INTRODUCTION

Hepatitis means inflammation of the liver. Viral hepatitis is a major liver infection in the world. Different viruses including hepatitis A, B, C, D, and E cause viral infection of human liver. Infections with Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are a worldwide public health problem. Hepatitis B virus is a DNA virus from hepadnaviridae family while Hepatitis C is a RNA virus with lipid coat similar to flaviviridae family. Hepatitis B and C are similar types of liver infections, which spread mostly through blood and blood products. Every year continuing occurrence of new infection is noted in the presence of a large reservoir of chronically infected persons.

Hepatitis B is one of the most common infectious diseases of the world and has infected 2 billion people worldwide. Prevalence of hepatitis B is more in tropical countries Africa and Asia, while in sub-Saharan it is hyperendemic. Individuals with chronic infections have a high risk of liver cirrhosis and hepatocellular carcinoma.

Hepatitis C has been estimated to infect 170 million people in the world. Most of the infected persons are thought to be in the developing countries. HCV plays an important role in the causation of chronic liver diseases, and has become the leading cause of liver cirrhosis and primary liver cell carcinoma in North America, Southern Europe and Japan.
In our country Hepatitis B and C have reached an alarming stage, many country wide studies (individual researchers) and population based Hepatitis B and C survey estimated a prevalence rate of 3-4% of Hepatitis B and 5-6% Hepatitis C, which indicates a burden of around 12 million affected individuals. This figure shows the country is categorized in the intermediate HBV prevalence area with carrier rate of 3-4% and for hepatitis C antibody it is 3%. In another study data shows nearly 60-70% patients with chronic liver disease in Pakistan tend to be positive for anti-HCV. It has been demonstrated that nearly 50% patients with hepatocellular carcinoma in Pakistan are anti-HCV positive.

Provincial prevalence of hepatitis B and C is different for each province. Baluchistan has the high (4.3%) prevalence of Hepatitis B while Hepatitis C is high (6.0%) in Punjab and Sindh (5.0%) KPK (1%) each of Hepatitis B & C. In above study it was also concluded that HCV prevalence in Sindh was 5%, Punjab 6.7%, 1.1 KPK and 1.5 Baluchistan. In another reviewed study Hepatitis B surface antigen prevalence was ranging 1.7-5.5% while Anti Hepatitis C antibody was 0.4-5.4%. A study conducted in Rawalpindi/Islamabad shows very high ratio of Hepatitis C (10.42) and Hepatitis B 2.65%. One study conducted in the BMC Hospital in 2003 showed 3.5% prevalence of Hepatitis B. From above figures, it is clear that prevalence of Hepatitis B & C is high in our country, which needs awareness & precautionary measures. As mentioned, aim of the study also was to determine frequency and associated risk factors of Hepatitis B & C in general population, awareness is beneficial especially for those who are seeking jobs & recruitment in Pakistan army.

PATIENTS AND METHODS
The study was conducted at Bolan Medical Complex Hospital (BMCH) Quetta. Duration of the study was from 1st January 2012 to 31st December 2013. This study was designed to collect information regarding the status of Hepatitis B virus (HBV) and Hepatitis C virus (HCV) in patients coming from the general population of different areas of 6 divisions of Baluchistan seeking treatment in BMCH Quetta. All persons without any discrimination of age, gender and socio-economic status were included in this study. Both indoor and outdoor patients referred by Doctors to the laboratory of the hospital for the HBsAg and anti HCV antibodies screening were candidates of the study. Trained laboratory staff collected the blood samples.

A total of 46319 samples were screened both for HBsAg and Anti HCV antibodies. HBsAg tests were done by Human (Germany) one step kit and Anti HCV tested by Immured (Germany) one step kit. 3078 positive cases both for HBsAg and Anti-HCV were then screened by ELISA for confirmation.

RESULTS
A total of 46319 individuals were screened for both HBsAg and Anti HCV antibodies, 3078 (6.64%) were positive for both. 1631 (3.52%) were positive for HBsAg and 1447 (3.12%) were positive for Anti HCV antibodies. Among these 32886 (71%) were males and 13432 (29%) were females. 2 patients were positive for both HBsAg and Anti-HCV antibodies. Table I & II

Divisional results are different for each Division. High and alarming prevalence for both HBsAg and Anti HCV was noted in the individuals of Naseerabad Division, which were 235 (6.7%) for HBsAg and 211 (6.3%) for Anti HCV. Quetta Division was the 2nd to Naseerabad, the prevalence were 728 (4.1%) for HBsAg and 632 (3.6%) for Anti-HCV. 3rd was the Zhob Division, prevalence were 2.9% for HBsAg and 2.6 for Anti-HCV. 4th was Sibbi Division, prevalence was 2.8% for HBsAg and 2.3% for Anti-HCV antibodies. Kalat was the 5th, prevalence was 2.4% for HBsAg and 2.3% for Anti-HCV antibodies and Makran Division was the 6th in number, prevalence was 2.4% for HBsAg and 2.3% for Anti-HCV antibodies.
### Table-I. Monthly tests performed during 2012.

