

OVERVIEW OF TRANSFUSION REACTIONS

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CONFLICT OF INTERESTS:

No conflict of interests to declare.

KEY POINTS:

- General overview.
- Types and clinical presentation of transfusion reactions.
- Monitoring and Management.
- Investigations and reporting.
- Patient information leaflets and contact details

BLOOD COMPONENTS

RED BLOOD CELLS



Carry oxygen

WHITE BLOOD CELLS



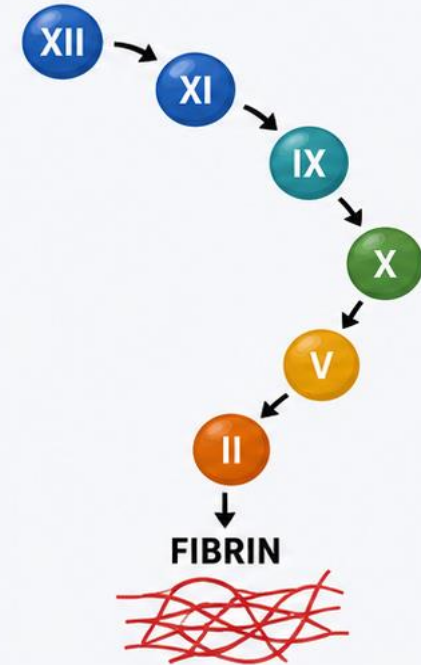
Fight infection

PLATELETS



Help stop bleeding

COAGULATION FACTORS



Form blood clot

TRANSFUSIONS

RED BLOOD CELLS (RBCs)



Restores oxygen carrying capacity

PLATELETS



Helps stop bleeding by forming clots

FFP (FRESH FROZEN PLASMA)



Replaces clotting factors and supports coagulation

- # Transfusion Reactions

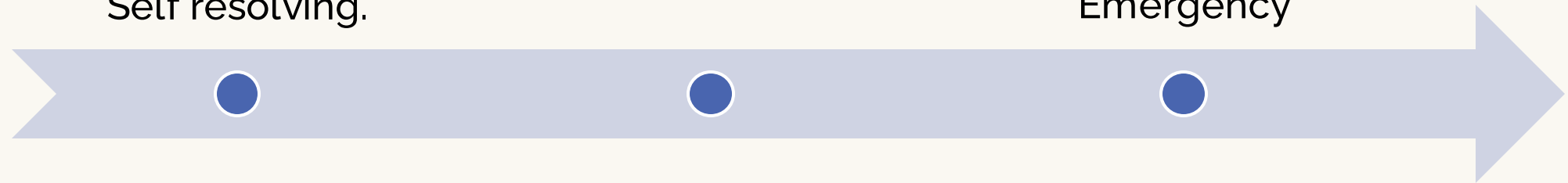
Acute : < 24
Hours.

Delayed:
days-weeks.

SEVERITY:

Mild: eg Fever & rash.
Self resolving.

Severe: eg:
Anaphylaxis.
Emergency



HOW THIS MIGHT PRESENT:

- Fever, feeling hot and cold.
- Rash or urticaria.
- Nausea or vomiting.
- Chest or back pain
- Sense of impending death
- Difficulty breathing or bronchospasm
- Swelling of the face.
- Dark urine.
- Low or high blood pressure.
- Increased Bleeding

HOW COMMON ARE THEY?

- Acute reactions are variably reported as 0.2-10% of transfusions.
- Pruritus / urticaria in 1-3% of transfusions.
- Febrile Non-Haemolytic Transfusion Reactions 1-5%.
- Haemolytic reactions 1 in 12-77,000 .
- Anaphylaxis 1 in 20,000-170,000.
- Some complications are known to be under-reported.

EXAMPLES OF TRANSFUSION REACTIONS?

