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An observational study to assess the hematological parameters in dengue fever

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Abstract
Background: Observation of the levels of blood parameters not only useful for diagnosis but also in prognosis of the disease. However, there is little studies in this area.
Objectives: the present study was undertaken to observe the hematological parameters in the individuals with dengue fever.
Methods: The present study involved 30 patients both males and females with age more than 15 years and diagnosed with dengue fever. Willing participants with mild symptoms were included in the study. Those with severe complications were excluded from the study. A thorough clinical evaluation was conducted on all the patients. Voluntary informed consent was obtained from all the patients before the study.
Results: The results were presented from table no.1 to table no.4. Table 1 Present age wise distribution of cases. Table 2 Present platelet Count of cases. Table 3 Present WBC Count of cases. Table 4 Present RBC Count in the cases. Majority of the patients belongs to age group 15-30years. Majority of the patient have platelet count between 10000-40000. Majority of the patients WBC count is between 11000-40000. Majority of the patients RBC count is between 5millions.
Conclusion: The present study presence variations in the blood parameters the patients with dengue fever the study results support the views of earlier studies however there is a need for furthered detail studies in this area. The present study presence variations in the blood parameters the patients with dengue fever the study results support the views of earlier studies however there is a need for furthered detail studies in this area.

Keywords: dengue fever, blood, hematology, platelets

Introduction
It has been observed that dengue fever is occurring throughout the world more profoundly. In history the cases of dengue was recorded in the year 1635. In Indian context, the first case was reported in the state of Tamil Nadu in the year 1935 [1]. The dengue fever effect on the individual may vary from asymptomatic to severe symptoms. It may be fever or hemorrhagic fever aith severe viral load. It is mandate to diagnose the disease and treat at the earliest to limit the mortality. The most common method used to diagnose is with genetic sequencing using RTPCR. Further, observation of hematological parameters is utmost important in the diagnosis. Especially observation of platelet count has immense importance in the diagnosis of the dengue fever. Other than platelet count, it is also useful to assess the total WBC count and lymphocyte count. Observation of the levels of blood parameters not only useful for diagnosis but also in prognosis of the disease. However, there is little studies in this area. Hence, the present study was undertaken to observe the hematological parameters in the individuals with dengue fever.

Materials and Methods
Study design: Observational study
Sampling method: Convenient sampling
Study population: The present study involved 30 patients both males and females with age more than 15 years and diagnosed with dengue fever. Willing participants with mild symptoms were included in the study. Those with severe complications were excluded from the study. A thorough clinical evaluation was conducted on all the patients. Voluntary informed consent was obtained from all the patients before the study.

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Method of data collection: Blood samples of the patients were collected following the standard guidelines and processed using the auto analyzer. All the procedures were followed standard guidelines issued in the literature.

Ethical consideration: The study proposal was approved by an institutional human ethical committe. Informed consent was obtained from all the participants. Confidentiality of data was maintained.

Data analysis: Data was analyzed using SPSS 20.0 version. Demographic data were presented as frequency and percentage. Student t-test was used to assess the significance of the difference between the groups.

Results

The results were presented from table no.1 to table no.4. Table 1 Present age wise distribution of cases. Table 2 Present platelet Count of cases. Table 3 Present WBC Count of cases. Table 4 Present RBC Count in the cases. Majority of the patients belongs to age group 15-30years. Majority of the patient have platelet count between 10000-40000. Majority of the patients WBC count is between 11000-40000. Majority of the patients RBC count is between 5millions.

Table 1: Age wise distribution of cases

Age group in years	Number of patients (n=30)	percentage
15-30	12	40
31-46	10	33.33
47-60	8	43.33

Data was presented as frequency and percentage

Table 2: Platelet Count of cases

Disease	Number of patients (n=30)	percentage
< 10000	2	6.66
10000-40000	10	33.33
40000-70000	3	10
70000-90000	5	16.66
90000-100000	3	10
>100000	7	23.33

Data was presented as frequency and percentage

Table 3: WBC Count of cases

Disease	Number of patients (n=30)	percentage
>4000	12	40
4000-11000	12	45
<11000	6	20

Data was presented as frequency and percentage

Table 4: RBC Count in the cases

Disease	Number of patients (n=20)	percentage
>5 millions	15	50
5 millions	10	33.33
<5 millions	5	16.66

Data was presented as frequency and percentage

Discussion

However, there is little studies in this area. Hence, the present study was undertaken to observe the hematological parameters in the individuals with dengue fever. The results were presented from table no.1 to table no.4. Table 1 Present age wise distribution of cases. Table 2 Present platelet Count of cases. Table 3 Present WBC Count of cases. Table 4 Present RBC Count in the cases. Majority of the patients belongs to age group 15-30years. Majority of the patient have platelet count between 10000-40000. Majority of the patients WBC count is between 11000-40000. Majority of the patients RBC count is between 5millions. The present study presence variations in the blood parameters the patients with dengue fever the study results support the views of earlier studies however there is a need for furthered detail studies in this area. Dengue fever is one of the dangerous fevers that occurs commonly in the population. The symptoms vary from mild fever to hemorrhage fever. For diagnostic purpose there is a need to investigate the genomic sequence. However this procedure cost effective. Hence assessment of blood parameters is an alternative. Assessment of WBC count and platelet count is found to be effective. Earlier studies reported that assessment of platelet count was very much correlated with the fever levels further decline in the WBC count also reported to have high value. The present study result supports the views of earlier studies. Further detailed studies are necessary to understand the role of blood parameters to better diagnostic and prognostic assessment. As the study is conducted in one center, it is recommended for multicentre studies.

Conclusion

The present study presence variations in the blood parameters the patients with dengue fever the study results support the views of earlier studies however there is a need for furthered detail studies in this area.

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