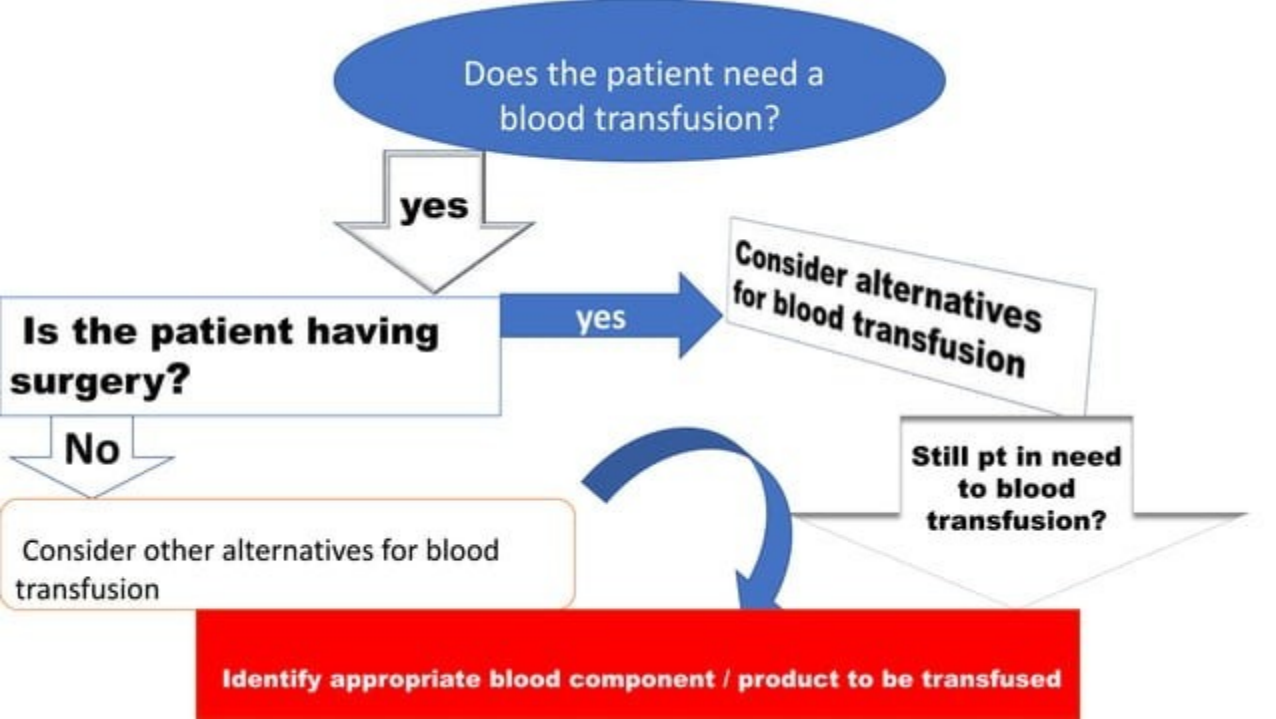
Guidelines For Blood Transfusion

By
Mohamed Kharabish

Supervised by
Dr Anees Sindi


Does the patient need a blood transfusion?
yes
Is the patient having surgery?
yes
Consider alternatives for blood transfusion
No
Still pt in need to blood transfusion?
Consider other alternatives for blood transfusion
Identify appropriate blood component / product to be transfused

- Alternatives to blood transfusion for patients having surgery.

** Erythropoietin.

** Intravenous and oral iron.

** Cell salvage and tranexamic acid.

➢ Erythropoietin

AGAINST giving erythropoietin to reduce the need for blood transfusion in patients having surgery , unless:

the patient has anaemia and meets the ***criteria*** for blood transfusion, but declines it because of religious beliefs or other reasons or
the appropriate blood type is not available because of the patient's red cell antibodies.

➢ Intravenous and oral iron

Offer oral iron before and after surgery to patients with iron-deficiency anaemia.

