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RISK FACTORS AND FREQUENCY OF HEPATITIS B & C VIRUSES AT LIAQUAT UNIVERSITY HOSPITAL JAMSHORO SINDH PAKISTAN

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ABSTRACT:

BACKGROUND: *Worldwide, hepatitis B & C are very common co-morbid viral diseases. Chronic hepatitis B affects >400 million peoples and that of chronic hepatitis C affects about 170 million peoples all over the world.*

METHODOLOGY: *All the cases admitted at Medical wards at Liaquat University Hosptial Jamshoro/Hyderabad from December 2008 to November 2009, suffering from any medical disorder were screened for HBsAg and HCV anti bodies along with other necessary investigations. During mentioned period of one year 5430 patients of various ages (b/w 20-60 years) and of both sexes were admitted. The clinical data was obtained from hospital admission record and reviewed retrospectively. Among these HBsAg (Eliza) were 133 (2.44 %) and that of HCV were 481 (8.85%). Whereas together HBsAg and HCV anti bodies (Eliza) were in 42 (0.77%).*

RESULTS: *Total number of HBV +ve (M/F) were 133.Out of them males positive for HBV (Eliza) were 71 (53.38%) and that of females were 62 (46.61%).While Total number of HCV +ve (M/F) were 481, out of them males were 245 (50.93%) and that of females were 236 (49.06%), where as total number of M/F positive for both HBV & HCV were 42.Out of them Males were 18 (42.85) and that of Females were 24 (57.14). The frequency of risk factors shows that all the cases of HBsAg & HCV, both male/female, with history of Injections were 315 (48.01), 189 (28.81%) patients with History of Barber's shop shaving, patients with History of Surgical Interventions (M/F) were 91 (13.87%), where as History of Sexual Contacts were 35 (5.33%) and 26 (3.96%) were found with History of Blood Transfusion.*

Whereas the analysis of associations shows that the patients with Diabetes Mellitus were 297 (45.27%), Thyroid disorders were 30 (4.57%), Anxiety/Depression/Psychosis were 198 (30.18%) and that of Gall Stones were 131 (19.96%).

CONCLUSION: *Hepatitis C is more common than hepatitis B, probably due to awareness, earlier vaccination against hepatitis B virus. Males are more prone because of shaving at Barber's shop regularly. Associations with Diabetes Mellitus, Thyroid disorders, Gall Stones and Anxiety Neurosis/Depression/Psychosis are autoimmune processes which are variable in different individuals.*

KEY WORDS: Hepatitis B & C, Risk Factors, Associations.

INTRODUCTION:

Worldwide, hepatitis B & C are very common co-morbid viral diseases although, the mortality in acute hepatitis B is 0.1-1% and that of hepatitis C is rare.[1]

Chronic hepatitis (chronic necroinflammation of the liver of more than 3-6 months duration with raised aminotransferases level) occurs in 1-2% from acute hepatitis B infection in adults and that of neonates is 90% in immunocompitent patients. While acute hepatitis C causes chronic hepatitis in 80% of patients [2].

In chronic hepatitis B, cirrhosis occurs in 40% and that of in hepatitis C up to 30%. Hepatocellular carcinoma (HCC) is associated with cirrhosis in 80% of cases and incidence increases in Non-alcohol fatty liver disease cirrhosis and insulin resistance syndrome. [4-7]

Hepatitis B in Asia & Africa and hepatitis C in Japan & Western Countries, are major risk factors for HCC [1].

Chronic hepatitis B affects >400 million peoples and that of chronic hepatitis C affects about 170 million peoples all over the world. [8-12]

Worldwide, risk factors for spread of hepatitis B & C are direct sexual contact, blood and its products transfusion, re-use of needles, shaving at barber's shop, use of unsterilized instruments for minor or major surgeries, use of unsterilized endoscopes, cystoscopes and dialysis.

MATERIAL & METHOD:

All the patients admitted in Medical Wards at Liaquat University hospital due to any disorder from December 2008 to November 2009, were included in the study.

EXCLUSION CRITERIA:

All the patients who were already positive for hepatitis B & C were excluded from study.

