 2 days (expect response after 4 days)