CBC-O CONCEPT

Know more.
Decide with confidence.
Act faster.

Turning a daily challenge into smooth routine: CBC-O helps you to identify the cause of an increased MCHC

Every day, laboratories deal with suspicious results that are challenging to interpret and increase the turnaround time due to necessary corrective actions. Interferences like cold agglutinins or lipaemia can cause erroneous red cell indices such as an increased MCHC. To decrease the manual efforts in resolving the underlying reason, Sysmex has developed a standardised way of handling and investigating those samples. The CBC-O concept indicates the origin of an increased MCHC and offers you the proper corrective actions, using the RET channel technology. With CBC-O you can report optimised CBC results for every sample – faster and with confidence.

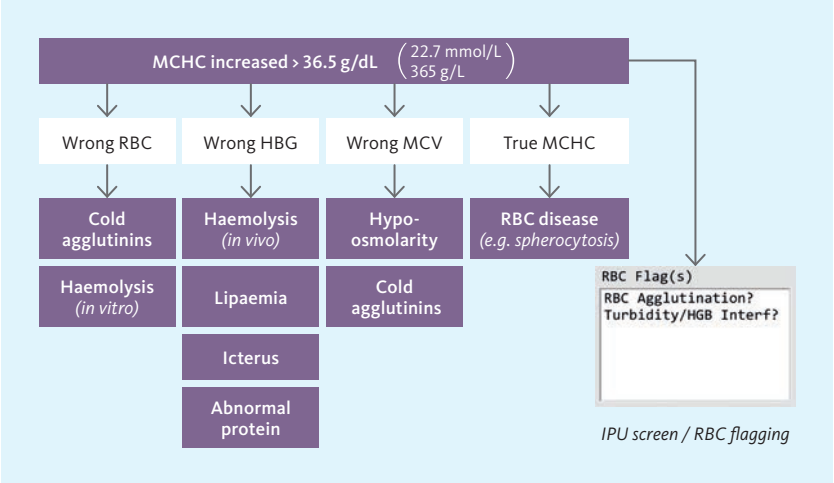

Fig. 1 *Some of the most common interferences that cause an increased MCHC and generate the associated flags on the haematology analyser.*

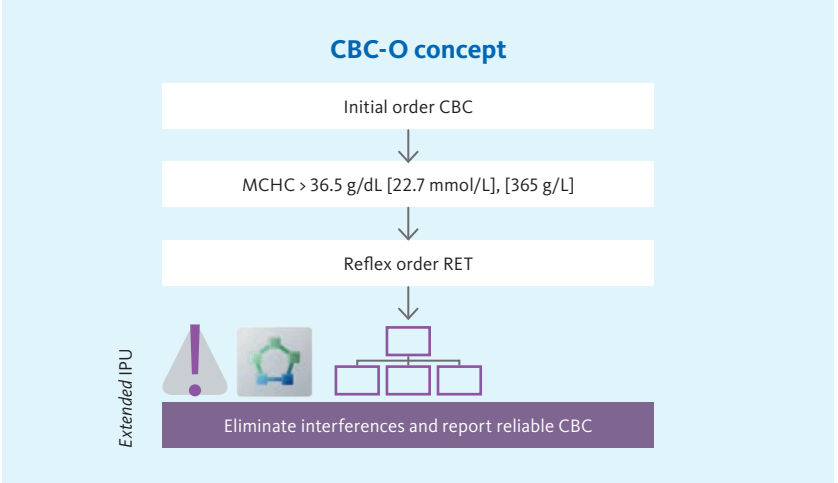

Fig. 2 *Optional CBC-O workflow with Extended IPU**

Changing your workflow for the better

Various interferences can affect the traditional RBC measurement technologies, such as the hydrodynamically focussed impedance and the HGB optical density (photometric) measurement, having an impact in particular on the red cell indices. These interferences are characterised by an increased MCHC result and highlighted by the analyser flagging 'Turbidity/HGB Interference?' or 'RBC Agglutination?' (Fig. 1).