INCLUSION ECRITERIA:

INSTRUMENTS:

All selected patients were examined clinically and details, including; History of sexual contact, Blood transfusion, Shaving at barber's shop, Operative histories, Vaccinations against Hepatitis B and associations like; Psychosis, Endocrine disorders (Diabetes Mellitus & Thyroid disorders), Gallstones, Vasculitis & Skin disorders (Sjogren's syndrome, Lichen Planus, Porphyria Cutanea Tarda), Mixed cryoglobulinemia, Membrano-proliferative glomerulonephritis, Lymphocytic sialadenitis, Idiopathic pulmonary fibrosis, monoclonal gamopathies and Lymphoma were recorded in a proforma [16].

All patients were subjected to the following investigations.

1. Complete Blood Counts (Mindray BC 2800).
2. HBsAg Non ELIZA (Acon, Acon Laboratories Inc. San Diego, USA).
3. HCV Anti bodies Non ELIZA (Acon, Acon Laboratories Inc. San Diego, USA).
4. HBsAg ELIZA (International Immuno-Diagnostics Foster city, USA).
5. HCV Anti bodies ELIZA (International Immuno-Diagnostics Foster city, USA).
6. LFTs.
7. P.T (Thromboplastin with Ca++, Bio Menieux Vitek, Inc. Hazelwood, USA).
8. Random Blood Sugar.
9. TSH (where ever required).

RESULTS:

During mentioned period of one year 5430 patients of various ages (b/w 20-60 years) and both sexes were admitted. Among these HBsAg (Non-Eliza) were found in 136 (2.50 %) and that of Eliza were 133 (2.44 %). While HCV anti bodies (Non-Eliza) was found in 491 (9.04 %) cases and that of

TABLE: I

Frequency of HBV & HCV

A: Non Eliza. = 5430	**Total number of patients**
1. Patients with HBV +ve	= 136(2.50%)
2. Patients with HCV +ve	= 491(9.04%)
3. Patients with both HBV & HCV +ve	= 43(0.79%)
B: Eliza. = 5430	**Total number of patients**
1. Patients with HBV +ve	= 133(2.44%)
2. Patients with HCV +ve	= 481(8.85%)
3. Patients with both HBV & HCV +ve	=42(0.77%)

TABLE: II

Frequency of Sex Ratio (M/F) in HBV & HCV on Eliza	
Total number of M/F patients positive for HBV	=133
1. Males with HBV +ve	= 71 = (53.38%)
2. Females with HBV +ve	= 62 = (46.61%)
Total number of M/F patients positive for HCV	= 481
1. Males with HCV +ve	= 245 = (50.93%)
2. Females with HCV +ve	= 236 = (49.06%)
Total No. of M/F positive for both HBV & HCV	= 422
1. Males with HBV & HCV +ve	= 18 = (42.85%)
2. Females with HBV & HCV +ve	= 24 = (57.14%)

TABLE: III

Frequency of Risk Factors	
Total NO: of cases (M/F) both +ve for HBV/HCV	= 656
1. Patients (M/F with either HBV &/or HCV) With H/O Injections	= 315 = 48.01%
2. Patients (M/F with either HBV &/or HCV) With H/O Barber's shop shaving.	= 189 = 28.81%
3. Patients (M/F with either HBV &/or HCV With H/O Surgical intervention.	= 91 = 13.87%
4. Patients (M/F with either HBV &/or HCV) With H/O Sexual contact	= 35 = 5.33%
5. Patients (M/F with either HBV &/or HCV) With H/O blood transfusion.	= 26 = 3.96%

TABLE: IV

Frequency of Associations	
Total NO: of cases (M/F) both +ve for HBV/HCV	= 656
1. Patients with H/O Diabetes (M/F)	= 297 = 45.27%
2. Patients with H/O Thyroid Disorders (M/F)	= 30 = 4.57%
3. Patients with H/O Anxiety/Depression (M/F	= 198 = 30.18%
4. Patients with H/O Gall Stones (M/F)	= 131 =19.96%

Eliza was 481 (8.85%). Whereas together HBsAg and HCV anti bodies (Non-Eliza) were found in 43 (0.79%) cases and that of Eliza were in 42 (0.77%) respectively. (Table: I).

The above analysis shows that HCV is more frequent than HBV. Total number of HBV +ve (M/F) were 133. Out of them males positive for HBV on Eliza were 71 (53.38%) and that of females were 62 (46.61%). While Total number of HCV +ve (M/F) were 481, out of them males positive for HCV on Eliza were 245 (50.93%) and that of females were 236 (49.06%). Whereas total number of M/F positive for both HBV & HCV were 42. Out of them Males were 18 (42.85) and that of Females were 24 (57.14%).

