

CBC+CRP (C Reactive Protein) testing in NICU environment

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The symptoms are not clear in the early stage of neonatal infections. Therefore, we need to evaluate CBC and CRP when we suspect neonatal infections.

System Utilized : Hematology analyzer
Parameters: CBC 3Diff and CRP (C reactive Protein)
Policy: Never overlook signs of infectious diseases



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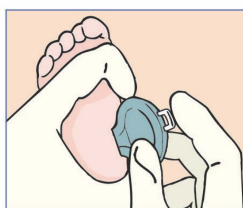
Q.1 Why provide immediate testing in the NICU as opposed to typical testing by the central laboratory?

A.1 In the central laboratory, 300 μ L of whole blood is required for testing CRP. For a low-birth-weight baby who develops anemia by frequent blood sampling, a minimum quantity for blood sampling is preferable. Also, in the central laboratory, it takes on average, about 30 minutes for coagulation, centrifugal treatment and reaction time with reagents, from blood sampling to obtaining the result. The analyzer used in the NICU requires a smaller quantity of blood sample and we can obtain the result in only 4 minutes which provides for immediate treatment by pediatricians.

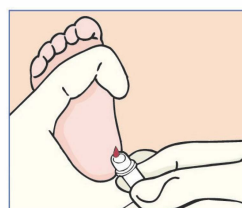
Q.2 What is the procedure for drawing blood samples from premature infants?

A.2 Usually, we take samples from the dorsal vein or heel with a micro guard which is a micro sample tube coated with EDTA.

Step for measurement



Drawing blood by lancet



Collecting blood to micro-tube



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Q.3 When do you measure CBC and CRP?

A.3 When newborn shows symptoms of possible infection, we measure both CBC and CRP to judge the medical condition and continue to monitor these tests each day until we see a recovery from the infection or postoperative condition.

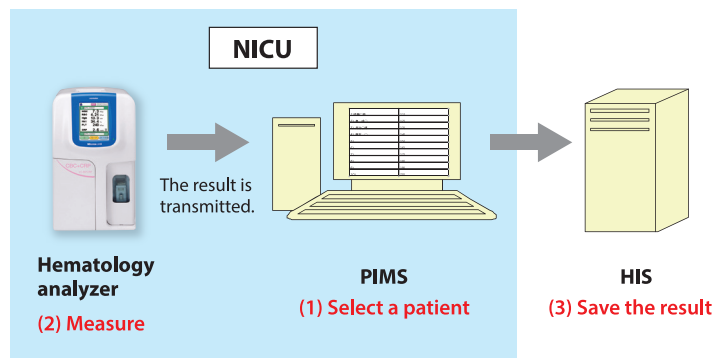
Q.4 What is required for analyzers used in NICU?

A.4 We chose the analyzer based primarily on how easy it was to use. The analyzer automatically starts up and shuts down so that we can save time for maintenance. The cooling unit is integrated in the analyzer, so we do not have to remove reagent from the analyzer.

Q.5 How does the analyzer transmit results to the information system of hospital?

A.5 The hematology analyzer is connected to the HIS (Hospital Information System) via PIMS which is manufactured by Philips Electronics Japan Co, Ltd. The NICU Patient Information System is software that relays clinical test results back to HIS. If CBC and CRP tests are measured with the hematology analyzer after the selection of a registered patient on the computer screen, the result will then automatically be transmitted to the PIMS.

Construction and operation procedure of system in the hospital



Laboratory area in NICU