Corrective laboratory procedures often involve time-consuming manual actions, such as plasma exchange, incubation, etc. This may now change: Once the dedicated CBC-O algorithm detects an increased MCHC, it automatically triggers a RET channel reflex measurement to identify the cause of the abnormally elevated MCHC. The outcome is presented in the CBC-O App in the *Extended* IPU* and ensures the best possible CBC result for this sample (Fig. 2).

* *Extended* IPU version 4.1 onwards

CBC-O: the RET channel provides you the answers

The CBC-O App in the *Extended* IPU

The App's dialogue window presents the necessary information to the user, for instance the cause of the increased MCHC or recommendations for the laboratory staff on how to proceed (Fig. 3). It also shows the results for parameters obtained by the hydrodynamically focussed impedance and optical density measurement and those obtained from the RET channel. For decision-making, the CBC-O App displays a recommendation which results should be reported, including recalculated RBC indices.* As a final step, the user always has to decide whether to follow the recommendations, i.e. report the proposed parameters, or keep the original results.

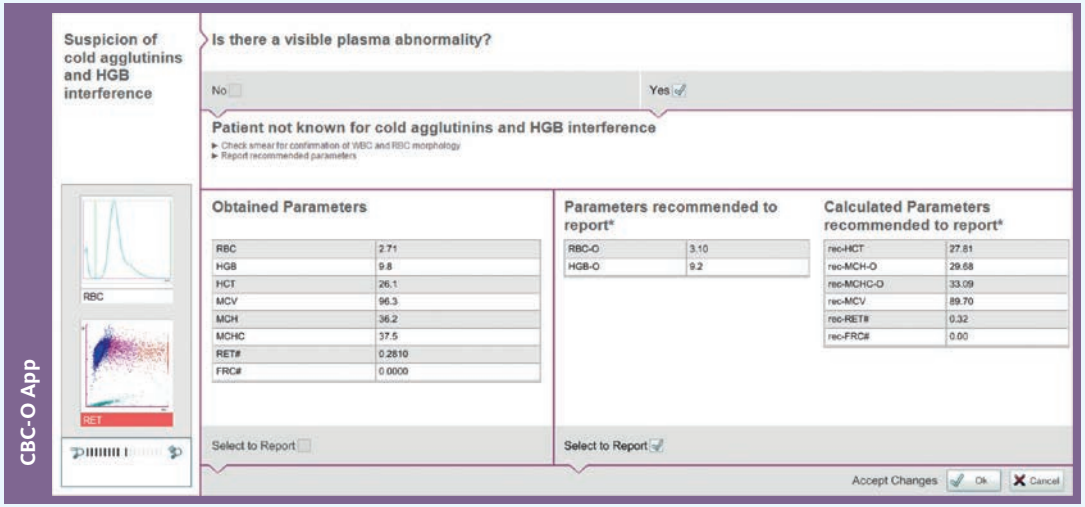

Fig. 3 *Screenshot of the CBC-O App dialogue window in the Extended IPU.*

Your benefits in daily routine

Improved workflow efficiency

- Standardised and cost-effective approach for RBC/HGB interferences
- RET reflex automatically performed
- Eliminates extra manual work and decreases TAT
- Fast and accurate results allowing immediate interpretation

More peace of mind

- Avoids the risk of misinterpretation and false results
- Provides support and guidance with difficult cases of an increased MCHC
- Causes are identified and evaluated based on independent publications, so best possible CBC results can be reported
- Helps with identifying RBC disease accompanied by hyperchromic cells (e.g. hereditary spherocytosis, sickle cell anaemia)

Conclusion

The CBC-O concept provides a complete result including a comprehensive explanation. This is beneficial for both laboratory workflow and biological interpretation. Making the most of your RET channel, you can save manual operational time in the lab, which in turn means saving money while improving patient care at the same time.

* The recommendations are based on:
Berda-Haddad Y *et al.* (2016): Increased mean corpuscular haemoglobin concentration: artefact or pathological condition? Int J Lab Hematology. 39(1): 32–41.
Nivaggioni V *et al.* (2021): Detection of Southern Asian Ovalocytosis with Sysmex XN-10: A complement to the decision tree previously described. Int J Lab Hematol.; 00: 1–3. (from *Extended* IPU 5.2 onwards)

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