

## POSITIVITY OF SUPERFICIAL ANTIGENE OF HEPATITIS B (HBsAg) IN ALBANIA, REGION OF GJIROKASTER

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### SUMMARY

Hepatitis still remains a big problem in Albania. Carriers of hepatitis B surface antigen HbsAg are considered to be chronic carriers of HBV and are the main reservoir for the infection. In Albania the vaccine against hepatitis B has been introduced in the calendar of vaccination in the last 15 years. But the risk of the development of chronic hepatitis is still of a high level. In this study, 952 blood donors have been examined during the period January 2006 until December 2008, in the regional hospital "Omer Nishani" Gjirokastër. Results showed that 13 % of the donors are HBsAg positive. These results indicate that positivity of antigen HBsAg in the blood donors is of high level so the performance of more detailed serologic tests for the sure determining of the presence of antigen HBsAg, is indispensable.

**Key words:** hepatitis B, HBsAg, donor, carrier, vaccine.

### INTRODUCTION

The virus of hepatitis B is a DNA virus which has the surface antigen HBsAg as a main component, whereas the inner part has the Hepatitis B core antigen HBCAg and the nonstructural Hepatitis B "e" antigen HBeAg.

#### Picture A - Structure of hepatitis B virus

The period of incubation is 45-160 days. The disease lasts 6-8 weeks. The symptoms are miscellaneous starting from asymptomatic cases to the cases of nausea, vomit, weakness, and a number of the patients, almost 25 % show jaundice.

The most dangerous complication of the presence of hepatitis B virus in the human organism is the fulminate hepatitis. Another complication is chronic hepatitis which might end up to cirrhosis and primary

carcinoma of liver cells and glomerulonephritis membranoproliferative.

It has been proved that one of the most important factors in determining the further development of hepatitis B is the age of the person at the infection moment. When the infection with hepatitis B virus happens during the first year of life through vertical transmission mother-baby, or early horizontal transmission (which is a frequent way of transmission in Mediterranean countries), then acute form of hepatitis B develops in almost 90 % of the cases, in an asymptomatic form and almost all of the children become chronic carriers of Hepatitis B surface antigen HBsAg.

When the infection happens later the number of chronic carriers reduces in a great scale, approximately 1 for every 10 infected people. As regards the gender, males become chronic carriers three times more than females. This fact is supposed to be related with the weak "recognition" in them.

The ways of virus transmission are; parental (blood-transfusions, non-sterilized syringes etc.), vertical (from mother to baby during birth), sexual, indirect parental (through saliva when there are small mouth mucosa ulcers)

Albania is included in the hyper-endemic countries. The prevalence of hepatitis B surface antigen HBsAg in the healthy population has been 18 % (Hepatology SHBLU), whereas the percentage of the positivity of hepatitis B surface antigen HBsAg in the blood donors in Regional Hospital "Omer Nishani" of Gjirokaster from January to December 2008 was 13 %. This is a high percentage which indicates a serious danger for the population.

**MATERIAL AND METHODS**

The study has been carried out for a 3-year period of time, January 2006 - December 2008. 952 blood donors have been examined in the regional hospital “Omer Nishani” in Gjirokastrë, and 125 individuals have resulted as positive for the hepatitis B surface antigen HBsAg. They have been excluded from the process of blood donating. The determination of hepatitis B surface antigen HBsAg is carried out by the method of immunochromatography with instant samples.

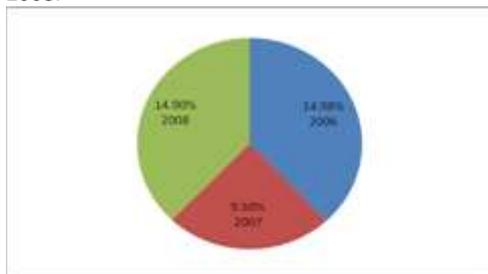
**RESULTS AND DISCUSSIONS**

From 952 blood donors of the age 20-60, 125 individuals or 13% of them resulted hepatitis B surface antigen HBsAg positive. Positivity of antigen HBsAg, in the respective years is presented in Table 1.

Year	Examined	Nr.of ind. HBsAg (+)	Percentage
2006	347	52	15 %
2007	324	31	10 %
2008	281	42	15 %
Total	952	125	13 %

**Table 1.** Positivity of antigen HBsAg

It results that in 2006, 15% of the blood donors have been found HBsAg positive, in 2007, 10%, and 15% in 2008.



