

COMPARISON OF FREQUENCY OF HEPATITIS B AND HEPATITIS C IN PREGNANT WOMEN IN URBAN AND RURAL AREA OF DISTRICT SWAT

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Objectives: This retrospective analytical study was carried out to observe the frequency of Hepatitis B and Hepatitis C among the pregnant women of Swat. **Methods:** The study was carried out from January 2008 to December 2008. It was a retrospective study based on review of records of pregnant women admitted to Labour Room of Obstetrics/Gynaecology Unit, Saidu Teaching Hospital, Swat. Patients were screened for Hepatitis B and C by Immuno Chromatographic Technique (ICT) device. The findings were recorded on proforma and analysed. Those found positive on screening test were confirmed by ELISA. **Results:** Total number of patients screened was 5607. The frequency of Hepatitis B and C (Combined) was 223 (3.98%), out of which 77 (1.37%) were HBsAg positive, 141 (2.52%) were anti HCV positive and 5 (0.09%) were both HBsAg and anti HCV positive. The frequency of Hepatitis B amongst age groups 14–19, 20–29, 30–39 and 40–49 years were 2/77, 33/77, 40/77, and 2/77 respectively. The frequency of Hepatitis C amongst age groups 14–19, 20–29, 30–39 and 40–49 years was 4/141, 59/141, 67/141 and 11/141 respectively. The frequency of Hepatitis B and C in multigravida was 41/77, 67/141, in grand multigravida it was 20/77, 43/141 and in primigravida it was 16/77, 31/141 respectively. The frequency of Hepatitis B and Hepatitis C amongst urban and rural population was 32 (39.02%) and 50 (60.98%); and 40 (27.40%) and 106 (72.60%) respectively. The frequency of Hepatitis B and C (Combined) in urban, rural population were 72 (31.58 %) and 156 (68.15 %) respectively. **Conclusion:** HBsAg and HCV was common infections in pregnant women of Swat. Therefore, every pregnant woman undergoing delivery and/or any other surgical procedure must be screened for Hepatitis B and Hepatitis C.

Keywords: Screening, Hepatitis, Hepatitis B, Hepatitis C, HBsAg, HCV, Pregnancy, Swat

INTRODUCTION

Both Hepatitis B and Hepatitis C are amongst the leading causes of morbidity, mortality and serious public health problem worldwide as well as in Pakistan.¹ Screening for Hepatitis B and Hepatitis C is not doing routinely in majority of the hospitals of Pakistan. It is doing usually in patients with past history of jaundice or for some liver diseases. Precautions against Hepatitis B and Hepatitis C are taken only when a known positive case is being treated or operated.² Unfortunately majority of the patients do not present with jaundice and the carrier usually do not display the symptoms.³

Hepatitis B is the most common viral infection affecting more than 300 millions people worldwide.⁴ Over 20 millions people are infected annually with this virus globally and there are 350 millions chronic carrier of Hepatitis B virus (HBV).⁵

Hepatitis C prevalence, according to WHO estimates is 3% of the world population (200 million people).⁶ Almost 50% of all cases become chronic carriers at risk of liver cirrhosis and liver cancer.⁷ Pakistan is also facing a huge burden of the same disease. The prevalence among general public of HBV, HCV infection in Pakistan is 10%^{8,9} and 4–10% respectively.¹⁰ In pregnant women of Pakistan,

Hepatitis B and Hepatitis C virus infection are reported to be 2.5% and 6.7% respectively.^{11,12}

Since most of the carriers are asymptomatic, they pose a real threat to the surgeons, paramedical staff through self pricks and other patients who share the same surgical instruments.¹³

There is lack of routine serological screening prior to surgery, which is one of the factors responsible for increased transmission. The major risk factors include reuse of contaminated instruments and improperly screened blood products.¹³ Poor literacy, low socioeconomic status, poor hygienic condition has also implication in the prevalence of Hepatitis B and Hepatitis C.¹⁴ Keeping in view the dreadful complication of hepatitis, its high infectivity and in Pakistan we cannot afford to operate the patients without hepatitis screening. Being a vulnerable group, the pregnant women are likely to be more predisposed to these infections but only few studies are available on the subject.¹⁵ This study was carried out to discover the incidence of Hepatitis B, Hepatitis C in pregnant women admitted to Labour Room of Obstetric/Gynaecology ward for delivery and/or other surgical procedures in Saidu Teaching Hospital, Swat.

