

Know more about your patient's immune response status

Patients with inflammatory diseases are common on many hospital wards whereby it is important to quickly differentiate between the various possible conditions. One of the prime objectives is to distinguish between inflammations caused by infections and those that are not. One also has to determine the pathogen responsible and the status of the immune response in case of infection. Haematological inflammation parameters, part of the blood count available on Sysmex XN analysers, provide early information about the inflammatory reaction of patients' immune systems and so support the diagnosis and monitoring of these conditions.



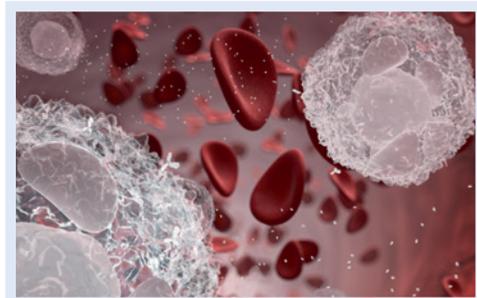
A 23-year old man with an intermittent fever visited his physician three days after the initial onset of fever. The man reported the following symptoms: shortness of breath, productive cough, abdominal pain, diarrhoea, night sweats and malaise. Considering the man's symptoms, a complete blood count with WBC differential analysis was performed. The results of the Sysmex XN-Series analyser revealed leucopenia with a relative increase in neutrophils. The neutrophils showed an increased activation and there were slightly increased antibody-synthesizing lymphocytes; the results indicated an early response of the innate immune system to an active infection by intracellularly located bacteria.

Sysmex offers a practical solution

A combination of novel diagnostic inflammation parameters are readily available from a routine laboratory test, together with the complete blood count. The parameters quantify and characterise the activation status of white blood cell subpopulations, such as:

- Immature granulocytes (IG)
- Activated neutrophils (NEUT-RI, NEUT-GI)
- Activated lymphocytes (RE-LYMP, AS-LYMP)

These diagnostic inflammation parameters provide additional information about the activation of the immune response and help clinicians monitor inflammatory conditions in details. More information on the individual parameters is found overleaf.



INFECTION/
INFLAMMATION

Know more.
Decide with confidence.
Act faster.

The diagnostic inflammation parameters support differentiation between the different types of immune response, such as early innate, adaptive cell-mediated and humoral immune response. This information may help identify the stage of an infection. Furthermore they can support the management of inflammatory diseases and differentiation between inflammation and infections, as well as different pathogenic causes of infection (e.g. bacterial, viral).

Cell populations and / or their characteristics	Description	Immunological interpretation	Parameter	Unit
Total reactive lymphocytes	This includes activated B and T lymphocytes recognised by an increased fluorescence intensity compared to that of common lymphocytes.	Increased in innate and adaptive cell-mediated immune response	RE-LYMP#	Cells/L
			RE-LYMP% (as a percentage of all WBC)	%
Antibody-synthesizing lymphocytes*	These are exclusively activated B lymphocytes recognised by the markedly increased fluorescence intensity compared to that of common lymphocytes.	Increased in innate and adaptive humoral immune response	AS-LYMP#	Cells/L
			AS-LYMP% (as a percentage of all WBC)	%
Granularity of neutrophils	A measure of the cytoplasmic granularity of the neutrophil population, representing their response to inflammatory processes.	Increased in early innate immune response	NEUT-GI: Neutrophil Granularity Intensity	Scatter Intensity (SI)
Reactivity of neutrophils	A measure of the fluorescence intensity of the neutrophil population, representing their metabolic activity.	Increased in early innate immune response	NEUT-RI: Neutrophil Reactivity Intensity	Fluorescence Intensity (FI)
Immature granulocytes	The total of metamyelocytes, myelocytes and promyelocytes are counted as a single population, separately from the common neutrophils.	Indicates the severity of the early innate immune response	IG#	Cells/L
			IG% (as a percentage of all WBC)	%

* When antibody-synthesizing lymphocytes (AS-LYMP) are present, they are also included in the total reactive lymphocytes (RE-LYMP).

Your benefits

- The parameters in the table are available from a routine blood laboratory test together with a complete blood count and quickly provide an initial indication of the patient's immune response status.
- Sysmex's haematological inflammation parameters support an early diagnosis so that targeted treatment can be started, changed or modified faster.
- Monitoring patients with inflammatory diseases and the success of their therapy helps to avoid the overuse of antibiotics.

Benefit from more background information in our freely accessible white papers:

www.sysmex-europe.com/whitepapers