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REVEALING THE ROLE OF NONSTRUCTURAL PROTEIN 1 (NS_1) TEST FOR FINDING OF SEVERE DENGUE INFECTION

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Abstract:

Objectives: *We aimed in this analysis to observe the compassion of NS1 antimalaria ELISA examination of Dengue infection in patients.*

Study designed: *A Case control study diagnosis*

Place and Duration: *This study was conducted in the Microbiology Section, Department of Pathology, SIMS / Services Hospital, Lahore from January 2018 to December 2018.*

Methodology:*This analysis consists of samplings of clinically examined patients who have Dengue infection according to their gender and age under the provision of their detailed information from day of fever. The blood samplings with number of 113 were collected by accurately labeled non-reusable syringes in consistence of fever days on request forms specifying the data of patients. Dengue NS1 antibody ELISA examinations were processed through an amber-colored, protein-rich liquid which separates out when blood coagulates on the current day.Samplings were obtained from male and female patients that were 64 and 49 in number. Patients having age more than 18 years were 84.0 % in percentage. They were analyzed with DF and DHF in the Emergency Department and were entitled in the Services Hospital Lahore. This analyzation continued for 1 year from January 2018 to December 2018. Blood samplings were obtained in the non-reusable injections by the SIMS Micro lab. The samplings of the blood were permitted to clot before the process where a mixture is separated through spinning at 4000 RPM for the dispersion of sera. NS1 antibody ELISA examination was processed. ELISA equipment that were developed by BIORD in France were processed for this. The examinations were processed in accordance to the guidelines advised by the developers. The enduring sera were kept in serum containers at temperature of 20.0 degree centigrade that were perfectly branded.*

Results: *In the starting 6 days of contagion by virus of dengue there was a percentage of 50.0 % to 81.0 % optimistic in attitude of the NS1 antibody ELISA examination.*

Conclusions: *By the first 7 days of contagion of dengue there was a maximum compassion found through NS1 antibody ELISA examination. So, it is advised that labs do not acquire advanced instruments and have minimum money for the PCR can process NS1 Antibody ELISA examination.*

Key Words:*"day of fever", Dengue hemorrhagic fever, Dengue NS1 antigen, Dengue Fever.*

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INTRODUCTION:

Flavivirus is the reason of DF that consists of four serotypes which are DEN-1, DEN-2, DEN-3 and DEN-4. Aedes mosquito is the factor of its conveyance. DF is verified to be the significant ailment caused by mosquito in the world from the year 1990 2nd just to malaria [1]. In the year 1994 in Karachi, DF is stated firstly in Pakistan to be the prevalent. Whereas the serotype DEN-2 is primarily observed, for the sudden progression of DF in the year 2006 in Karachi, the DEN-2, DEN-3 were dependents of it [2]. Minimum out-breaks happened in Lahore due to DEN-2 and DEN-3 serotypes of dengue infection in the year 2007, 2008 and 2009 [3]. The influences were associated with several people to be inclined of the most critical term of DF like DHF as these were comprised of primary presented offset antiserum Dengue which is not homologous [4,5]. As per WHO avoidance, diagnosis, control and analyzation of dengue in the year 2009 verification of this ailment needs various examinations reliant to the phase of illness. Treatment was dependent to the molecular and viral features like opposing RT-PCR during primary illness days [6]. These methods are precious and need experienced person and the amenities to achieve whereas these are useful and frequent to give pre-treatment of dengue. Unintended sera-treatment related to seroconversion of 4 time increase in IgG or IgM is probable after 5 days of fever. Furthermore, the Ig M would be of the past illness and might could sustained positive for 3 months although, the treatment might often be sorted out due to intensity of Ig M which are non-predictable and minimum in subordinate contagions [7,8]. Two samplings are needed through the two phases that are recuperative and severe for Ig G. The treatment is verified by this outcome in a late processing. An operative implement for analysis of severe DF like clinical labs is presented by macromolecular biological catalysts immuno-assay predicted through the most sudden progression of DENV NS1 antibody [9]. Many of the hospital labs of Pakistan assess the comfort for ELISA examinations else not have for Viral cultures or PCR so it has got significance.

