

Epidemic of dengue virus



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Ghani et al (2008) conducted a research on the 2006 epidemic of dengue virus at a tertiary care centre in Sindh. The basic reason behind conducting research was to investigate the outcome of a selected group of patients who were either alleged or had been confirmed to be infected with the dengue virus and were being provided treatment at Liaquat Univesity Hospital in Hyderabad. The methodology that was used in this research was that 116 patients were kept under observation as they were being treated for the dengue infection.

All relevant tests pertaining to finding out whether a person has dengue were conducted. These tests were like investigating the platelet count of the patient for thrombocytopenia, symptoms recognition like myalgia, high febrility, purpura and dengue antibody recognition etc. The clinical information conducted was also supported with other data gathering such as demographics and the data analysis was done on the SPSS 10.0 software. The findings that were registered indicated that out of 116 patients, only 52 patients had the dengue infection.

Almost all of the confirmed cases had indications of thrombocytopenia and leucopenia which are key factors in determining the dengue virus. The mortality rate in this case was that of three deaths. Khan et al (2010) researched on a similar topic as done by Ghani et al (2008) and it relates to the incidence of dengue fever in a tertiary care hospital. The setup in which the research was conducted matched that of Ghani et al (2008) i. e. the sample was selected at Liaquat University Hospital in Hyderabad.

The research was also descriptive in nature as it was meant to find out the number of patients who actually had dengue as they had initially been reported with dengue related symptoms but had not been proven positive as yet. The methodology in this regard was that patients and those also who were adults and had been reported with acute fever were checked for dengue fever. The methodology in this regard is different as it is looking into both dengue hemorrhagic and dengue shock syndrome which are varying grades of dengue infection.

The procedure for investigating the symptoms was the same as in the case of Ghani et al (2008) in which clinical tests were conducted such as tourniquet test, hematological examination etc. The conclusion was that out of a total of 50 patients, only 20 were confirmed to be suffering from dengue fever out of which only 2 were listed as suffering from dengue hemorrhagic fever; no mortality rate was noticed. Ayyub et al (2006) research is similar to the two that have been discussed before except that this time the setting is not of Pakistan and in fact has been done in a public hospital in Jeddah, Saudi Arabia.

This particular research aims to target the clinical, laboratory and demographic profile of all the patients that have been confirmed with either dengue fever or dengue hemorrhagic fever and the hospital setting in this regard is King Abdulaziz Hospital & Oncology Center in Jeddah. The methodology followed in this regard was of similar nature to the previously mentioned researches. In this one a sample of 80 patients were considered. All of these patients had been admitted in the timeline of May 2004 till April

2005 and the patients' symptoms were suspected to be that of either dengue fever or dengue hemorrhagic fever.

Statistical profiling was done in which the factors that were considered were age, gender, monthly distribution, ethnicity clinical and laboratory profiles. The accumulated data was then analyzed using SPSS version 7.5 software. The findings indicated that out of 80 patients, only 39 patients were confirmed to have the dengue virus and the male to female ratio was 3:3:1. The duration of hospitalization was between 4 to 23 days thus making an average of 7.3 days. Eventually all patients showed signs of improvement and were completely treated towards the end of the period.

Rahman et al (2002) research is based upon the initial outbreak of dengue hemorrhagic fever in Bangladesh in 2000. The research is different from the above mentioned three researches as the sample population is confirmed to be suffering from the dengue virus and only the dengue virus serotype has to be confirmed. The methodology consisted of doing an observation for dengue patients in a hospital from July 1- October 31, 2000. The clinical details of every patient were tabulated along with some demographic data such as age.

The research is different as it also focuses on the type of dengue viruses through antibody recognition which in this regard are the analysis of immunoglobulin (Ig) M and (Ig) G. The types of viruses were indicated through a test known as enzyme-linked immunosorbent assay (ELISA). The results concluded that out of 176 confirmed dengue patients 60.2% suffered

from dengue fever, 39. 2% suffered from dengue hemorrhagic fever while 0. 6% had dengue shock syndrome.

The mortality rate in this case was 1. 14% as two atients died in which one suffered from dengue fever and the other from dengue shock syndrome. Both patients in this regard were adults. Raja and Devi (2006) conducted research on the level of dengue disease prevalent in the teaching hospital which was the University of Malaya in Kuala Lumpur, Malaysia. This research has been done on a larger scale when compared to other mentioned researches as the timeline of investigation was from 2002 to 2004 and more than 4000 patients were observed and analyzed.

The methodology is similar in which demographic, laboratory and clinical features were tabulated and recorded. As in the case of Rahman et al (2002) the ELISA test was also conducted to establish the types of dengue viruses occurring amongst patients and in which proportion. Ethnicity was also taken as a major variable owing to the fact that Malaysia is known for its tourism industry and it was being analyzed whether the dengue virus was present due to foreign persons' movement within the country.

