

microangiopathic thrombopathies, and leukemias and lymphomas. High platelet counts should be confirmed microscopically with a blood smear; falsely high counts may be the result of other particles (red-cell fragments, fragments of leukemic cells, or fungi) being counted as platelets^(8,9,10).

Examination of the blood smear is also important in patients with thrombocytosis to look for evidence of a myeloproliferative disorder, such as giant platelets, or an increase in the basophil count; the latter is not reliably detected by automated counters. A sudden, unexpected improvement in the platelet count also should be confirmed by blood-smear examination, since such an improvement may be factitious⁽⁹⁾.

Until recently, the only reference method for platelet counting was the manual phase contrast microscope chamber counts (11) in which platelets are counted manually with a haemocytometer, such as Neubauer chamber. This is laborious, time-consuming and above all, an imprecise technique. The interoperator coefficient variant of this method can be up to 25%. However, it is still most widely used reference method⁽¹²⁾.

Even if the manual platelet numeration, using a counting chamber, remains the technique of reference, it consumes more time and, to be more precise, requires a phase-contrast microscope, which is not always available in routine laboratories⁽¹³⁾. That is why the proposed method is better, since it is faster, taking only five minutes on average per patient, while demonstrating good precision.

Some authors recommend calculating the average number of platelets counted in 10 immersion fields; the adequate values are included between 8 to 20 platelets per field^(14,15). The average number of platelets is then multiplied by a factor of 20,000

for wedge preparations or 15,000 for monolayer preparations in order to obtain and estimate the platelet count, but this method is approximative and does not give the real number of platelets.

Comparing automated and manual, using red cell:platelet ratio method, platelets counting techniques showed that there was no significant difference ($P < 0.05$) between the mean, median, and range of platelet counts using these two methods.

The ICC was calculated in order to identify the reliability of the manual technique in comparison to the automated method⁽¹⁶⁾. The ICC value is measured on a scale of 0 to 1, and good reliability was generally assumed as an $ICC > 0.75$ ⁽¹⁷⁾. In this study, the ICC was equal to 0.988, which is widely greater than this limit. In addition, 93% of the differences between automated and manual counting methods were within the agreement limits ($\text{mean} \pm 2SD$).

Red blood cell: platelet ratio method requires only an accurate RBC count performed on a calibrated hematology analyzer to calculate platelet count. This method is precise, simple, and consumes less time than using a counting chamber, and therefore, potentially should supersede ordinary manual counting.

References

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