PATIENTS AND METHODS

It was a retrospective study conducted at Obstetric/Gynaecology ward of Saidu Teaching Hospital,

Physiology and Pathology Departments of Saidu Medical College, Swat from 1 January 2008 to 31 December 2008. A total of 5607 pregnant women were included in the study. Women having history of previous liver diseases, diabetes and pre-eclamptic toxemia were excluded from the study. All pregnant women 14–49 years of age, admitted to labour room of Obstetrics ward were screened for Hepatitis B and Hepatitis C. Rapid Immuno Chromatographic Techniques (ICT), for qualitative detection of surface antigen of Hepatitis B and antibodies for Hepatitis C were the screening techniques used. Those found positive on screening tools were confirmed by ELISA. All the information and findings were recorded on proforma. Data obtained were analysed using SPSS 10.0 and the results were expressed in percentages.

RESULTS

Total of 5607 subjects were screened. The frequency of Hepatitis B and C (Combined) was found to be 223/5607 (3.98%), out of which 77/5607 (1.37%) were HBsAg positive, 141/5607 (2.52%) were anti-HCV positive and 5/5607 (0.09%) were both anti-HCV and HBsAg positive.

The frequency of Hepatitis B and C was more in age group ranging between 30–39 years. The frequency of Hepatitis B amongst age group 14–19, 20–29, 30–39 and 40–49 years was 2/77 (2.60%), 33/77 (42.86%), 40/77 (51.94%) and 2/77 (2.60%) respectively.

The frequency of Hepatitis C amongst age group 14–19, 20–29, 30–39 and 40–49 years was 4/141 (2.84%), 59/141 (41.84%), 67/141 (47.52%) and 11/141 (7.80%) respectively. Five subjects were suffering from both Hepatitis B and C simultaneously. Two cases were in 20–29 years age group, 2 were in 30–39 years, and 1 was in 40–49 years age group (Table-1).

The frequency of Hepatitis B in primigravida, multigravida and grand multigravida was 16/77 (20.78%), 41/77 (53.25%) and 20/77 (25.97%) respectively.

The frequency of Hepatitis C in primigravida, multigravida and grand multigravida was 31/141 (21.99%), 67/141 (47.51%) and 43/141 (30.50%) respectively. Whereas frequency of both Hepatitis B and C combined in primigravida, multigravida and grand multigravida was 1/5 (20.0%), 2/5 (40.0%) and 2/5 (40.0%) respectively (Table-2).

The frequency of Hepatitis B amongst urban and rural population was 32/82 (39.02%) and 50/82 (60.98%) respectively. The frequency of Hepatitis C amongst urban and rural population was 40/146(27.40%) and 106/146 (72.60%) respectively. The frequency of Hepatitis B and Hepatitis C

combined amongst urban and rural population was 72/228 (31.58 %) and 156/228 (68.42 %) (Table-3).

Table-1: Frequency of HBsAg & Anti HCV in different age groups of the pregnant women

Age (Yr)	HBsAg	%	HCV	%	HCV & HBsAg	%
14–19	2	2.60	4	2.84	--	
20–29	33	42.86	59	41.84	2	40.0
30–39	40	51.94	67	41.52	2	40.0
40–49	2	2.60	11	7.80	1	20.0
Total	77	100	141	100%	5	100

Table-2: Frequency of HBsAg and Anti HCV in primigravida, Multi-gravida and Grand multi-gravida

Gravida	HBsAg		HCV		HCV & HBsAg	
	No.	%	No.	%	No.	%
Primigravida	16	20.78	31	21.99	1	20
Multigravida	41	53.25	31	21.99	1	20
Grandmultigravida	20	25.97	43	30.50	2	40
Total	77	100	141	100	5	100

Table-3: Comparison of frequency of HBsAg and HCV between urban and rural population.

