

The Cognitive Degree and Its Related Factors about Positive Hepatitis and Hepatosis of 20s Adults

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To investigate the cognitive degree about hepatitis and hepatosis, 916 subjects are examined with query and hepatotitis B, C, E test as well as s-AST and s-ALT as liver function test. Based on results, there are 4.9% of positive hepatitis and 8.9% of hepatosis and 13.8% of liver disorder. Among positive hepatitis, there are 93.3% of type B, 42.2% of type E and 6.7% of type C, respectively. From 45% of positive hepatitis B, they carry hepatitis B and E together. The cognitive degree about positive hepatitis is 64.4%, hepatosis 8.6%. The knowledge degree from cognitive group is higher than that of noncognitive group but there is no difference from hepatosis between two groups ($p < 0.001$). The cognitive degree of liver disorder depends on academic background ($p < 0.001$), mother's academic background ($p < 0.001$), job ($p < 0.05$) and family's income ($p < 0.001$), showing significant difference. In summary, hepatitis carrier aware quite well about liver disorder but very low from hepatosis. Accordingly, the plan to increase a cognitive degree and continuous education as well as policy support to minimize spread of disease and to protect not to be worsen disease will be needed.

Keywords: Hepatitis, Hepatosis, Cognitive group, Noncognitive group

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Received: October 15, 2013
Revised: November 20, 2013
Accepted: November 26, 2013

Introduction

Hepatitis virus is global disease, and especially HB viral hepatitis is one of serious diseases with 350 million patients. The HBsAg positive rate of Hepatitis B shows 5~10% in the Asian countries and its rate is now decreasing after the introduction of vaccine but 3.8~6% was reported in 2005 (Merican *et al.*, 2000; You *et al.*, 2000; Shin, 2011).

There are six types (A~E, G) of viral hepatitis and hepatitis cause by various after effects and finally patients come to death due to progressive hepatocirrhosis and hepatoma. Hepatocirrhosis cases caused by chronic hepatitis B developed hepatocellular carcinoma by 3~10% and by liver cancer was 2~5% (Chu, 2000; Marcellin *et al.*, 2005; Mustafa *et al.*, 2013).

Interferon as a therapy for hepatitis was reported but there is no special treatment developed yet. It is important for first

prevention of hepatitis through the personal management of towels, dishes, toothbrush and razor and vaccination must be settled against hepatitis spread (Agdamag *et al.*, 2010; Zhong *et al.*, 2011; Scotto *et al.*, 2013).

To stop the spread and transmission of hepatitis and hepatic disease, cognition about disease is an important factor to patients. In this study, hepatitis B, C and E which is prevalent in Asia countries are chosen. The clinical results from liver function test to necrosis of acute liver tissue are so various that s-AST and s-ALT as liver function test (LFT) are included. The person who are abnormal on liver function test with HBsAg- are classified as abnormal (Merican *et al.*, 2000).

This study is investigated to prevent the spread of hepatitis thru cognition of the person himself. Various parameters of recognizable factors such as academic background of him/herself and mother, job, monthly salary are used in this study.

Materials and Methods

1. Subjects

The subjects newly joined the army with age 21 ~23 male young peoples are investigated. Total subjects are 916, 384 from Jeonbuk, 273 from Suwon, and 259 from Daejeon, respectively. The hepatitis viral marker test and liver function test are performed with blood samples. Simultaneously, to know the cognition and its related factors of hepatitis and liver function test, 126 as investigation group and health 300 peoples as control group are randomly surveyed and analyzed.

2. Methods

The hepatitis and liver function test are performed using collected blood samples and classified with dyshepatia.

1) Biochemical and Immunological tests

The serum from collected blood sample are used. The liver function tests s-AST and s-ALT are applied on AU-560 (Olympus, Japan), hepatitis B-type test with EIA are performed on BEP-3 (Behring, Germany) and C-type as immunoblot on FAME (Hamilton, U.S.A) and E-type as an Immuno chromatograph on One step card test (Bionike, U.S.A).

2) Cognitive test

The questionnaire and medical examination are confirmed about hepatitis and liver function test. Prior to investigation, writing skill was delivered and investigated with self recording type on each question. Medical examination was surveyed thru personal query. With medical examination and questionnaire, cognitive group and noncognitive group were separated on hepatosis and contraction of hepatitis.

3) Knowledge degree of a disease

To evaluate the knowledge degree about hepatitis and liver function, questionnaire item consists of 7 and 6 questions, respectively. Cronbach's α on internal reliability on these questions are 0.6681 for hepatitis, 0.6377 for liver function and totally 0.6685. All research subjects were educated about writing skill and record each question at the same location.

