

ASSESSING PLATELET ALARM ACCURACY: SENSITIVITY AND SPECIFICITY IN THE SYSMEX XN 1000

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INTRODUCTION

- The diagnosis and evaluation of blood count abnormalities require high-performance automated hematology analyzers. Thorough evaluation of **platelet abnormalities** is particularly crucial to ensure optimal clinical management.
- This study aims to evaluate the **sensitivity** and **specificity** of platelet alarms on the Sysmex XN 1000

MATERIALS AND METHODS

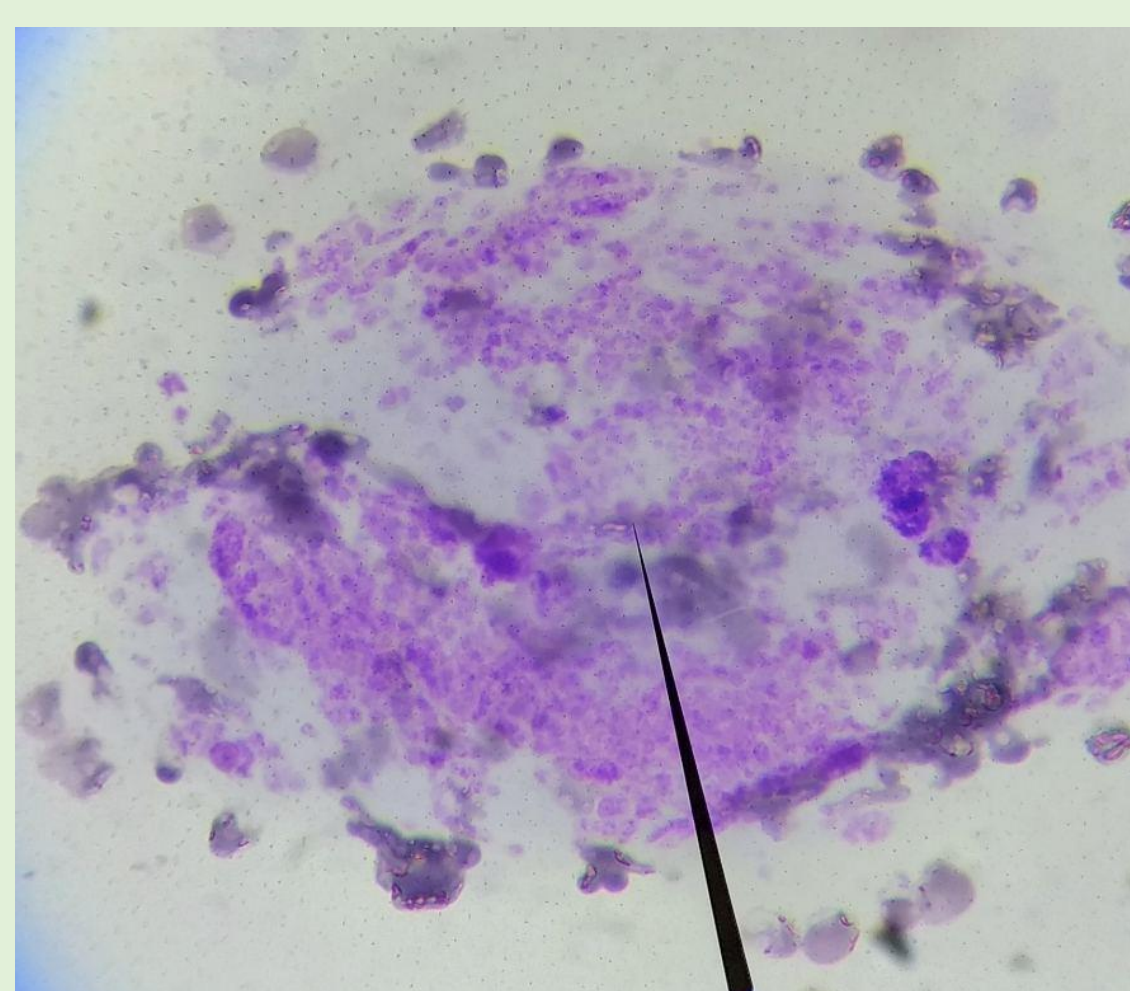
- **Study:** prospective comparative
- **Period:** April 2024
- **Analyzer:** Sysmex XN 1000 hematology analyzer
 - A total of 100 blood samples on EDTA tubes
 - Alarms for **platelet clumps** and **giant platelets** were evaluated against manual microscopy.
 - The predictive accuracy of each alarm was determined by calculating the **sensitivity**, **specificity**, **Positive predictive value (PPV)**, and **Negative predictive value (NPV)**.
 - Statistical study was performed with SPSS 20 software

RESULTS

- Our study included **100 samples**
- The patient cohort had a **mean age** of 40 years (extremes: 1-89 years)
- **sex ratio:** 0.64
- **Mean platelet count:** $85,72 \cdot 10^3 / \mu\text{L}$ (extremes: 1- $129 \cdot 10^3 / \mu\text{L}$)

Comparative table of predictive accuracy of platelet alarms

Alarms	Platelet aggregates	Giant platelets
Sensitivity	54%	20%
Specificity	85%	73%
PPV	0,54	0,038
NPV	0,85	0,94



platelet aggregate



Giant platelet

⇒ The sysmex XN 1000 analyzer shows a **moderate sensitivity** (54%) and a **high specificity** (85%) for detecting **platelet aggregates**

⇒ As for **giant platelets alarm** the hematology analyzer presents a **low sensitivity** (20%) and a **moderate specificity** (73%) suggesting the need for manual microscopy to further confirm these findings

CONCLUSION

Despite the significant strides in hematology analyzers, and the enhanced properties in detection of blood count abnormalities, particularly platelet abnormalities, manual verification by microscopy remains essential to confirm results and ensure accurate clinical management of patients.