METHODOLOGY:

This analysis consists of samplings of clinically examined patients which have Dengue infection according to their gender and age under the provision of their detailed information from day of fever. The blood samplings with number of 113 were collected by accurately labeled non-reusable syringes in consistence of fever days on request forms specifying the data of patients. Dengue NS1 antibody ELISA examinations were processed through an amber-colored, protein-rich liquid which separates out when blood coagulates on the current day. Samplings were obtained from male and female patients that were 64 and 49 in number. Patients having age more than 18 years were 84.0 % in percentage. They were analyzed with DF and DHF in the Emergency Department and were entitled in the Services Hospital Lahore. This analyzation continued for 1 year from January 2018 to December 2018. Blood samplings were obtained in the non-reusable injections by the SIMS Micro lab. The samplings of the blood were permitted to clot before the process where a mixture is separated through spinning at 4000 RPM for the dispersion of sera. NS1 antibody ELISA examination was processed. ELISA equipment that were developed by BIORD in France were processed for this. The examinations were processed in accordance to the guidelines advised by the developers. The enduring sera were kept in serum containers at temperature of 20.0 degree centigrade that were perfectly branded.By the first 7 days of contagion of dengue there was a maximum compassion found through NS1 antibody ELISA examination. So, it is advised that labs do not acquire advanced instruments and have minimum money for the PCR can process NS1 Antibody ELISA examination.

RESULTS:

Analysis processed on patients defected by DEN-2 serotype of the virus as the 28 children out of 88.0 % out of 32 children go through from prediction free sNS1 in the febrile range of disease. 10 children out of 14 having DF and 16 children out of 18 having DHF with the percentage of 71.0 % and 89.0 % were predicted free sNS1 intensities between the patients suffering 3 days of fever. By, the first 7 days of contagion of dengue there was a maximum compassion found through NS1 antibody ELISA examination. So, it is advised that labs do not acquire advanced instruments and have minimum money for the PCR can process NS1 Antibody ELISA inspection.In the starting 6 days of contagion by virus of dengue there was a percentage of 50.0 % to 81.0 % optimistic in attitude of the NS1 antibody ELISA examination. There was a regular regression in the positivity of NS1 antibody after this procedure. There was no endurable variation according to statistics in the 1st 6 days as a matching of after days of contagion.By the first 7 days of contagion of dengue there was a maximum compassion found through NS1 antibody ELISA examination. So, it is advised that labs do not acquire advanced instruments and have minimum money for the PCR can process NS1 Antibody ELISA inspection.The blood samplings with number of 113 were collected by accurately labeled non-reusable syringes in consistence of fever

days on request forms specifying the data of patients. Dengue NS1 antibody ELISA examinations were processed through an amber-colored, protein-rich liquid which separates out when blood coagulates on the current day. Samplings were obtained from male and female patients that were 64 and 49 in number. Patients having age more than 18 years were 84.0 % in percentage. They were analyzed with DF and DHF in the Emergency Department and were entitled in the Services Hospital Lahore. Details are given in the following tabular forms.

Table No 01: Age and gender distribution

Gender	No of cases	Age	Percentage
Male	64	>18 years	57.0 %
Female	49	>18 years	43.0 %

