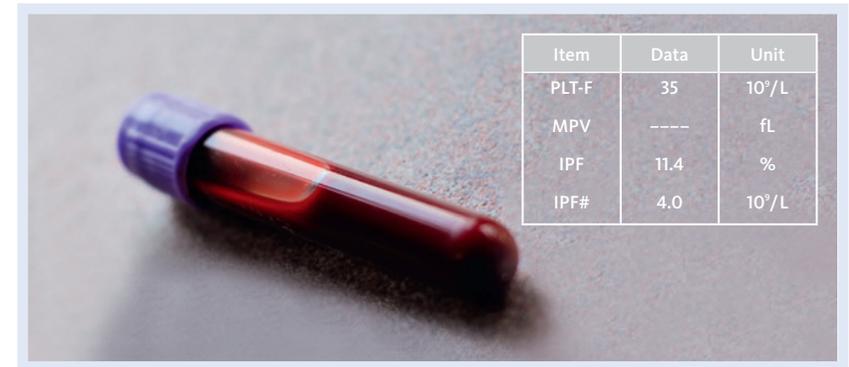


## Managing immune thrombocytopenia (ITP) treatment effectively

When determining a differential diagnosis for ITP, the immature platelet fraction (the percentage of immature platelets within the total platelet count), which can be determined alongside a CBC, has been recognised for some time now as a good indicator. However, when *monitoring* ITP or predicting a response to its treatment, the total platelet count and/or immature platelet fraction do not provide all the necessary information. This is because thrombocytopenia in ITP is caused by both impaired platelet production and accelerated platelet destruction. Fortunately, another parameter – the absolute count of immature platelets (IPF#) – can provide valuable information about a patient’s response to treatment, notably which mechanism is the one proving effective, as well as assessing the bleeding risk.



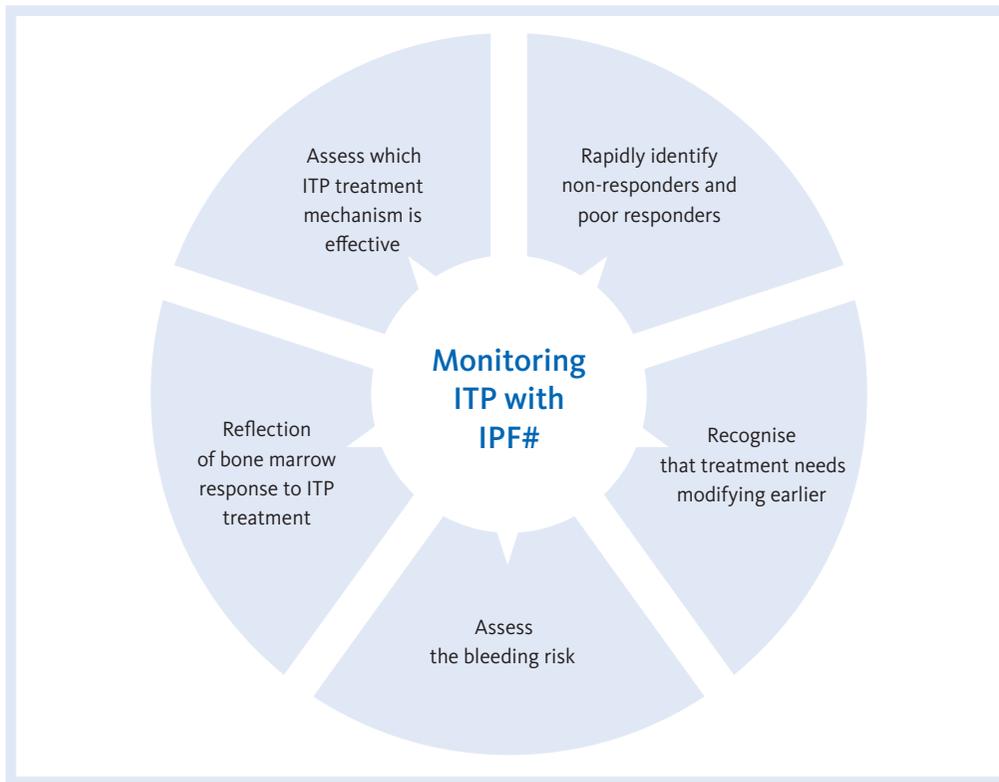
A 43-year-old man with a diagnosis of chronic immune thrombocytopenia (ITP) and bleeding episodes is treated with intravenous immunoglobulins (IVIg). The complete blood count before medical intervention reveals a platelet count of  $35 \times 10^9/L$  and an immature platelet count (IPF#) of  $4.0 \times 10^9/L$ . The patient is infused with 1 g/kg IVIg and the PLT count increases to  $157 \times 10^9/L$  one week after the intervention, suggesting successful treatment. However, IPF# has not increased and is only  $3.5 \times 10^9/L$ , indicating that the increased PLT count is mediated by lowering the antibody-mediated platelet removal from the peripheral blood. The information about the absolute immature platelet count can provide earlier insights about whether the ITP treatment mechanism is effective or not. For this particular patient, the low IPF# indicates ongoing impairment of bone marrow platelet production and adjusted therapy could result in long-term normalization of PLT counts.

### What is the immature platelet count, or IPF#?

- The absolute count of immature platelets, determined from a patient’s peripheral blood sample and independently from the total platelet count.
- Immature or reticulated platelets are newly released from bone marrow, containing a high amount of RNA that is measured by a specific fluorescence method.
- The platelet analogue of reticulocytes in red cell populations.
- Compared to the immature platelet fraction (IPF), the immature platelet count (IPF#) is barely affected by platelet transfusions.\*

IMMATURE PLATELETS  
CLINICAL USE

Know more.  
Decide with confidence.  
Act faster.



*The immature platelet count (IPF#) is a novel haematological diagnostic parameter that provides valuable information for effectively managing immune thrombocytopenia (ITP) treatment.*

#### Monitoring ITP with IPF#

- The haematological parameter 'immature platelet count' (IPF#) reflects real-time effective bone marrow response to ITP treatment.\*
- The immature platelet count assesses the mechanism of ITP treatment, i.e. it answers whether an observed increase in platelet count is due to increased platelet production or the inhibition of antibody-mediated platelet destruction.\*
  - A high IPF# indicates an effective increase in bone marrow platelet production in response to treatment.
  - A low IPF# indicates ongoing impairment of bone marrow platelet production, so any platelet count increase would be due exclusively to a deceleration of antibody-mediated platelet destruction.
- Failure to increase the immature platelet count can identify non-responders and poor responders to thrombopoietic agents early on.\*
- Information about the immature platelet count improves treatment outcome because the need for treatment modification can be recognised earlier.
- Due to the higher reactivity and haemostatic potential of immature platelets, an increased immature platelet count is associated with a lower bleeding risk in severely thrombocytopenic patients.\*

#### Your benefits

- The new diagnostic parameter IPF# is readily available from a routine laboratory blood test and can be made part of the complete blood count.
- Effective and rapid risk assessment, response prediction and monitoring of ITP treatment accelerate and improve treatment outcomes.
- Managing ITP treatment in this way improves patient care and reduces costs.

\* Benefit from more background information in our freely accessible white papers: [www.sysmex-europe.com/whitepapers](http://www.sysmex-europe.com/whitepapers)