Dear Editor,

thank you for the opportunity to comment on the misclassification of eosinophils on Sysmex XN-Series as reported by Shen et al. In the following we would like to give more insight into the problem from technical perspective and explain the solution Sysmex provides.

Sysmex’s automated haematology analysers use the fluorescence flowcytometry (FFC) technology. A two-step, fully automated sample preparation including haemolysis and fluorescent labelling changes the physicochemical properties of the blood cells and thus allows the differentiation of the leukocytes according to shape and internal complexity. The adaptive cluster analysis system of the XN-Series classifies cell types based on the FFC-derived signals. The resulting information is processed by the analyser’s information processing unit (IPU).

Sysmex regularly offers updated software versions for XN-Series customers to constantly improve the analyser performance or to resolve reported issues. In the past, rare cases of misclassification of eosinophils and neutrophils were reported to Sysmex. Misclassification of eosinophils and neutrophils can be specific to certain software versions of the analyser’s IPU but factors such as activation or degranulation of the eosinophils can also contribute. The latest software versions released in 2018 include several improvements towards neutrophil and eosinophil classification, and we therefore recommend that customers always use the latest software version available. Nevertheless, Sysmex appreciates the exchange about unusual findings to ensure reliable results and to further improve the analyser software.

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