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Research Article

**PREVALENCE OF ANTI-HEV ANTIBODY AMONG
CHILDREN OF PRIMARY SCHOOL**¹Dr Muhammad Jhangeer, ¹Dr Ayesha Saddiqa, ²Dr Bilal Jalil¹DHQ / Teaching Hospital Gujranwala, ²Capital Development Hospital (CDA) Islamabad.

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Abstract:

Objectives: The aim of this study is to interrogate the prevalence of anti-HEV antibody among the children of primary school in Gujranwala, Pakistan.

Methodology: The investigation of the antibodies of Anti-Hepatitis E virus carried out in one hundred and eighty-five children of primary school in which ninety-one non-urban areas and ninety-four children were from Gujranwala. The separation of the children carried out in two groups of age like group of 7 years of age and group of 14 year of age children. The testing of the samples carried out for anti-hepatitis E virus antibody with the utilization of the enzyme linked immunoassay.

Results: A sum of twenty-three children of primary school was positive in anti-hepatitis E virus antibody. The prevalence rate was 12.40%. The rate of prevalence was 13.10% in non-urban regions and 11.70% in the city areas. The disparity in the rates of sero-positive was not much significant. Among total one hundred and eighty-five children of primary school, anti-hepatitis E virus antibodies were available as positive in 18.10% (n: 17) in the group of 7 years of age & 6.60% (n: 6) in the group of 14 year of age. This disparity among the rates of positivity was significant between the children of both groups.

Conclusions: We found no relationship between the anti-hepatitis E virus antibody and sex of the student, level of social and economic condition, qualification level of parents and none-urban or city areas. The prevalence of anti-hepatitis E virus antibody was much high in the group of seven years of age in comparison with the group of 14 year of age children.

Keywords: Anti-HEV Antibody, Hepatitis, Non-Urban, City, Outbreak, Immunoassay, economic, rates, enzymes.

Corresponding author:

Dr. Muhammad Jhangeer,
DHQ / Teaching Hospital Gujranwala.

QR code



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INTRODUCTION:

HEV is an infectious disease with medical & morphological factors of acute hepatitis [1-3]. This HEV virus is a virus of RNA, there is a perception that it spreads from the route of fecal or oral. The water contaminated with the hepatitis E virus is the cause of the outbreak of hepatitis E. In many tropical as well as sub-tropical regions, this disease is an endemic. There is report of fifty outbreaks of this disease in the South East part of Asia as well as the central part of Asia, approximately whole part of the Africa & Mexico. In all these areas, both forms as sporadic & endemic of hepatitis E are available [2, 4]. It is not common of person-person transmission of the disease.

There is no chronic sequence of this disease and the infection of this disease is self-limited. The greatest occurrence of this disease mostly occurs in the persons having the age between 15 to 40 years. The occurrence of HEV is very rare in some areas of the countries which are developed but the prevalence in some areas much high against with the expectations suggesting that there is very high occurrence of this disease in the whole world. But, the description of the medical features & various factors of risks of the sporadic Hepatitis-E are not available [1-5]. This research work conducted in Pakistan to interrogate the prevalence of anti-hepatitis E virus antibody in the children getting treatment in the primary schools.

METHODOLOGY:

This research work conducted for the assessment of the prevalence of Hepatitis-E among the healthy children of primary school in Gujranwala, Pakistan. Before the start of this research work, we got the consent of the parents of all children in written. We collected blood samples for testing and we did not perform any additional method on the participants. The investigation of the antibodies of anti-hepatitis E virus carried out in one hundred and eighty-five children in which ninety-one children were from non-urban areas and ninety-four children were from city areas. The separation of the patients carried out in 2 groups as group of 7 year of age children and the group of 14 year of age children.

We collected the samples of blood from every child; we stored the specimens of serum under negative seventy degrees centigrade until the examination in

laboratory carried out. The testing of the samples of serum carried out with the utilization of enzyme immune-assay for anti-hepatitis E virus antibodies. We performed the ELISA method in accordance with the standards of the manufacture of the kit. The age of the child, gender, the living area, social and economic condition & qualification of the parents were under interrogation to know about the risk factors. SPSS V. 16 was in use for the analysis of the collected information. We used the Chi square test for the identification of correlation among different variables. P value of less than 0.050 was significant.

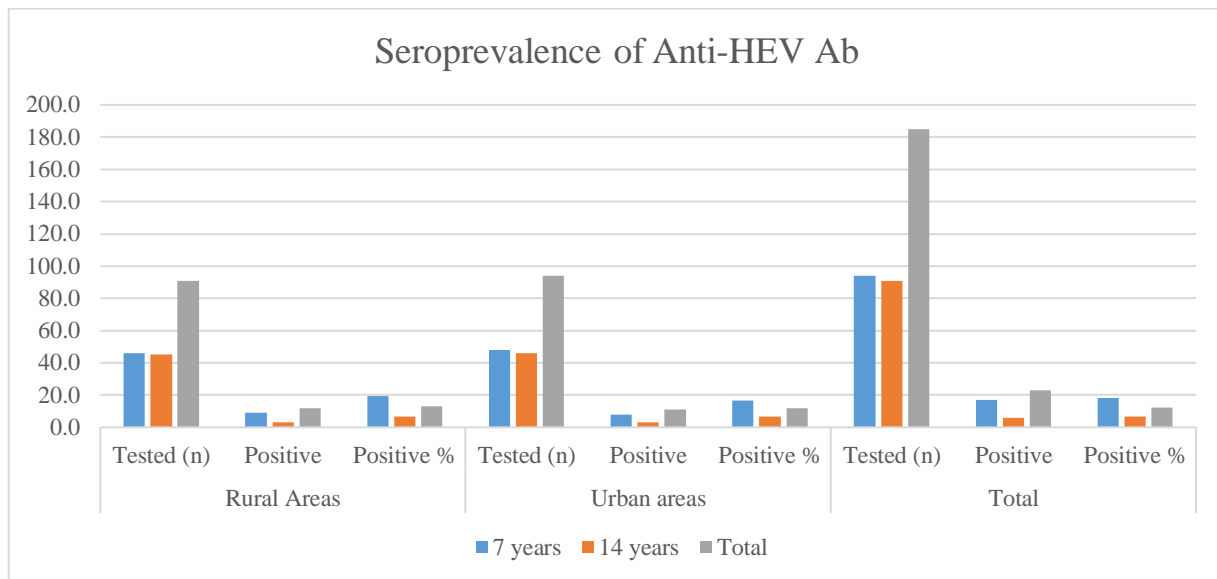
RESULTS:

Total 185 children were the part of this research work with age of 7 and 14 years. History of icterus was not available in any child. Ninety-one children were from non-urban areas in which forty-seven were females and forty-four were male. Ninety-four children were from city areas in which forty-five were females and forty-nine were males. The social and economic condition & qualification of the parents were much low in the non-urban areas in comparison with the children of city areas. Total twenty-three children, in whom ten were females and thirteen male, were available as positive for anti-hepatitis E virus antibody, providing a rate of prevalence of 12.40%. The rates of prevalence were 13.10% in non-urban areas and 11.70% in the city region.

The disparity among the rates of positivity was significant. In non-urban areas, the rates of prevalence were 19.50% for the group of 7 years' age children and 6.60% for the group of 14-year age of children. In the city areas, the rates of prevalence were 16.60% for the group of 7-year age children and 6.50% for the group of 14 year of age. Anti-hepatitis E virus antibodies were present as positive in 18.10% (n: 17) in Group of 7-year age children and 6.60% (n: 6) in the group of 14 year of age children. The disparity in the rates of positivity was significant. Table-1 displays the prevalence of anti-hepatitis E virus among the children of primary school in Gujranwala by age as well as living area. We found no relationship between the anti-hepatitis E virus antibody and sex, social & economic condition, qualification level of parents. We found the high occurrence of HEV in the group of 7 year of age children in comparison with the group of 14 year of age children.

Table-1 : Age Seroprevalence of Anti-HEV Ab in Both Areas

Age groups		7 years	14 years	Total
Rural Areas	Tested (n)	46.0	45.0	91.0
	Positive	9.0	3.0	12.0
	Positive %	19.50	6.60	13.10
Urban areas	Tested (n)	48.0	46.0	94.0
	Positive	8.0	3.0	11.0
	Positive %	16.60	6.50	11.70
Total	Tested (n)	94.0	91.0	185.0
	Positive	17.0	6.0	23.0
	Positive %	18.10	6.60	12.40

**DISCUSSION:**

The main cause of the acute hepatitis in the countries which are under development is HEV. The contaminated water is the main reason of the HEV epidemics in most of the areas [6]. The prevalence as well as magnitude of the outbreaks of HEV has an association with the condition of hygiene and density of the population in the region with reduced supply of fresh water. The presence of particles of HEV is very common in sewage [2]. There are many research works present for the occurrence of anti-hepatitis C virus prevalence in the healthy people in whole

world. Those works found the occurrence of disease in all the regions. The occurrence of disease in the endemic regions of Asia & Africa is much high in accordance with the regions which are non-endemic.

In majority endemic regions, anti-hepatitis C virus was available in 5.0% children of < 10 years and this rate rises from 10.0 to 40.0% among young person having age of > 25 years [7, 8]. These findings show that the occurrence of this disease is much high among young children [8]. The prevalence of disease is much high in the age group of 15-39 years and

very low in the children of less than fourteen year of age [9]. Some research work reported the high occurrence in children [2, 10]. From 12% to 56% of sporadic hepatitis infections in small age children in the non-urban areas of Egypt, urban areas of Sudan, Somalia & India are because of the infection of hepatitis E virus [10-15]. In a research work conducted in India, they discovered the anti-hepatitis E virus antibodies among the children having less than five year of age [16]. Many research works conducted in our country to show the occurrence of HEV in our societies. In accordance with those research works, the range of anti-hepatitis E virus was from 3.0% to 29.0% [17]. One research work conducted in Turkey stated that prevalence of hepatitis E was 2.10% in the children having 6 months to fifteen year of age [18]. In the research work of Colak [19], he found no antibody of hepatitis E virus among the children of primary school.

Atabek [20] in his research work found the occurrence of anti-hepatitis E virus antibody as 6.80% in children from 7 to 12 years of age & 8.90% rate of occurrence among children from 13 to 18 years of age. Majority of the research studies show that IgG anti-hepatitis E virus titers peak about twenty-eight days after the infection & decline fast [9, 21]. The high occurrence of the disease shows that levels of anti-hepatitis E virus antibody reduce with the passage of time [8, 9, 22].

CONCLUSION:

This research work displayed that prevalence of the anti-hepatitis E virus antibody is much high among the children of primary school in this particular city. One of the main reasons behind this high occurrence was improper sanitation in this city. There should be a consideration of hepatitis E virus as an acute hepatitis.

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