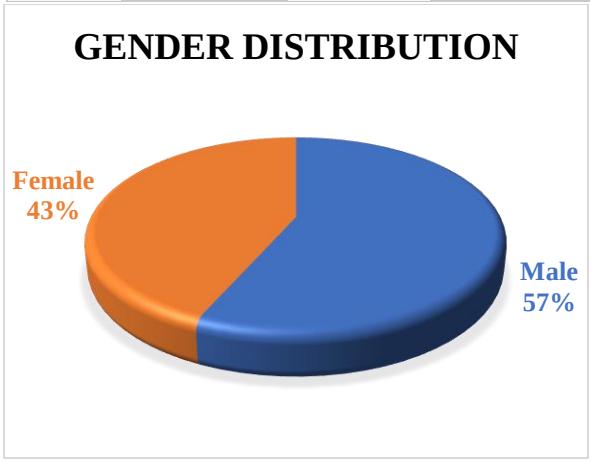
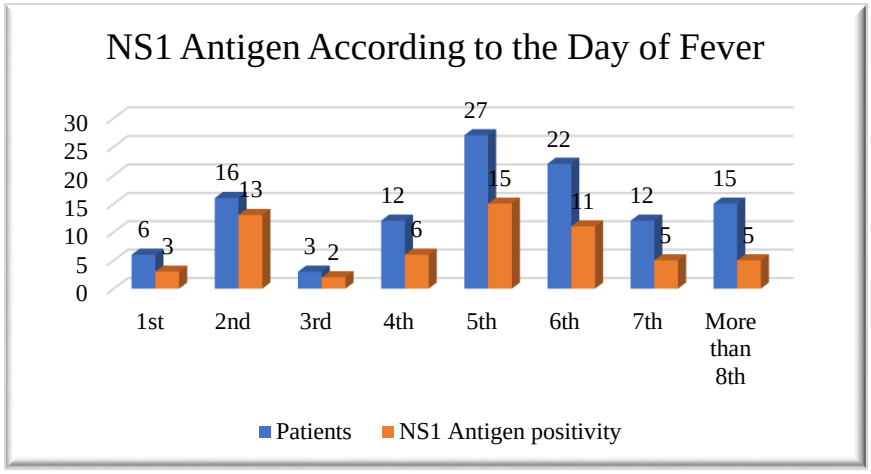
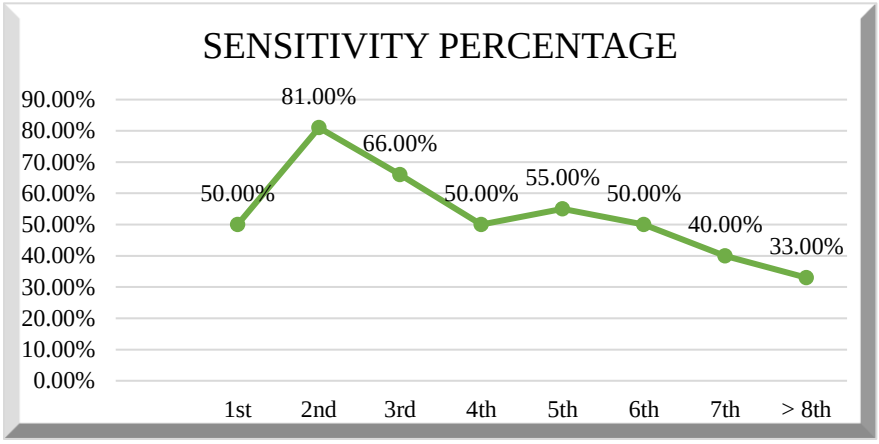


Table No 02: The Sensitivity of NS1 Antigen According to the Day of Fever

Day of Fever	Patients	NS1 Antigen positivity	Percentage
1st	6	3	50.0 %
2nd	16	13	81.0 %
3rd	3	2	66.0 %
4th	12	6	50.0 %
5th	27	15	55.0 %
6th	22	11	50.0 %
7th	12	5	40.0 %
More than 8th	15	5	33.0 %





DISCUSSION:

Pre-treatment and therefore expectancy of severe range of DHF and DF might could provide opportunity for the doctors in proper controlling age and decreasing death ratio and disease in these patients [10]. In this analysis NS1 antibody examinations processed on clinically supposed DF patients were observed. We got NS1 antibody prediction as most useful in positive cases having percentage 50.0 % to 81.0 % in the early 6 days of fever. The difference of positivity of examination on various days might be because of bad statement of fever days or contagion along various serotype. The compassion of NS1 antibody of variety of pathological serotypes [11]. The difference might be from the increased antigens and disinfected are in accordance with individual serotype NS1. This may affect minimum competently in accordance to else serotypes due to the homology in the amino acid rotation of NS1 do no cross from 80.0 % between viruses of dengue [12]. In the current analysis of outcome, the maximum compassion was observed on the 2nd day of fever that is 13 patients out of 16 patients with the percentage of 81.0 %. This observation is matched with the analysis processed in Thailand on patients defected by DEN-2 serotype of the virus as the 28 children out of 88.0 % out of 32 children go through from prediction free sNS1 in the febrile range of disease. 10 patients out of 14 having DF and 16 patients out of 18 having DHF with the percentage of 71.0 % and 89.0 % were predicted free sNS1 intensities between the patients suffering 3 days of fever[13]. 237 solo severe serum samplings and 50 matched samplings were examined in an analysis processed to measure various treatments. The compassion of NS1 antibody ELISA examination was observed to be 70.6 %. Almost actual affect of NS1 in viruses of DHF and DF in people is not found, the existence of maximum intensity of NS1 was advised to be a sign of DHF. So, hard working is required to examine the quantity of NS1 antibody in future and associate with the clinical image

[14].Similarly, an analysis processed by Chuansumrit A. in the year 2008 that else analyzers have observed maximum value of positivity. [15]. In the sera of patients having any of DHF or DF, they observed NS1antibody positivity at a percentage of 100.0 % in 7 from 7 days on 2nd day of fever. The outcome might never be accurate demonstrative of the condition as the capacity of the sampling in minimum.

