

## Statement of Use

It is acceptable to use a reduced-dose apheresis platelet component (specification  $\geq 150 \times 10^9/\text{unit}$ ) instead of a standard-dose platelet component (specification  $\geq 240 \times 10^9/\text{unit}$ ) in a severe platelet shortage for use in older children ( $\geq 1$  year) and adults requiring prophylactic platelet transfusions. Standard-dose platelets should be used for patients with bleeding.

Neonatal platelet components will be unaffected.

Pooled platelet components will be unaffected.

## When would it be implemented?

This component will only be used in a situation where there is a significant national platelet shortage that is affecting patient care (a red alert level for platelet shortage has been called or without this measure being implemented a red alert level for platelet shortage would be called within the next 7 days).

## Rationale for use

The use of a reduced-dose apheresis platelet component will [increase the platelet supply available](#). Its use will ensure we can optimise the supply of available platelets for as many patients as possible. This will be a temporary measure during a severe shortage to either prevent a red alert platelet shortage being called (predicted to enter red alert shortage within 7 days) or to reduce the duration of a red alert platelet shortage. It will increase the platelet supply by approximately 18%.

The platelet content of reduced-dose apheresis platelet components (specification  $\geq 150 \times 10^9/\text{unit}$ ) is comparable to the low dose used for the prevention of bleeding within the “Optimal **PL**atelet **DO**se Strategy for the Management of Thrombocytopenia” [PLADO trial](#).<sup>\*</sup> It is therefore considered safe to use a single unit of a lower dose platelet component to prevent bleeding. However, it may be necessary to increase the frequency of transfusions required, in line with thresholds in platelet shortage guidelines ([Amber](#) and [Red](#)).

## Indications for use

### Prophylaxis

Use reduced-dose apheresis platelet components preferentially for patients who are not bleeding and are given platelets as prophylaxis as per platelet shortage guidelines ([Amber](#) and [Red](#)) for children and adults – aligned with the British Society for Haematology (BSH) guidelines.

Use ABO-matched platelets if possible (this will maximise the platelet count increment).

After administration of reduced-dose apheresis platelets for prophylaxis **do not** check the platelet count until the next day unless there is a clinical indication (e.g. bleeding). There is no need to perform any additional assessment of platelet counts over and above normal routine practice.

**Do not use reduced-dose apheresis platelets for patients who should not be receiving platelets in a shortage situation, according to the shortage guidelines** ([Amber](#) and [Red](#)).

### Prior to procedures

**Only urgent or emergency procedures should be being performed when reduced-dose apheresis components are in use.**

Do not use these components if it is a procedure with a low risk of bleeding – proceed without any platelet support and give platelets if bleeding occurs.

If it is an urgent or emergency procedure that has to be performed and there are no alternatives to platelet transfusion then use the platelet count thresholds as per the guidelines ([Amber](#) and [Red](#)). (3 units of reduced-dose platelets are equivalent to 2 units of standard-dose platelets). Use the minimum number of platelet units to reach the required increment.

## ***Bleeding***

If patient is bleeding use standard-dose platelets – pooled platelets will always be standard dose platelets if available.

If pooled or apheresis standard-dose platelets are unavailable use more reduced dose platelets (3 units of reduced-dose apheresis platelets are equivalent to 2 units of standard-dose platelets).

## **Additional Information**

### ***Irradiation***

The reduced dose apheresis platelet component is suitable for irradiation and may be used for patients who require irradiated components.

### ***Human Leucocyte Antigen (HLA) or Human Platelet Antigen (HPA)-selected platelet components***

There will be very limited access to this component during a shortage situation. This component may not be available, especially for patients that have more complex requirements. All requests will need to be approved by a consultant haematologist at the requesting NHS Trust. If HLA or HPA-selected components are not available despite an appropriate request, please use ABO-matched random-donor platelet components instead. If HLA or HPA-selected platelet components are available, they may only be available as a reduced-dose apheresis component.

### ***Washed platelet components***

Where stock allows, washed platelets requests will be fulfilled with a standard-dose apheresis component.

### ***Platelet count increment*** (at 16 to 24 hours post-transfusion)

The platelet count increment will be lower with reduced-dose apheresis components. The median increment for low-dose platelet components within the PLADO trial was  $10 \times 10^9/L$  (Interquartile range 5 to 17). This may mean patients require more frequent platelet transfusions. Within the PLADO trial, even with this increase in frequency of transfusion the total amount of platelets required was lower (82% of the total platelet dose transfused in the medium dose group).

### ***Platelet content with reduced-dose apheresis components compared to the PLADO trial\****

The [PLADO trial](#) used body surface area (BSA) to calculate the dose given to each patient within the trial (low dose  $1.1 \times 10^{11}$  platelets/ $m^2 \pm 25\%$ ). Using an estimated [BSA of 1.79](#) for adults in the UK receiving platelet transfusions, the dose received would be between  $148 \times 10^9/unit$  and  $246 \times 10^9/unit$ . If we compare the predicted dose of reduced-dose apheresis platelets (mean  $171 \times 10^9$  per unit  $\pm 20.5$  (SD)) with the predicted range of doses in PLADO

---

adjusted for UK BSA, 87% of reduced-dose apheresis units would meet the PLADO specification.

## ***Paediatric transfusions***

If a child ( $\geq 1$  year) requires a prophylactic platelet transfusion, and it is in accordance with the BSH guidelines ([Amber](#) and [Red](#)), please use a maximum of a single reduced-dose platelet unit. Do not transfuse more than a single platelet component for prophylaxis. If available, use standard-dose platelets for bleeding or prior to urgent or emergency surgery.

Platelet transfusion dose for neonates and infants ( $< 1$  year) will be unaffected. Give random donor platelets if HPA-1a, -5b negative platelets for suspected neonatal alloimmune thrombocytopenia (NAIT) are unavailable.