3. Statistical analysis

Cross correlation analysis between special characteristics and knowledge degree of a disease and X-verification were carry out by SPSS (Statistical Package for the Social Sciences). To evaluate the knowledge degree of each disease by cognitive degree of hepatosis and positive hepatitis person, t-verification was performed.

Results

1. General features of survey subjects

From general features of survey subjects, but not shown significant of results on age, whether religion have or not, residential district, parents presence, and parents' job.

However, the significant results are shown from personal academic background ($p < 0.001$), mother's academic background ($p < 0.001$), personal job ($p < 0.05$) and family's salary ($p < 0.001$) (Table 1).

Table 1. General characteristics of study subjects

Characteristics/Group	Cognitive	Noncognitive	Total
Age			
21	3	11	14
22	27	66	93
23	6	13	19
<i>p</i> -value			0.5062
Occupation			
Have	10	42	52
None	2	14	16
Student	24	34	58
<i>p</i> -value			0.0338
Family income month (won)			
Less than 2,000,000	3	19	22
2,000,000 ~ 4,000,000	15	56	71
Over 4,000,000	18	15	33
<i>p</i> -value			0.0005
Education level			
Below high school	11	54	65
Above college	25	36	61
<i>p</i> -value			0.0003
Father's education			
Below high school	15	43	58
Above college	21	47	68
<i>p</i> -value			0.2763
Mother's education			
Below high school	16	51	67
Above college	20	39	59
<i>p</i> -value			0.0001
Total	36	90	126

2. Comparison of difference in disorder cognition and blood test results

The positive hepatitis was 45 persons (45/916, 4.9%) from hepatitis B, C, E test and liver function test as s-AST and s-ALT and liver function disorder was 81 persons (8.9%). These 126 persons (126/916, 13.8%) are suspected with liver disorder. Among positive hepatitis persons, cognitive one about hepatitis carrying is 29 (64.4%), while only 8.6% persons who knows their disorder among liver function disorder persons. This results show the significance of results in the light of 0.1% significant level (Table 2).

3. Comparison about knowledge of a disease according to cognitive degree on hepatitis and its positive

The mean on knowledge degree of hepatitis shows 1.70 for cognitive group and 1.57 for noncognitive group. There is statically no significance of results because cognitive group has little higher from the knowledge of hepatitis than noncognitive group.

The difference on knowledge degree of liver function from two groups shows 1.76 for cognitive group and 1.61 for noncognitive group. The different t-value from two groups is 1.07 on significance level of 5%, which means statically significance of results from two groups (Table 3).

Table 2. Difference in cognition for Viral hepatitis and abnormal LFT in abnormal results showing group test

Category	No of blood tests	Abnormal result	Cognitive
Viral hepatitis	916	45	29
Abnormal liver function	916	81	7
p-value			0.0001
Total	916	126	36

Table 3. Comparison of knowledge scores on hepatitis between cognitive group and noncognitive group

Classification	Cognitive (n=29)	Noncognitive (n=16)	p-value
Knowledge about hepatitis	1.70±0.28	1.57±0.50	0.2502
Knowledge about liver function	1.76±0.32	1.61±0.38	0.0424
Total	3.56±0.23	3.37±0.38	0.1038

4. Comparison of disorder knowledge by knowledge degree from hepatitis persons

The knowledge degree about hepatitis of hepatitis persons shows 1.67 for cognitive group and 1.60 for noncognitive group. There is statically no significance of results because noncognitive group has little higher from the knowledge of hepatitis than cognitive group. The total knowledge degree of hepatitis and liver disorder from two groups shows 3.53 for cognitive group and 3.47 for noncognitive group. However, the results are not statically significant for little higher from cognitive group (Table 4).

Discussion

The viral hepatitis outbreaks around the globe but the positive rate of hepatitis B from Korea is 3.8~6.0%, which is somewhat higher when it compares with 0.1~0.4% for USA and France, 1.5% for Japan. This relative high prevalence, acute and chronic liver disorder have been aware of national health (Merican *et al.*, 2000; You *et al.*, 2000).

Various epidemiological, clinical, immunological research about hepatitis and liver disorder are reported and Korean hepatitis vaccine development in 1983 can be used for 30 years, Due to vaccine development, the infection rate could be reduced from 5.0~12.0% to 3.8~6.0% in 2000 (Kim, 2001; Shin, 2011).

