SERO – PREVALENCE RATE OF HEPATITIS B ANTIGEN AMONG PEOPLE OF OKPOKWU L.G.A. OF BENUE STATE, NIGERIA

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Abstract

This study was carried out on 400 people at the General Hospital Okpoga through Observation method of data collection ('rapid' testing of the blood samples) to determine the sero-prevalence and the distribution of Hepatitis B surface antigen amongst people in Okpokwu Local Government Area of Benue State. Percentages and Chi-Square were the statistical tools used and aided by SPSS for the analysis of data. A results show that the overall sero-positivity of hepatitis B surface antigen (HBsAg) based on age group was 17.3%. The prevalence was found to increase with age, occupation, other risk factors and sex distributions were not statistically significant. Hence, the high prevalence of HBsAg in the early ages provides evidence for an urgent mass immunization in the local government.

Hepatitis B is one of the most common infectious diseases in the world and major public health problem. It has been estimated that 350 million people worldwide are chronic hepatitis B virus (HBV) carriers. The prevalence of chronic HBV infection shows wide regional variation; ranging from high rates of greater than 8%, found in Africa, Asia and the Western Pacific to intermediate rates of 2-7% in Southern and Eastern Europe to low rates of less than 2%, in Western Europe, North America and Australia. The predominant routes of transmission vary according to the endemicity of the HBV infection. In areas of high endemicity, perinatal transmission is the main route of transmission, whereas in areas of low endemicity, sexual contact amongst high-risk adults predominant (Bukbuk, D.N, Bassi, A.P, Mangoro, Z.M; 2005). The consequences of infection are enormous; between one-quarter and one-third of people infected chronically with HBV are expected to develop progressive liver disease and annually, it causes one million deaths globally. Therapeutic intervention is the only option for those with established chronic HBV – associated liver disease. Lamivudine, a nucleoside analogue, is the first effective, and well-tolerated, oral treatment for chronic cases. However, mass vaccination programs have been established to control the spread of HBV infection.

Statement of Problem

This exercise is aimed at knowing one of the reasons why some student abscond from the class, the prevalence rate of Hepatitis B in the Local government and to proffer remedy to curb the transmission.

Methodology

The study was conducted on 400 people at the General Hospital Okpoga, Okpokwu Local Government Headquarter through Observation Method of data collection. The blood sample of each person was taken and a 'rapid' test was carried out to detect the presence of Hepatitis B surface antigen. Percentages and Chi-Square were the statistical tools used and aided by SPSS for the analysis of data.

Instrument Design/Data Analysis

Distribution of Hepatitis B surface antigen within Population Screened

Table 1: Distribution of HBV Based on Demographics Factors

Occupation	No tested	Pos (%)	Neg (%)
Housewives	125	17 (13.6)	108 (86.4)
Traders	49	10 (20.4)	39 (79.6)
Civil Servants	30	6 (20.0)	24 (80.0)
Farmers	78	10 (12.8)	68 (87.2)
Schooling	118	26 (22.0)	92 (78.0)
Total	400	69 (17.3)	331 (82.8)

Table 2 Distribution of HBV Based on Sex

Sex	**No tested**	**Pos (%)**	**Neg (%)**
Male	168	28 (16.7)	140 (83.3)
Female	232	41 (17.7	191 (82.3)
Total	400	69 (17.3)	331 (82.8)

Table 3 Distribution of HBV Based on Risk Factors

Risk factor	**No tested**	**Pos (%)**	**Neg (%)**
Use of unsterilised			
Sharp instrument			
Yes	153	31 (7.8)	122 (30.5)
No	247	29 (7.3)	218 (54.5)
Transfusion			
Yes	33	18 (4.5)	15 (3.8)
No	367	47 (11.8)	320 (80)
Surgery			
Yes	150	29 (7.3)	121 (30.3)
No	250	32 (8.0)	218 (54.5)
Circumcision			
Yes	152	7 (1.8)	145 (36.3)
No	248	18 (4.5)	230 (57.5)
Alcohol Consumption			
Yes	121	16 (40)	105 (26.3)
No	279	37 (9.3)	242 (60.5)
Multiple Sex			
Yes	67	39 (9.8)	28 (4.8)
No	333	34 (8.5)	299 (89.8)

Table 4 Distribution of HBV Based on Age Group

Age group	**Pos (%)**	**Neg (%)**	**No tested**
0 – 10	8 (2.0)	19 (4.8)	27
11- 20	11 (2.8)	46 (11.5)	57
21 – 30	15 (3.8)	70 (17.5)	85