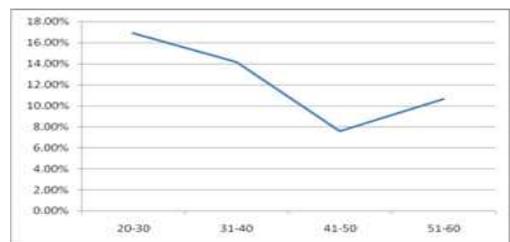
**Graph 1.** Presentation of positivity HBsAg

In Table 2 you can see the data on the positivity of hepatitis B surface antigen HBsAg for individuals in different Age –Groups. The numbers in the table show that 17% of the identified donors as hepatitis B surface antigen HBsAg positive, belong to 20 – 30 years of Age-Group, 14%, in the 31 – 40 years of age- group, 8 % in the 41 – 50 years of age- group, and 11% in the 51 -60 years of age- group.

Such a frequency of hepatitis B surface antigen HBsAg in these age groups is identified due to their lack of vaccination, since in Albania the obligatory vaccination against Hepatitis B started on July 1994.

Age-Groups	Examined	HBsAg positive	Percentage
20-30 years	335	60	17 %
31-40 years	233	33	14 %
41-50 years	290	22	8 %
51-60 years	94	10	11 %

**Table 2.** Positivity of antigen HBsAg for different age groups

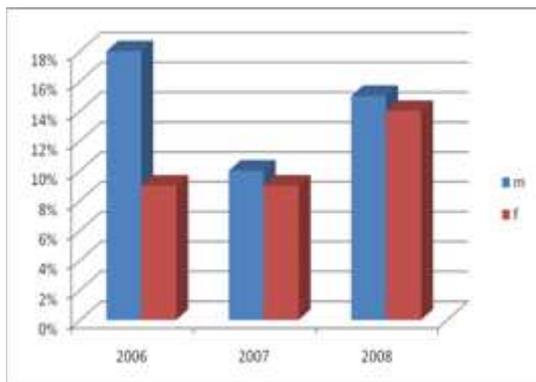


**Graph 2.** Positivity hepatitis B surface antigene HBsAg graphically presented according to Age-Groups

Data about the positivity of hepatitis B surface antigen HBsAg according to gender are shown in Table 3. The positivity of hepatitis B surface antigen HBsAg in males is 14% while in females it is 11%. According to the years the data are as follows, 2006, 18% of males and 9 % of the females are HBsAg positive, 2007, 10% of males and 9 % of the females are HBsAg positive and in 2008, 15% of males and 14% of the females are HBsAg positive.

Year	Males Examined	Males HBsAg (+)	Males %	Females Examined	Females HBsAg (+)	Females %
2006	226	41	18	121	11	9
2007	207	20	10	117	11	9
2008	189	29	15	92	13	14
2006-2008	622	90	14	330	35	11

**Table 3.** Positivity of antigen HBsAg according to gender



**Graph 3.** Presentation of positivity of hepatitis B surface antigen HBsAg in females and males according to these years:

### CONCLUSIONS AND RECOMMENDATIONS

The results of this study show that the positivity of hepatitis B surface antigen HBsAg in the region of Gjirokastër is 13%. This is a great danger for the distribution of the infection among the population. The most infected Age-Group is the 20-30 group, which represents the most active and most exposed people to the infection. Males tend to be more infected than females. The individuals included in this study are non-vaccinated against HBV.

In order to avoid the infection of the population with hepatitis B and its risks we recommend:

- Make the population aware to be examined for the presence of HBsAg.
- Individuals who are not infected with HBsAg should be vaccinated.
- Individuals who are infected with HBsAg should be careful to protect the surrounding people from the infection, in their families and their community.
- Individuals who are infected with HBsAg should make regular medical check-ups to avoid possible complications of the disease.
- The people who are in close contact with individuals infected with HBsAg must be vaccinated. Here are included the medical personnel, family members of the infected individuals etc.
- In the case of mothers carrying HBsAg, the intramuscular injection of Immunoglobuline of Hepatitis B (IgG) is recommended for the new born babies immediately after their birth.

### LITERATURE

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