What to do when platelets aren’t working?
Platelet Refractoriness

“...the repeated failure to obtain a satisfactory response to platelet transfusion....”

“Control of bleeding is the most relevant marker...”
Key Things

• Identifying refractoriness – in a timely manner
• Timely testing – increments and typing
• Keep an eye on patient counts
What will the Patient Experience?

• Platelet count rises by less than $10 \times 10^9 / \text{L}$ – **repeatedly** (at least two occasions*)

• Continued bleeding events

• Increase in platelet transfusions
What are the Causes?

Immunological – Patient immune mediated

- Antibodies to antigens on platelets (HLA, HPA, ABO)
- Platelet autoantibodies
- Drug – dependent antibodies
- Immune Complexes
What are the Causes?

Non-immunological causes

- Infection
- Antibiotics/antifungals – (amphotericin B and fluoroquinolones)
- Splenomegaly/hypersplenism
- Disseminated Intravascular Coagulation
- Platelet loss due to bleeding
Things to Try…

• ABO matched – same group as the patient

• Platelets at the time of the procedure

• HLA

• HPA
What do I need to check for?

Platelet count rises by less than $10 \times 10^9/L$ – **repeatedly** (at least two occasions*)

- Check platelet counts between 10 minutes to 1 hour post infusion
- What kind of platelets did the patient receive?
Testing

• HLA - Human Leucocyte Antigens
  – Where possible – exclude immunological causes
  – Use the purple 3A form

• HPA – Human Platelet Antigens
  – Quite rare
  – Use the orange 3D form
HLA/HPA Not Working?

- Re-test patients for HLA and HPA at least monthly – frequency of platelet tx and response
- Start from the top – non-immunological, immunological
- Consider treating symptoms of bleeding instead of numbers
- Use platelets intraoperatively
Questions