31 – 40	12	(3.0)	66	(16.5)	78
41 – 50	10	(2.5)	59	(14.8)	69
51 – 60	9	(2.3)	37	(9.3)	46
61 - above	4	(1.0)	34	(8.5)	38
					400
Total	69	(17.3)	331	(82.8)	

Data Analysis Output

Table 5: Case Processing Summary

	Cases					
	Valid		**Missing**		**Total**	
	N	Percent	N	Percent	N	Percent
Occupation * Status	10	100.0%	0	.0%	10	100.0%

Table 6: Occupation * Status Crosstabulation

Count

		Status		
		Negative	**Positive**	**Total**
Occupation	Civil Servants	1	1	2
	Farmers	1	1	2
	House Wives	1	1	2
	Schooling	1	1	2
	Traders	1	1	2
Total		5	5	10

Table 7: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.000[a]	4	1.000
Likelihood Ratio	.000	4	1.000
N of Valid Cases	10		

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is 1.00.

Table 8 : **Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Sex * Status	4	100.0%	0	.0%	4	100.0%

Table 9: Sex * Status Crosstabulation

Count

		Status		Total
		Negative	Positive	
Sex	Female	1	1	2
	Male	1	1	2
Total		2	2	4

Table 10: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[a]	1	1.000		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.000	1	1.000		
Fisher's Exact Test				1.000	.833
N of Valid Cases[b]	4				

a. 4 cells (100.0%) have expected count less than 5. The minimum expected count is 1.00.

b. Computed only for a 2x2 table

Table 11: Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Risk Factor * Status & Response	24	100.0%	0	.0%	24	100.0%

Table 12: Risk Factor * Status & Response Crosstabulation

Count

		Status & Response				Total
		Negative (n)	Negative (y)	Positive (n)	Positive (y)	
Risk Factor	Alcohol consumption	1	1	1	1	4
	Circumcision	1	1	1	1	4

	Multiple Sex	1	1	1	1	4
	Surgery	1	1	1	1	4
	Transfusion	1	1	1	1	4
	Unsterilised & Sharp Obj	1	1	1	1	4
Total		6	6	6	6	24

Table 13: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.000[a]	15	1.000
Likelihood Ratio	.000	15	1.000
N of Valid Cases	24		

a. 24 cells (100.0%) have expected count less than 5. The minimum expected count is 1.00.

Interpretation of Results

Chi-square values = 0.000[a] in all the tables, but irrespective of one's occupation, sex and risk factors that may involve, one has equal chance of contacting HBV since Asymp. Sig = 1.000 which is greater than α value = 0.01.

Discussion

Though there was high prevalence rate of HBsAg in the early ages but irrespective of occupation, risk factors and sex distribution, they are not statistically significant since the Asymp. Sig. value 1.000 is greater than α value 0.01.

Nigeria and Bangladesh have scarce information on hepatitis B infections that will support an effective intervention program; however, there is emerging evidence of increasing prevalence of hepatitis B amongst age

11 – 40. An indication that immunization is highly necessary in the local government urgently.

Taiwan has also greatly reduced HBV infection rate through its vaccination programme taking into account the mode of transmission of HBV, the healthcare infrastructure to deliver vaccination. In addition, the social – economic and political factors in the individual country must be determined. This study also showed that

male sex was an important risk factor in the rural areas. Similar study in Italy provided the template for routine (epidemic programme immunization) EPI implementation introducing hepatitis B in a cost effective manner and the global assessment of hepatitis B immunization has shown the reduction of the infection. In Lucknow, India, the universal immunization reduced the HBV carrier rate by 71%. Ayoola, A.E, Tobaigy, M.S, Gadour, M.O, Ahmad, B.S, Hamza, M.K, Ageel, A.M (2003) in their study between 1995 and 1998 showed a decline in the prevalence of hepatitis B particularly amongst children. This was associated to the effect of inclusion of Hep B vaccine in the routine schedule of immunization. Also in the report on the global overview of Hepatitis B infant and adolescent immunization programmes, Vryheid, R.E, Kane, M.A, Muller, N, Schatz, G.C, Bezabeh, S. (2000) reported that adopting universal immunization strategies have greatly reduced incidence and prevalence, and are cost effective for many countries, although, some have difficulties in affording the vaccines.

Conclusion

This research work revealed that the overall sero-positivity of hepatitis B surface antigen (HBsAg) based on age group was 17.3%. The prevalence was found to increase with age, occupation, other risk factors and sex distributions were not statistically significant.

Recommendation

This work revealed that the high prevalence of HBsAg in the early ages provides evidence for an urgent mass immunization in the local government. Additionally, it is imperative for everyone in the Local Governmnet to go for the hepatitis B test.

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