Diseases	Urban	Rural	Total	%
HBsAg	32	50	82	35.96%
HCV	40	106	146	64.04%

DISCUSSION

Infections due to Hepatitis B and Hepatitis C viruses are significant health problems around the globe. World wide, viral hepatitis is commonest cause of hepatic dysfunction in pregnancy. Pakistan is highly endemic for Hepatitis B and Hepatitis C.¹⁶ The overall incidence in general Pakistani population ranges between 4–25 % which is alarming.^{17,18} In our study, the frequency of Hepatitis B and Hepatitis C was 1.37% and 2.52% respectively while 0.09 % for both HBsAg and Anti HCV.

The prevalence of HBV in developed countries is about 0.2%. Carriage among pregnant women in the United Kingdom is from 0.1–0.5 % but up to 1% in inner city areas.¹⁹ The prevalence of HCV infection was found to be 0.68%–0.98% in a multi centric study in Japan, 0.9% in Taiwan and 0.7% in Italy.^{20–22} HCV infection is found to be progressively and rapidly rising in our country. Studies carried out in Pakistan show prevalence of 4.1% to 5%.²³

The results when compared with other studies show a marked difference in the prevalence rates. A study conducted in Greece revealed prevalence of HBV as 2.6% and HCV as 0.5%.²⁴ A study from Japan showed prevalence of HBV as 1.8% while HCV as 7.1%.²⁵ A study from Turkey,²⁶ reported the prevalence of Anti HCV 2.4% which is comparable to our findings (2.52%) but HBsAg in that study was 6.6% and significantly higher to our study (1.37%).²⁶

Another study of 142 patients screened before surgery showed that HCV was 11.26% positive while HBsAg was 2.11% positive.²⁷ This is significantly higher than our findings of 2.52% for patients found to be HCV positive. In a study by Masood Z *et al*, out of 387 surgical patients 6.45% were positive for HBsAg and 11.3% for HCV while 1.6% were positive for both HBSAg and Anti HCV.²⁸ This is significantly higher than our study. In a study by Ahmad I *et al* documented the frequency of HBV was 3.18% while Anti HCV was 2.57% positive.¹ The frequency of HCV is comparable with our results and HBV is significantly higher to our findings. In another study by Ali SA the prevalence of HCV was 5.1% and HBV was 3.6% which is higher than our results but the rate of HCV infection is higher than HBV which is similar to our study and most of the studies carried out in Pakistan.²⁹

In a recent study, 2439 pregnant women were screened for Hepatitis B and Hepatitis C and 7.3% of them were positive for anti HCV, 2.2% for HBsAg and 0.08% were positive for both. These results are higher than ours but are similar to our findings of high rate of HCV to HBsAg.¹⁵ In this study it was found that most of the patients fell in 30–39 years age group followed by 20–29 years age group because this was the majority age group admitted to the labour room. In our study most of the patients were found to be multi gravida patients followed by grand multi gravida. It might be at increased risk because of their past pregnancies, hospital admission blood transfusion and/or any surgical procedure in the past. These findings were similar to the studies conducted by Awan SN *et al* and Ali HS *et al*.^{30,31}

A study by Ahmed I *et al*¹ revealed the frequency of Hepatitis B and Hepatitis C combined amongst urban and rural population as 45% and 55% which is similar to our finding in that frequency is greater in rural than urban population. It may be due to increased rural population, illiteracy, poverty, lack of proper precautions, quackery in the rural area and less awareness regarding the causative agent and transmission.³²

CONCLUSION

It is concluded from this study that HBsAg and HCV are common infections in pregnant women. There was a high frequency of HCV seropositivity as compared to HBsAg among pregnant women in this study. Risk factors include reuse of contaminated syringes, contaminated surgical instruments and blood products. Managing infected patients and lack of vaccination among surgeons and health care workers leads to transmission of infection from patients to them. Spread by these routes may be minimized by a protocol followed regarding strict screening, and awareness

regarding Hepatitis B and C should be promoted among health workers and general public.

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