Acute
haemolytic
transfusion
reaction

Allergic

Ferile non-
haemolytic

Haemolytic

Hyper
haemolysis

Hypotensive

TACO

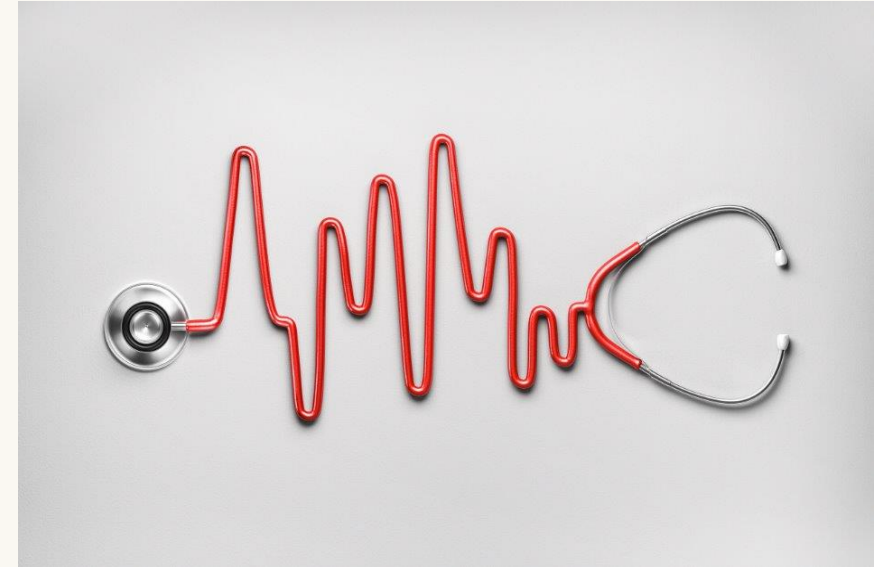
TaGVHD

TRALI

PTP

MONITORING WHILE RECEIVING TRANSFUSION

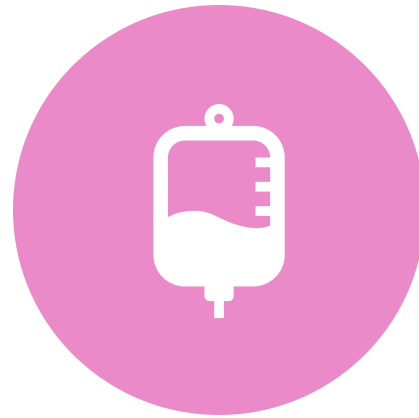
- Transfusion occurs in different areas: eg day units, inpatient wards, Accident and emergency...etc.
- Well equipped areas.
- Fully trained staff on administration of blood transfusion and management of complications.
- Regular monitoring
- Minimum required :- Checking of vital signs as blood pressure , temperature , pulse , oxygen saturation before , during and after transfusion.



RECOGNITION:



REGULAR MONITORING



EARLY IDENTIFICATION OF
TRANSFUSION REACTIONS.



RAPID CLINICAL ASSESSMENT
AND SENDING INVESTIGATIONS..

Clinical Symptoms & Signs: fever, chills, rigors, tachycardia, hyper- or hypotension, collapse, flushing, urticaria, respiratory distress, nausea, malaise, pain (bone, muscle, chest, abdominal)

STOP TRANSFUSION (UNLESS HAEMORRHAGE): ARE THE SYMPTOMS & SIGNS LIFE-THREATENING?

YES – SEVERE reaction

**DISCONTINUE TRANSFUSION
EMERGENCY CALL
START RESUCITATION
MONITOR VITAL SIGNS, O₂ SATURATION, URINE OUTPUT**

anaphylaxis/
severe allergy

Resus UK Guidance on Anaphylaxis

non-anaphylactic
respiratory compromise

suspected bacterial
contamination of unit

suspected acute haemolytic
transfusion reaction

Clinical flow
chart 4

Retain blood unit(s), report to transfusion laboratory, diagnostic investigations (table 1), report to SHOT/MHRA

NO

MODERATE

≥39°C (or ≥ 2°C rise)

Symptoms/ signs other than pruritus/rash

MILD

<39°C (or <2°C rise)

With or without rash/pruritus

MEDICAL REVIEW

INFORM MEDICAL STAFF

Take into account underlying clinical condition

Consider symptomatic treatment (see text)
If symptoms settle, **resume transfusion**
More frequent monitoring of vital signs

Continue transfusion
Consider symptomatic treatment (see text)
More frequent monitoring of vital signs

Worsening/ persistent symptoms out of keeping with underlying condition – manage as for Severe reaction

Worsening – manage as for Moderate/Severe reaction

If symptoms and signs are determined **not transfusion-related**, or in the case of a **mild reaction**: document in medical notes. Not SHOT/MHRA reportable

For moderate and severe reactions contact Blood Bank

REPORTING:

- According to severity of reaction: Mild, moderate or severe.
- Clinical team assessment and management.
- Document in patients' records.
- Contact the lab and local transfusion team.
- Initial investigation by transfusion teams.
- Certain reactions- further reporting to SABRE/SHOT.

AFTER DISCHARGE HOME:



Request contact numbers



Monitor how you are feeling.



If you are feeling unwell after transfusion: for example, with fatigue, fever, flank pain, dark urine or yellowish discolouration of skin then phone the contact numbers.



Might not always require hospital admission or could be unrelated to transfusion.

CONTACTING THE HOSPITAL:

Symptoms – high temperature, breathing problems, blood in urine, itchy skin rash (hives, urticaria), jaundice



Phone Contact number



Initial assessment and advice

DISCHARGE ADVICE & INFORMATION


NHS
The Leeds
Teaching Hospitals
NHS Trust


Advice for patients who have received a blood transfusion


You recently received a blood transfusion and there is a very small risk of developing a delayed transfusion reaction after you leave hospital.

These are usually mild in nature and cause very few problems but it is important to report any unusual or unexpected symptoms to your doctor or nurse.

Most delayed reactions occur within 24 hours of the transfusion but can, very occasionally, develop up to 14 days later.



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Pathology



If you unexpectedly experience any of the following symptoms:

- A high temperature (especially above 38.5°C)
- Shivering or cold chills (rigors)
- Breathing problems
- Blood in your urine
- Itchy skin rash or nettle rash (hives / urticaria)
- Jaundice (yellow colour of the white of your eyes)
- Passing much less, or very dark, urine

Please ring the following number for advice (Mon - Fri, 9am - 6pm):

Contact Tel. No:

At other times including weekends and Bank Holidays or in the rare event of an emergency, contact either of the in-patient wards J88 or J89 on: (0113) 206 9188 or (0113) 206 9189 or J94 Young Adults Unit: (0113) 206 9194.

It is important that possible transfusion reactions are reported so they can be treated appropriately and quickly if necessary.

If you would like to have further information or advice about this, or other aspects of blood transfusion, please feel free to discuss this with your doctor or nurse.

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Example of post transfusion leaflet

TAKE HOME MESSAGES:

- Transfusion reactions can present with a variety of symptoms.
- They range from mild to very severe.
- Key is in close monitoring, early recognition and management.
- Request contact numbers and clear information on when and how to report reactions.

THANK YOU!

Any Questions?