Among the Sex Ratio Males are affected more than Females (Table: II). The frequency of Risk Factors shows that all the cases of HBsAg & HCV, both male/female, with H/O Injections were 315 (48.01), with H/O Barber's shop shaving were 189 (28.81%), with H/O Surgical Interventions (M/F) were 91 (13.87%), with H/O Sexual Contacts were 35 (5.33%) and that of H/O Blood Transformations were 26 (3.96%), respectively.

Above figure shows significant difference b/w Risk factors i.e.; Barber's shop shaving & Surgical Interventions are frequent factors for contribution of HBV or HCV infection (Table: III).

Whereas the analysis of Associations shows that the patients with H/O Diabetes Mellitus were 297 (45.27%), with Thyroid disorders were 30 (4.57%), with Anxiety/Depression were 198 (30.18%) and that of Gall Stones were 131 (19.96%) (Table: iv).

Above figure shows that Diabetes Mellitus, Psychiatric Disorders and Gall Stones are significantly associated with HBV &/ HCV.

DISCUSSION:

Hepatitis B & C are very common co-morbid viral diseases worldwide. In our study on Eliza HBsAg was found in 133 (2.44%) and HCV Anti bodies were found in 481 (8.85%) with male predominance in hospitalized patients. Our study results match with other studies conducted in various institutions in Pakistan/foreign countries eg: Chaudhary IA etal [4], at Fauji Foundation Hospital Rawalpindi, among blood donors, found the frequency of HBV 2.45% and HCV 2.52% with predominance of male sex, here HCV results are higher in our study but it matches with the HCV results of Taguchi et al , 7.1% and HBV (1.8%), who studied an epidemiology of hepatitis B & C in 34336 patients operated at Hiroshima Prefectural Hospital during the period from 1993 – 2000.[5]

Another study by Chaudhary IA etal [6], found the frequency of HBV & HCV during pre-surgical screening of the patients as 2.11% and 11.26% respectively. Altaf C etal [6], studied the frequency of HBV & HCV among healthy adult males in Central Sindh as 7.3% for HBV & 5.2% for HCV. Nurgalieva ZZ etal [8], in their study at Kazakhstan found the frequency of HBV (3.8%) & that of HCV (3.2%). Tassaduqe KM etal [9], in his study found the prevalence of HBV (7.3%) & of HCV (5.2%) and Masood Z etal [10], found HBV (6.5%) & HCV (11.3%) with Male predominance.

Another study conducted at Southern Punjab by Ali IM etal [13], showing frequency of HBV (5.9%) & that of HCV (2.7%), Sharif TB et al, [12] studied Seroprevalence among recruits, they found prevalence of HBV (2.8%) & that of HCV (3.4%).

Other study on recruits shows the frequency of HBV (2.8%) & of HCV (3.4%). Two other studies conducted at Central Punjab by Alam M etal [13] and Southern Punjab by Ali IM etal, have shown the frequency of HBV (4.86 & 5.9%) & that of HCV are (4.41% & 2.5%) respectively.

Other studies which match with our study results in regard of HBV & HCV are: Fayyaz M etal [14], at Bahawal Victoria Hospital (BVH) Bahawalpur found the frequency of HBV (2.69%) & that of HCV was (2.52%) along with Male predominance.

Other comparable studies at different cities of Pakistan and elsewhere for HBV are 02% at Karachi, 2.51% at Islamabad, 1.8% at Peshawar and that for HCV are either nearer or higher in frequency are at Rawalpindi (6.33%), Khan H etal [15] (4.5%), recently Raja NS etal [16], in their study of Epidemiology of HCV infection in Pakistan shows; 06% HCV prevalence with Male predominance.

CONCLUSION:

Hepatitis C is more common than hepatitis B, probably due to availability, awareness and earlier vaccination against hepatitis B virus. Males are more prone because of shaving at Barber's shop regularly. Associations with Diabetes Mellitus, Thyroid disorders, Gall Stones and Anxiety Neurosis/ Depression/Psychosis are autoimmune processes which are variable in different individuals. The frequency of hepatitis B & C and their risk factors can easily be restricted by arranging awareness, screening and vaccination programs by different Medias hence we can decrease mortality and morbidity globally.

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