

## The Study of ABO Groups and Rh Factor in Active and Non-active Carriers of Hepatitis B Virus

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During past eight decades, many studies have been performed to determine relationship between infectious diseases and blood groups. Interaction of microorganisms and RBC membrane is probably because of antigenic similarity, adherence through specific receptors or demodulation of antibody response <sup>(1)</sup>.

The first known relationship between blood groups and infectious diseases was seen in *Plasmodium vivax*. It is believed that sensitivity to HIV infection is related to blood groups and Rh factor <sup>(2)</sup>.

Hepatitis is a general word which caused by many factors such as DNA virus named HBV (hepatitis B virus). Several serologic determinants [eg. Glycoprotein surface antigen (HBsAg), viral peptide antigen (HBeAg), antibody against viral nucleoprotein (HBcAb)] and PCR lead to recognition of HBV <sup>(3)</sup>.

A number of individuals with chronic infection (presence of HBsAg) are divided to active and non-active groups. All cases are positive in HBcAb and negative in HBsAb. Active cases are recognized by detection of HBeAg and HBV-DNA, some clinical symptoms and elevated laboratory tests (ALT and AST) <sup>(4)</sup>.

This study was performed based on presence of ABO and Rh antigens on other cells <sup>(5)</sup> which could be used as receptors for viruses.

All individuals infected with HBV in the past or present time who were referred to a clinic were enrolled to this study. Fifty-five patients (10 female and 45 male) were active and 182 (64 female and 118 male) were non-active out of 237 person with HBsAg.

The blood samples were collected and ABO and Rh typing was done by *Blood Filtration and*

*Investigation* Co (Palayesh and Pajohesh of blood company). Lot. No: MAbA09 antiserum.

Data were analyzed by SPSS software using  $\chi^2$  test.

This study showed that active individuals have A (18.2%), B (18.2%), O (58.2%), AB (5.4%), Rh positive (96.4%) and Rh negative (3.6%) and non-active individuals have A (26.9%), B (25.3%), O (41.2%), AB (6.6%), Rh positive (98.4%) and Rh negative (1.6%) (Table 1).

These findings revealed that there is no significant difference between blood group ( $p=0.145$ ) or Rh factor ( $p=0.329$ ) and active or non-active form.

This finding was in agreement with others, for example Maria Rios showed that there is a relationship between parvovirus B19 and P antigen and also between *Hemophilus influenza* and Anwy antigen <sup>(2)</sup>. Another study proved that the adherence of Norwalk virus is more deficiently in low concentration of H1 epitope <sup>(6)</sup>.

However, to the best of author's knowledge, there is low amount of information about relationship between HBV and blood groups. Thus, it seems more studies should be accomplished in this field. Meanwhile, it is necessary to examine the patients

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**Table 1.** Distribution of blood groups and Rh in HBsAg positive patients

Blood group	Active		Non-active		Total	
	Number	Percent	Number	Percent	Number	Percent
A	10	18.2	49	26/9	59	24.9
B	10	18.2	46	25.3	56	23.6
AB	3	5.4	12	6.6	15	6.3
O	32	58.2	75	41.2	107	45.2
Rh+	53	96.4	179	98.4	232	97.9
Rh-	2	3.6	3	1.6	5	2.1
Total	55	100	182	100	237	100

for secretory forms and other blood group systems in active carriers.

## References

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## Corrigendum

The letter to editor by Harunor Rashid and Shuja Shafi titled "Blood Borne Hepatitis at Hajj" was published in the previous issue of Hepatitis Monthly (Hep Mon 2006; 6 (2): 87-88). Unfortunately there are some inadvertent typing errors in the first sentence of the letter as well as in the degree of the correspondence. Hereby, offering our apology to the authors and readers, the correction is presented. In addition, the corrected version of the letter is available at [www.hepmon.ir](http://www.hepmon.ir)

**The first sentence:** An estimated 2.5 million Muslims from all over the world are expected to converge in Mecca, Saudi Arabia by the end of this December for Hajj pilgrimage.

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