The infection route of hepatitis B are included transmission by syringe used in transfusion of blood, saliva, sexual contact, organs transplant and blood dialysis, oral, skin scar, tattoo, dental and medical device and mother's placenta (Chu, 2000).

However, the health carrier have no observable symptoms so they do not recognize as their carrying one. They involuntarily can be infected as a source of infection onto family and colleagues (Marcellin *et al.*, 2005). Therefore, the

Table 4. Comparison of knowledge scores on abnormal liver function between cognitive group and noncognitive group

Classification	Cognitive (n=7)	Noncognitive (n=74)	p-value
Knowledge about hepatitis	1.67±0.32	1.60±0.29	0.4771
Knowledge about liver function	1.60±0.25	1.60±0.31	0.9981
Total	3.53±0.26	3.47±0.23	0.5038

knowledge and early detection of hepatitis carrier are very important for health improvement of family and society as well as person, requiring much effort.

The health action of human is decided by cognition. Therefore, in this study, to evaluate the cognition of liver disorder, two times of medical examination and survey are carried out. cognition about liver disorder is decided when they reply "yes" once from three opportunities.

Based on the blood test results of 916 persons, positive hepatitis and hepatosis persons are separated and investigated. To know the related factors which can be influenced on the cognition of hepatosis, the independent parameters (variable) got from analysis are investigated.

Comparing with independent parameters between recognitive and nonrecognitive group, academic background of mother, family's salary, personal academic background and job are statistical significance of results. The academic background of mother from recognitive group is much higher ($p > 0.001$) than that of nonrecognitive group but father's academic background is statically no significance of results.

This results suggest that the higher mother's academic background, the better health interest of family and children, which means mother's role plays a large role in children's health and nurture. This will be much helpful on early detection and cognition about disorder.

The family's income is higher from recognitive group ($p > 0.001$) than that of nonrecognitive group. This is judged that the higher social economy level, the higher various interests and prevention on vaccination and serum test of hepatitis. From the point of view on the time and cost from various tests for vaccination and cognition of disorder as preventive doings, The family's income is importantly considered.

The academic background and job from recognitive group are higher ($p > 0.001$) than that of nonrecognitive group. The knowledge of disorder from employment and under education group before enrollment group shows high, comparing with unemployment. With academic background, the cognitive degree of disease shows high from being in college high school graduate, which affects on cognitive influence thru school health education, getting information of health from social education and increasing contact

opportunity with friends and colleagues.

Among positive hepatitis peoples, the knowledge of liver disorder shows high from recognitive group ($p > 0.05$). This results suggest that increasing concern of information from hospitals, leaflet, promotion materials, broadcasting can be brought to knowledge degree of hepatitis and liver concern as well as continuous personal health management.

With the results of this study, different type of carrier and liver function test among positive hepatitis persons are as follows. Viral hepatitis can be divided into A, B, C, D, E, G and the blood test with blood type B, C, E shows 45 persons as positive hepatitis 42 for type B, 3 for type C and 19 for type E. From 19 persons of type E, they shows all positive type B, which has both of type B and E carrier and is 45%.

According to a published paper from Greek, among acute hepatitis A and B patients, 7.6% has both type B and E carrier was reported. From northern area of Ethiopia's soldiers, among acute type E hepatitis patients, 20% of type E shows positive was reported. Under age 13 in India, among liver disorder patients, 20% has both has 13% both type B and E carrier was reported. Among positive hepatitis B of Korean enlistees, 45% of positive hepatitis E is shown, which is very highly figure (Tsega *et al.*, 1991; Mina *et al.*, 1995; De Tan *et al.*, 1996; Arora *et al.*, 1996).

From 19 persons who show both hepatitis B and E, hepatosis represents 4 persons, hepatosis from positive only hepatitis B is 5 persons (21.7%), hepatosis from positive only hepatitis C is 1 person (33.3%). The liver function disorder from 45 hepatitis carriers 10 persons (22.2%) and suspected acute hepatitis from hepatosis is 2 persons with s-AST and s-ALT for 153, 302 I.U. and 162, 477I.U., respectively.

81 persons (4.9% from 916 persons) who represent hepatosis is somewhat low, comparing with positive rate 3.8~6% for Korean hepatitis B. This is similar level as positive rate 5~6% for blood donor.

In this study, total 13.8% represents hepatitis and liver disorder although high academic background and young man who passed the medical checkup for enlistment are selected and the cognitive degree about disorder show 28.6% low. Therefore, the plan to increase a cognitive degree and continuous education as well as policy support will be required acutely.

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