Consider intravenous iron before or after surgery for patients who:

** have iron-deficiency anaemia and cannot tolerate or absorb oral iron, or are unable to adhere to oral iron treatment.

** are diagnosed with functional iron deficiency.

** are diagnosed with iron-deficiency anaemia, and the interval between the diagnosis of anaemia and surgery is predicted to be too short for oral iron to be effective.

➢Cell salvage and tranexamic acid

**Offer tranexamic acid to adults undergoing surgery who are expected to have at least moderate blood loss (greater than 500 ml).

**Consider tranexamic acid for children undergoing surgery who are expected to have at least moderate blood loss (greater than 10% blood volume).
**Do not routinely use cell salvage without tranexamic acid.
**Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery).

❖ Red blood cells

Thresholds and targets

Use **restrictive** red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do **not**:

**have major haemorrhage or
**have acute coronary syndrome or
**need regular blood transfusions for chronic anaemia.

When using a restrictive red blood cell transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion.

Consider a red blood cell transfusion threshold of 8 g/dl and a haemoglobin
concentration target of 8–10 g/dl after transfusion for patients with acute coronary syndrome.

Consider setting individual thresholds and haemoglobin concentration targets for each patient who needs regular blood transfusions for chronic anaemia.

Doses

Consider ***single-unit red blood cell*** transfusions for adults (or equivalent volumes calculated based on body weight for children or adults with low body weight) who do ***not*** have active bleeding

.

After each single-unit red blood cell transfusion (or equivalent volumes calculated based on body weight for children or adults with low body weight),
clinically reassess and check Hb levels, and give further transfusions if needed.

❖ Platelets

Thresholds and targets

Patients with thrombocytopenia who are bleeding

Offer platelet transfusions to patients with thrombocytopenia who have clinically significant bleeding (World Health Organization [WHO] grade 2) and a platelet count below 30 000/ microlitre .

Use higher platelet thresholds (up to a maximum of 100,000 for patients with thrombocytopenia and either of the following:

**severe bleeding (WHO grades 3 and 4)

**bleeding in critical sites, such as the central nervous system (including eyes).

Patients who are not bleeding or having invasive procedures or surgery:

Offer prophylactic platelet transfusions to patients with a platelet count below 10,000 who are **not** bleeding or having invasive procedures or surgery,
and who do **not** have any of the following conditions:
chronic bone marrow failure
autoimmune thrombocytopenia
heparin-induced thrombocytopenia
thrombotic thrombocytopenic purpura.

Patients who are having invasive procedures or surgery

Consider prophylactic platelet transfusions to raise the platelet count above
50,000 in patients who are having invasive procedures or surgery.

Consider a higher threshold (for example 50–75000) for patients with a high risk of bleeding who are having invasive procedures or surgery, after **taking into account:**

**the specific procedure the patient is having.
**the cause of the thrombocytopenia.
**whether the patient's platelet count is falling any coexisting causes of abnormal haemostasis.

Consider prophylactic platelet transfusions to raise the platelet count above *100,000* in patients having surgery in critical sites, such as the *central nervous system* (including the posterior segment of the eyes).

When prophylactic platelet transfusions are not indicated

AGAINST prophylactic platelet transfusions to patients with any of
the following:

**chronic bone marrow failure
**autoimmune thrombocytopenia
**heparin-induced thrombocytopenia
thrombotic thrombocytopenic purpura.

AGAINST prophylactic platelet transfusions to patients having procedures with a low risk of bleeding, such as adults having central venous cannulation or any patients having bone marrow aspiration and trephine biopsy.

Doses

** Do not routinely transfuse more than a single dose of platelets.

** Only consider giving more than a single dose of platelets in a transfusion for patients with severe thrombocytopenia and bleeding in a critical site, such as the central nervous system (including eyes).

** Reassess the patient's clinical condition and check their platelet count after each platelet transfusion, and give further doses if needed.

❖ Fresh frozen plasma

Thresholds and targets

** Only consider fresh frozen plasma transfusion for patients with clinically significant bleeding but without major haemorrhage if they have abnormal coagulation test results (for example, prothrombin time ratio or activated partial thromboplastin time ratio above 1.5).

