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Blasts flag in automated hemogram; an observation in acute febrile illness assessment in primary care setting

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ABSTRACT

Acute febrile illness is an important clinical problem. It is a common chief complaint that the patient usually presents to physicians. A basic laboratory investigation for assessment of the case with acute febrile illness is complete blood count (CBC). The automated hematology analyzer is a useful tool for CBC investigation in the present day. Here, the authors report on the observation on blasts flag in automated hemogram in CBC test for assessment of patients with acute febrile illness in a primary care setting. The summarization on the automated hemogram during 1 year period, 2017, was performed. The incidence of blasts flag is 1.79 %. Further investigations showed no case with hematological malignancy. Conclusively, blasts flag is not an uncommon result in CBC test for acute febrile illness assessment and this result is usually not related to an actual appearance of hematologic malignancy.

Core tip: Blasts flag is not an uncommon result in CBC test for acute febrile illness assessment and this result is usually not related to an actual appearance of hematologic malignancy.

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Introduction

Fever is an important medical problem. Acute febrile illness is an important clinical disorder in daily practice. It is a common chief complaint that the patient visit to the physician. A basic laboratory investigation for assessment of the case with this problem is complete blood count (CBC) (1). The automated hematology analyzer becomes a useful tool that is widely used for performing a CBC test (2). The automated hematological analyzer is proven useful in workload reduction and can provide several useful hematological parameters including to hemogram.

Objectives

Here, the authors report on the observation on blasts flag in automated hemogram in CBC test for assessment of patients with acute febrile illness in a primary care setting. The summarization on the automated hemogram was performed.

Materials and Methods

The authors performed a retrospective study on the CBC result for assessment of patients with acute febrile illness. The setting of this study was a medical center in Thailand, a tropical country in Indochina. All hematological tests in

the study were performed by a clinical laboratory of the medical center under the standard quality control process. The model of the analyzer is Coulter STKS. The authors reviewed the results of the CBC investigation during one year period (2017). The incidence of the result with blasts flag on hemogram result was determined. The research followed the Tenets of the Declaration of Helsinki.

Results

According to the study, there are 550 CBC tests for assessment of patients with acute febrile illness. There are 10 CBC test results with blasts flag, giving incidence is equal 1.79%. For each case with blasts flag, further blood smear investigation was conducted by a clinical microscopist and hematologist with the report of no finding of blasts cells. The final diagnosis of those cases with blasts flag was dengue in 8 cases and influenza in 2 cases.

Discussion

Complete blood count is the basic laboratory investigation. This hematological test is useful and basically used for working up for many medical problems. The acute febrile illness is a common chief complaint of the patient. This medical disorder can be the result of several problems

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including to inflammation, infection and malignancy (1). In the present day, the CBC test in medical center is usually performed by automated hematology analyzer.

Automated hematology analyzer is the useful medical instrument that can help in performing the CBC test. The analyzer can provide several useful hematological parameters including hemogram (3). Automated hemogram can be helpful in differential diagnosis of abnormal hematological finding. In addition, the analyzer can provide hemogram with flag that can be the primary clue for further investigation. Here, the authors focus on the finding on blasts flag. Here, it can be seen that blasts flag is not an uncommon result in investigating cases with acute febrile illness. The further investigation is basically recommended for the cases with flag. However, due to the microscopic examination, no malignancy is detected. The blasts flag in our setting is usually seen in the cases with infectious problems including to dengue, which is one of the common tropical infection in our setting. As noted by Furundarena et al, "*Operators cannot rely on the blast flag alone but have to consider other flags and hemogram data* (4)."

Conclusion

to conclude, blasts flag is finding is a possible result in

CBC test for acute febrile illness diagnostic assessment. This result is usually not related to an actual appearance of hematologic malignancy. Nevertheless, the cases with flag are usually associated with infectious diseases.

Authors' contribution

Both authors wrote the manuscript equally.

Conflicts of interest

The authors declare that they do not have any conflicts of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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