The conclusion of the research was that a total of 4753 patients were recorded to be suffering from dengue virus infection, out of which 2606 were males and 2137 were females and that the most affected age group was from 1 to 10 years then from 21 to 30 years and finally 11 to 20 years. Out of the ethnic groups recorded Malays were the affected ethnicity. The most common dengue infection was that of dengue fever which was around 91% while 5. % were indicated as dengue hemorrhagic fever and only a few cases

had dengue shock syndrome. However the results also indicated a rising trend in dengue infections throughout the recorded years and this puts light on the fact that the spread of dengue is increasing yearly and is a cause of alarm and should be carefully controlled. Lum et al (2007) is a very effective research when the results of Raja and Devi (2006) are to be considered and also on the fact concerning the rising trend of the dengue infection.

The paper focuses on the prevailing management standards that are set by hospitals to control and treat the spread of dengue virus. The research also looks into the various sectors of dengue management and tries to identify the areas that can be improved upon. The research has been done on a global basis as all of the authors are part of a cross country collaborative study which focuses on dengue case management. The research has been backed up by the WorldHealthOrganization (WHO).

It is an exploratory research which aims at providing a standardized format in which patients showing symptoms related to dengue infection can be properly diagnosed and if confirmed positive, then what is the type of treatment will be provided for the entire infection cycle. Mostly the research lays emphasis on early detection of onset of dengue infection as negligence can lead to worsening of the patients health and may lead towards either dengue hemorrhagic fever or dengue shock syndrome which can prove fatal. The research also focuses on treating patients with varying levels of severity of infection.

The research concludes on finding an appropriate management style in which dengue infection can be properly treated and the possible inception of

training programs which can be conducted to make the system more efficient. Riaz et al (2009) analyzes on the extent to which dengue fever had occurred in Karachi during the 2006 epidemic. The research primarily focuses on the spread of dengue fever, dengue hemorrhagic fever and dengue shock syndrome amongst adult patients who had been admitted in a tertiary care hospital in Karachi.

The research is somewhat broader in the context that it also focuses on the cost that patients had to bear during their treatment period. The methodology of study was similar as in the previous mentioned researches that a hospital is chosen in which the statistical information related to dengue is recorded over a period of time, which in this case was from January to December 2006. In this time the number of patients was divided into three categories based on the severity of the dengue infection.

The type of symptoms was also noticed in all three categories. The research concluded that the prevalence of dengue fever was on the rise and a lot of patients were falling under the severe infections of DHF and DSS. The alarming fact noticed was that it tended to be in more in younger patients and was also indicated a higher fatality rate. Witayathawornwong (2001) research is very important as it analyzes the severity of dengue hemorrhagic fever amongst infants and the level of seriousness that can occur in this regard.

The research is important as it is focusing on a very short age group range and also because this age group is amongst those that are highly susceptible to the spread of dengue fever and the level of complications may be more in

this age group. The research was conducted in tertiary care hospital namely Petchabun Hospital which is situated in Thailand. The research only focuses on the patients suffering from dengue hemorrhagic fever and not dengue fever and dengue shock syndrome. The methodology of this research was conducted in a way in which 31 patients from a total of 1044 cases of DHF were chosen.

The median age was 8 months. All relevant tests pertaining to the indication of the dengue virus were conducted via clinical and laboratory procedures. The data was categorized in terms of its nature e. g. clinical data, epidemiological data etc. The conclusion of this research was that even though the patients recovered but, the time taken for recovery and the sort of treatment provided was more extensive and required careful handling of the patients and more advanced procedures like plasma or red blood cell replacement.

Bhatty et al (2009) research is more of a specialized nature as it focuses on one of the clinical aspects that arise from dengue fever which is that of acute acalculous cholecystitis. This is more commonly known as gall bladder infection and is of secondary nature as it arises due to the onset of dengue fever. The aim of this research is to evaluate the frequency and management of acute acalculous cholecystitis in dengue fever patients. The setting of this research was done in Civil Hospital in Karachi.

The methodology of this research was that 40 patients suffering from dengue fever were investigated and tests were performed which would indicate the presence of acute acalculous cholecystitis. This was done through liver

function tests, blood sampling and ultrasound which indicated if any liver or gall bladder enlargement was important. The research is important as this secondary infection is an important indicator of whether a person is suffering from dengue or not.

Also this infection itself requires careful handling and the preventive procedures have to be kept in check. The findings of this research were that eleven out of 40 patients suffered from acute acalculous cholecystitis which was seen as a major proportion, but no fatality was present and the patients recovered fully by the help of proper clinical procedures and health management. Syed et al (2010) research caters to a very significant area which focuses on the perception of dengue fever by the adults of high and low socioeconomic groups.

The research focuses on various dimensions such as how the diverse class groups are knowledgeable about the dengue virus and what is their outlook towards it and that do they take proper preventive procedures of avoiding the spread of the dengue virus or not. The methodology in this regard was done in the form of a cross sectional survey which consisted of targeting the diverse socioeconomic classes prevailing in the Karachi area. In this regard a sample size of 440 adults was taken and the primary data collection tools used was questionnaires.

The results were then compiled and run through regression analysis in which knowledge regarding dengue infection was taken. The findings indicated that only about thirty five percent of the sample size had sufficient knowledge concerning dengue and this was also prevalent amongst the higher

socioeconomic classes. The findings indicated that the government is not taking proper measures to educate the mass public about dengue virus and what type of proper preventive methods are required to stop the spread of dengue infection. Possibly as the research concludes more attention should be given towards informing the lower socioeconomic groups.