** **AGAINST** fresh frozen plasma transfusions to correct abnormal coagulation
in patients who:
are not bleeding (unless they are having invasive procedures or surgery with a risk of clinically significant bleeding)
need reversal of a vitamin K antagonist.

Consider prophylactic fresh frozen plasma transfusions for patients with abnormal coagulation who are having invasive procedures or surgery with a risk of clinically significant bleeding.

Doses

Reassess the patient's clinical condition and repeat the coagulation tests after fresh frozen plasma transfusion to ensure that they are getting an adequate
dose, and give further doses if needed.

❖ Cryoprecipitate

Thresholds and targets

Consider cryoprecipitate transfusions for patients without major haemorrhage
who have:
clinically significant bleeding and ***a fibrinogen level below 1.5 g/litre.***

AGAINST cryoprecipitate transfusions to correct the fibrinogen level in
patients who:
are not bleeding and are not having invasive procedures or surgery with a risk of clinically significant bleeding.

Consider prophylactic cryoprecipitate transfusions for patients with a fibrinogen level below 1.0 g/litre who are having *invasive* procedures or surgery with a risk of clinically significant bleeding.

Doses

Use an adult dose of 2 pools when giving cryoprecipitate transfusions (for children, use 5–10 ml/kg up to a maximum of 2 pools).

** Reassess the patient's clinical condition, repeat the fibrinogen level measurement and give further doses if needed.

❖ Prothrombin complex concentrate

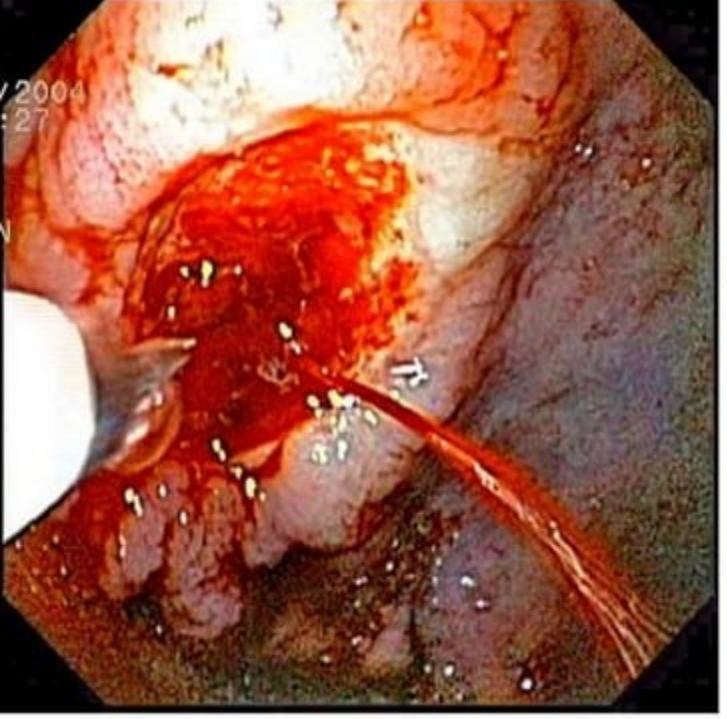
Thresholds and targets

Offer immediate prothrombin complex concentrate transfusions for the emergency **reversal of warfarin** anticoagulation in patients with either:
severe bleeding or head injury with suspected intracerebral haemorrhage.

**For guidance on reversing anticoagulation treatment in people who have a stroke and a primary intracerebral haemorrhage

Consider immediate prothrombin complex concentrate transfusions to reverse warfarin anticoagulation in patients having emergency surgery, depending on the level of anticoagulation and the bleeding risk.

Monitor the international normalised ratio (INR) to confirm that warfarin
anticoagulation has been adequately reversed, and consider further
prothrombin complex concentrate.



Blood tranfusion Guidelines
by *Moh Kharabish*

Blood transfusions for patients with acute upper gastrointestinal bleeding

Transfuse patients with massive bleeding with blood, platelets and clotting factors in line with local protocols for managing massive bleeding.

