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## Seroprevalence of Hepatitis A Virus Antibody in Bijapur, Karnataka

We studied the seroprevalence of anti-HAV IgG in children of Bijapur a tier III city/backward district in Karnataka and its relation with sociodemographic parameters. Out of 142 children, 6 months to 15 years who were included, 63 (44.4%) were sero positive, suggesting that Bijapur is a low endemic area.

**Key words:** *Hepatitis A, IgG, Seroprevalence, Socioeconomic condition.*

In areas of high endemicity, most children are exposed to Hepatitis A virus (HAV) and the consequent acquisition of antibodies against the virus confers lifelong immunity. The changing scenario in the last 20 years in developing countries from high to low seroprevalence reflects the impact of living standards and environmental hygiene on prevalence of infection. In India, limited epidemiological data are available on HAV

infection, with a seroprevalence of anti HAV IgG exceeding 90% in adults. However, there have been recent reports of a decreasing prevalence in this country, suggesting that the seroprevalence of HAV antibodies is becoming similar to industrialized world.

We determined seroprevalence of anti-HAV IgG in a cross-sectional study carried out between November 2006 to April 2008. Children 6 months to 5 years age attending our hospital and children between age 5 years to 15 years from an urban and rural/slum school of Bijapur, were included.

Detailed socioenvironmental history and immunization history were taken. Children with history of jaundice, hepatobiliary disease and those who are already immunized against hepatitis A were excluded from the study. 2 mL of blood in plain vial was collected; ELISA test was done for anti HAV IgG (Wantai Biopharma antibody kit). Data was analyzed using Correlation coefficient and Z test.

The age distribution shows a significant transition of positivity for anti HAV IgG in the age group 3 to 4 years. As age increases seropositivity for anti HAV IgG also increases at the rate of correlation coefficient 0.684.

**TABLE I** SEROPOSITIVITY IN RELATION TO SOCIOENVIRONMENTAL FACTORS

	Factors	Total Cases (n)	Positive Cases	% Positive	P Value
Sex	Male	77	32	41.5	0.46
	Female	65	31	47.7	
Age	6mo-5 y	76	27	35.5	0.02
	5-15 y	66	36	54.5	
Background	Urban	66	21	31.8	0.005
	Slum/Rural	76	42	55.3	
Family Size	3-5	76	24	31.6	<0.001
	≥ 6	66	39	59.1	
Persons per room	> 2	78	36	46.1	0.636
	≤ 2	68	27	42.2	
Source of water	Outside house	79	41	51.9	0.043
	Inside house	63	22	34.9	
Type of toilet	Open field	65	30	46.1	0.693
	Own	77	33	42.8	
Hand wash Habit	Unsatisfactory	93	49	52.7	0.006
	Satisfactory	49	14	28.6	
Socioeconomic Class	Lower	76	41	53.9	0.022
	Higher+middle	66	22	33.3	

Relation between socioenvironmental factors and HAV IgG seropositivity is shown in **Table I**. Urban/rural/slum background, family size, source of water supply, hand washing habit and socioeconomic strata had a significant association ( $P < 0.05$ ) with presence of anti HAV IgG.

Seroprevalence in all age groups was low in our study compared to other studies from India except the study by Arankalle, *et al.* [2] from Kerala. Previous studies from India have reported a seroprevalence rate varying from 4.5% to 94.1% among different age groups [6-11]. All these studies were done around the year 2000 [2-11]. Statistically significant association of socio-environmental factors were also reported in previous studies [3-5].

Seroprevalence of HAV in our study population from Bijapur, a tier III city, India is lower than other studies conducted in different parts of India. Seroprevalence might have declined with improved sanitation and improved socioeconomic status or it may be a low endemic area.

If a small city has a low seroprevalence of

antibody it compels us to investigate in bigger cities with superior hygiene and socioeconomic conditions and larger studies from different parts of India from time to time to decide the immunization strategy against hepatitis A.

**CP Rath, Arvind Akki, SV Patil and  
SS Kalyanshettar**

*Department of Pediatrics, BLDEA's Shri B M Patil  
Medical College & Research Centre,  
Bijapur, Karnataka India.  
drcprath@rediffmail.com*

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