CONCLUSION:

By the first 7 days of contagion of dengue there was a maximum compassion found through NS1 antibody ELISA examination. So, it is advised that labs do not acquire advanced instruments and have minimum money for the PCR can process NS1 Antibody ELISA examination in the early seven days of fever.It is observed that NS1 antibody ELISA examination is a compassionate positive examination present for the treatment of severe DF.

REFERENCES:

1. Zhang J, Jian R, Wan Y, Peng T, An J. Identification and Phylogenetic Analysis of DEN-1 Virus Isolated in Guangzhou, China, in 2002. Dengue Bulletin, 2004; 28: 135-144.
2. Jahan F. Dengue Fever (DF) in Pakistan. Asia Pac Fam Med, 2011; 10 (1): 1.
3. Fatima Z, Idrees M, BajwaMA, Tahir, Ullah ZO, Zia MQ, et al. Serotype and genotype analysis of Dengue Virus by Sequencing followed by Phylogenetic analysis using samples from three mini outbreaks 2007 – 2009 in Pakistan. BMC Microbiology, 2011; 11: 200.
4. Halstead SB. Dengue. Lancet. 2007; 10: 370 (9599): 1644-1652.
5. Moi ML, Lim C, Chua CB, Takasaki T, Kurane1 I. Dengue Virus Infection-Enhancing Activity in Serum Samples with Neutralizing Activity as Determined by Using FcγR-Expressing Cells:PLoSNegl Trop Dis. 2012; 6 (2): e1536.
6. Dengue: guidelines for diagnosis, treatment, prevention and control. Geneva: World Health Organization, 2009.
7. Shu P, Huang J. Current Advances in Dengue Diagnosis: Clin Diagn Lab Immunol, 2004; 11 (4): 642–650.
8. Hunsperger EA, Yoksan S, Buchy P, Nguyen VC, Seka-ran, Enria DA, et al. Evaluation of Commercially Available Anti–Dengue Virus Immunoglobulin M Tests. Emerge Infect Dis. 2009; 15 (3): 436-440.
9. Alcon S, Talarmin A, Debruyne M, Falconar A, Deubel V, Flamand M. Enzyme-Linked Immunosorbent Assay Specific to Dengue Virus Type 1 Nonstructural Protein NS1 Reveals Circulation of the Antigen in the Blood during the Acute Phase of Disease in Patients Experiencing Primary or Secondary Infections. J Clin Microbiol, 2002; 40 (2): 376–381.
10. Kittigul L, Pitakarnjanakul P, Sujirarat D, SiripanichgonK. The differences of clinical manifestations and laboratory findings in children and adults with dengue virus infection. J Clin Virol. 2007; 39 (2): 76-81.
11. Hermann L.L., Thaisomboonsuk B., Poolpanichupatam Y., Jarman R.G., Kalayanarooj S., Nisalak A. et al. Evaluation of a Dengue NS1 Antigen Detection Assay Sensitivity and Specificity for the Diagnosis of Acute Dengue Virus Infection. PLoSNeglTrol Dis. 2014; 8 (10): e3193.
12. Dussart P, Labeau B, Lagathu G, Louis P, Nunes MRT, Rodrigues SG, Storck-Herrmann C, Cesaire R, Morvan J, Flamand M, Baril L. Evaluation of an Enzyme Immunoassay for Detection of Dengue Virus NS1 Antigen in Human serum. Clin Vaccine Immunol. 2006; 13 (11): 1185-1189.
13. Libraty DH, Young PR, Pickering D, Endy TP, Kalaya-narooj S, Green S, Vaughn DW, Nisalak A, Ennis FA, Rothman AL. High Circulating Levels of the Dengue Virus Nonstructural Protein NS1 Early in Dengue Illness Correlate with the Development of Dengue Hemorrhagic Fever: J Infect Dis., 2002; 186 (8): 1165-1168.
14. Tontulawat P, Pongsiri P, Thongmee C, Theamboonlers A, Kamolvarin N Poovorawan Y. Evaluation of Rapid Immunochromatographic NS1 Test, Anti-dengue IgM Test, Semi – Nested PCR and IgM Elisa for Detection of Dengue Virus. Southeast Asian J Trop Med Public Health, 2011; 42 (3): 570-578.
15. Chuansumrit A, Chaiyaratana W Pongthanapisith V, Tangnararatchakit K, Lertwongrath, S, Yoksan S. The Use of Dengue Nonstructural Protein 1 Antigen for the Early Diagnosis during the Febrile Stage in Patients with Dengue Infection. Peds Infec Disease J, 2008; 27 (1): 43-48.