Base decisions on blood transfusion on the full clinical picture, recognising that over-transfusion may be as damaging as under-transfusion.

Do not offer platelet transfusion to patients who are *not* actively bleeding and are haemodynamically stable.

Offer platelet transfusion to patients who are actively bleeding and have a platelet count of less than 50×10^3/microlitre.

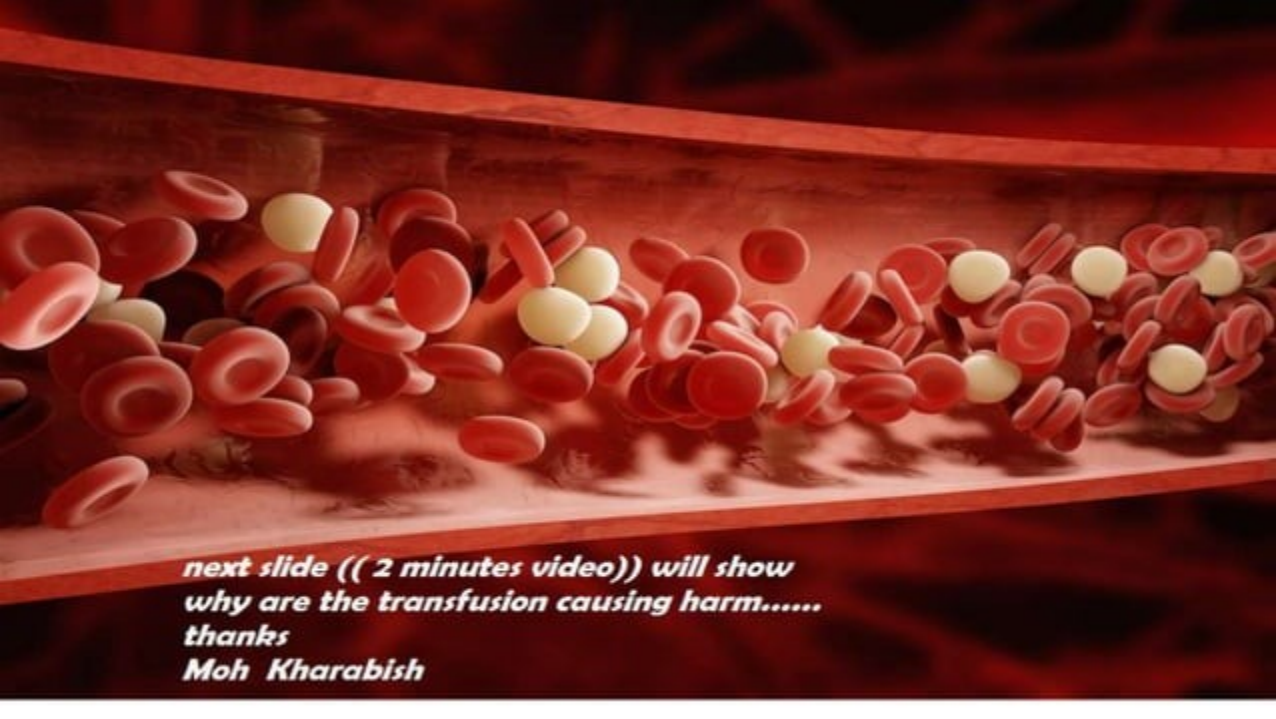
Offer fresh frozen plasma to patients who are actively bleeding and have a prothrombin time (or international normalised ratio) or activated partial thromboplastin time greater than 1.5 times normal.

If a patient's fibrinogen level remains less than 1.5 g/litre despite fresh frozen plasma use, offer cryoprecipitate as well.

Offer prothrombin complex concentrate to patients who are taking warfarin and actively bleeding.

Treat patients who are taking warfarin and whose upper gastrointestinal bleeding has stopped in line with local warfarin protocols.

Do not use recombinant factor VIIa except when all other methods have failed.


next slide ((2 minutes video)) will show
why are the transfusion causing harm.....
thanks
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THANK YOU

