

Press release – 09 January 2025

New platelet counting tech from Mindray to help labs prevent diagnosis errors

Risks that can lead to errors in cancer diagnoses could be reduced, as just one benefit of high precision platelet counting technology, launched by international health tech company Mindray.

Now available across Europe for the first time, the technology is supported by AI that has been tested on hundreds of thousands of samples. Leading haematology specialists have welcomed the technology, that is designed to help laboratories carry out more accurate and efficient platelet counting – a key process in the detection of many serious illnesses.

Accurate platelet count testing is one of the major challenges facing laboratories. Inaccurate counting can lead to misdiagnosis or missed diagnosis, and delayed treatment of a range of potentially deadly conditions – including acute massive haemorrhage, coagulation problems, infections, autoimmune diseases, and cancers.

A false low platelet count, known as pseudothrombocytopenia, can occur during platelet aggregation or due to improper sample handling. It may also arise in samples with large or giant platelets that conventional methods cannot identify. As a result, test results may show low platelet levels while the actual count remains normal.

Such misdiagnoses can lead to unnecessary anxiety, additional diagnostic tests, and potentially inappropriate medications or transfusions. Surgical delays may also occur if procedures are postponed based on inaccurate results.

Conversely, pseudothrombocytosis, or a false elevated platelet count, typically happens when red blood cell fragments or microcytes are miscounted as platelets. This can cause low platelet samples to be reported as normal or high, and normal counts to be falsely identified as elevated.

If low platelet counts are reported as normal or high, risks of bleeding in the patient may not be detected in time, delaying treatment and potentially posing life-threatening risks. Normal values being reported as high may lead to incorrect diagnoses or inappropriate treatments.

Mindray has now launched technology into European markets, designed to help laboratories respond to these challenges and overcome accuracy risks, with significant efficiencies also expected for laboratories facing rising demands.

Through the CAL 8000 Cellular Analysis Line, the company has combined platelet technologies to support high quality reporting. The technology automates platelet analysis, and also means that aggregated samples could take laboratory professionals as little as 30 minutes to report – rather than a typical two hours.

Huan Qi, Director of Clinical Research, Medical Affairs, Mindray, said: “Abnormal platelet counts are sometimes a precursor to life threatening illnesses, including cancers such as leukaemia or lymphoma. Inaccurate platelet counting can lead to significant and potentially deadly consequences.”

“Through innovative technology, we are now equipping laboratories with modern tools to enable efficient, high-quality, and cost-effective blood cell analysis. Through a combination of innovative tools, automation, and sophisticated algorithms, laboratories have the potential to enable 99.9% of samples to be reported with accurate platelet count results, without the need for manual intervention.”

The cellular analysis line includes PLT-H, a new platelet detection technology that uses high-precision optics and innovative algorithms to exclude interference and improve count accuracy without additional cost.

Self-de-aggregation technology, which involves heating, stirring and de-aggregation, is also able to disintegrate most ethylenediaminetetraacetic acid induced platelet clumping.

Samples flagged as abnormal by Mindray's cost-effective technologies, can also be analysed using PLT-O. This fluorescent staining method for platelet detection is able to provide laboratories with accurate low-value results. When optical methods detect low platelet samples, laboratories are able to use the PLT-O instrument to automatically increase particle counting eight times without the need for re-sampling. This can greatly improve the detection accuracy of low platelet counts.

Mindray's PLT-M technology, which is integrated into its digital morphology analyser, can be used to automatically estimate platelet counts through an advanced morphological imaging method.

Technology available in the line also includes high-definition, high-speed scanning to identify platelet aggregation samples by detecting platelets in the body, edge and tail of blood smears. Called PLT-Pro, this technology is able to scan slides in less than a minute – 30 times more efficient than traditional methods.

Research into effectiveness has been highly positive, with findings on platelet counting technology presented by specialists from France and Poland at the International Society for Laboratory Haematology's 2024 International Symposium on Technical Innovations in Laboratory Haematology.

Professor Marie Christine Béné from the Faculty of Medicine at Nantes University, said: "The latest developments in platelet counting technology could help a lot of people in treating haematology disorders. We are getting more and more help from machines able to count cells with minimal supervision, alerting us and providing us with more time to spend looking after patients.

"Accurate evidence behind low platelet count could allow patients to have neurosurgery, or inform clinicians if patients don't need a blood transfusion.

"Mindray has evidently listened to customers in the development of its latest technologies. Its disaggregation protocol and optical staining of platelets will help with productivity – reducing the time medical scientists need to spend examining low platelet counts to identify platelet clumping. Removing that process will be good for everyone – scientists, clinicians and patients."

ENDS

Notes to editors

About Mindray

Mindray is a leading developer, manufacturer, and supplier of medical device solutions and technologies used in healthcare facilities around the globe. The company empowers healthcare professionals through innovative, high-value solutions that help create the next generation of life-saving tools of patient monitoring and life support, in-vitro diagnostics, and medical imaging. For more information, please visit <http://www.mindray.com>.