|      | Total HBsAg | Positive HBsAg | Negative HBsAg | Total Anti HCV | Positive Anti HCV | Negative Anti HCV |
|------|-------------|----------------|----------------|----------------|-------------------|-------------------|
| Jan  | 1240        | 31             | 1209           | 1240           | 28                | 1212              |
| Feb  | 1180        | 40             | 1140           | 1180           | 36                | 1144              |
| Mar  | 1625        | 38             | 1587           | 1625           | 39                | 1586              |
| Apr  | 1872        | 40             | 1832           | 1872           | 32                | 1840              |
| May  | 2115        | 69             | 2046           | 2115           | 56                | 2059              |
| Jun  | 2778        | 91             | 2687           | 2778           | 87                | 2691              |
| Jul  | 3160        | 113            | 3047           | 3160           | 109               | 3051              |
| Aug  | 3287        | 125            | 3162           | 3287           | 112               | 3175              |
| Sep  | 3175        | 127            | 3048           | 3175           | 119               | 3056              |
| Oct  | 2805        | 118            | 2687           | 2805           | 112               | 2693              |
| Nov  | 1831        | 77             | 1754           | 1831           | 62                | 1769              |
| Dec  | 1632        | 63             | 1569           | 1632           | 58                | 1574              |
| Total| 26700       | 932            | 25768          | 26700          | 850               | 25850             |

### Table-II. Monthly tests performed during 2013.

|      | Total HBsAg | Positive HBsAg | Negative HBsAg | Total Anti HCV | Positive Anti HCV | Negative Anti HCV |
|------|-------------|----------------|----------------|----------------|-------------------|-------------------|
| Jan  | 1331        | 42             | 1289           | 1331           | 33                | 1298              |
| Feb  | 1456        | 47             | 1409           | 1456           | 39                | 1417              |
| Mar  | 1912        | 59             | 1853           | 1912           | 42                | 1870              |
| Apr  | 2175        | 75             | 2100           | 2175           | 69                | 2106              |
| May  | 2380        | 98             | 2282           | 2380           | 91                | 2289              |
| Jun  | 1530        | 52             | 1478           | 1530           | 41                | 1489              |
| Jul  | 1672        | 51             | 1621           | 1672           | 47                | 1625              |
| Aug  | 1832        | 62             | 1770           | 1832           | 58                | 1774              |
| Sep  | 1591        | 58             | 1533           | 1591           | 49                | 1542              |
| Oct  | 1651        | 62             | 1589           | 1651           | 48                | 1603              |
| Nov  | 1014        | 48             | 966            | 1014           | 41                | 973               |
| Dec  | 1075        | 45             | 1030           | 1075           | 39                | 1036              |
| Total| 19619       | 699            | 18920          | 19619          | 597               | 19022             |
Pakistan is highly endemic for hepatitis B and hepatitis C infection. In the past many studies have been conducted in this field in Pakistan and guidelines for the prevention and control of viral hepatitis were formulated. Even then the graph of hepatitis B and C positive patients is going up in our population. In our country several previously conducted studies have shown different prevalence rates of HBV and HCV infection. Studies conducted in the past shows that prevalence of Anti HCV is high in Punjab while HBsAg is high in Sindh, both HBsAg and Anti HCV prevalence is less in KPK and Baluchistan.

Population in Baluchistan province is scattered, poor and majority is illiterate so remain susceptible to all sorts of diseases. The cause of poverty include lack of education poor access to health services large family size gender discrimination and vulnerability to environmental degradation and deterioration of the natural resource base. Viral hepatitis rapidly spreads owing to lack of awareness in population like ours, therefore remains at high risk of acquiring the infection of Hepatitis B and C.

Our study was aimed at determining the seroprevalence of HBV and HCV infection among general population coming from various areas of Baluchistan for seeking treatment in BMCH Quetta. In this study the age range was 3-72 years, 71% were male and 29% were female, and patient Divisional distribution is given in table-III. In our study we focused on patients coming from all six Divisions of Baluchistan. Prevalence of Hepatitis B and C was very high and alarming in Naseerabad division, which was 6.7% for HBsAg and 6.3% for Anti-HCV antibodies. It could be the link of area with Sindh province, which has high prevalence of above viral infection. 2nd to Naseerabad Division was Quetta Division, Prevalence was 4.1% for HBsAg and 3.6% for Anti-HCV antibodies. The reason for this could be the over-population and improper sanitation of this Division. Although prevalence compare to a study done in CMH Quetta is high, reason could be (a) above study was in blood donors and professional donors avoid CMH (b) Patient load is mainly on BMCH. 3rd was Zhob Division, prevalence for HBsAg was 2.9% and for Anti-HCV antibodies 2.6%, it could be the link of people to Karachi and Punjab. 4th and 5th were Sibbi and Kalat Division. And last was the Makran Division, for which the ratio was low, it could be that patients from that area go to Karachi, which is convenient to them.

CONCLUSIONS
The incidence of Hepatitis B and C is comparable to other studies conducted in other areas of Pakistan except Naseerabad Division, which is high and alarming. That Division needs special consideration for prevention treatment and awareness. Quetta Division should be treated on same line.

We recommend the following,
1. Proper screening of blood & blood products for Hepatitis B and C infections should be done with ELIZA to avoid false negative results.
2. No surgical & dental procedures should be
done without screening of the patient.
3. The masses should be educated about Hepatitis and other viral infections.
4. Professional donors should be discouraged.

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REFERENCES
1. Seeger C, Mason WS. Hepatitis B. Virus Biology Micro Mol Biol Rev 2000, 64: 51-68.
2. Abdulaziz Q. Alodini Prevalence of Hepatitis B Virus (HBS) and Hepatitis C Virus (HCV) Infections among Blood Donors at Al-thawra Hospital Sana’a City-Yemen, Yemeni Journal for Medical Sciences 2012 (6) 16-20.
3. Muhammad Ashraf Chaudhry, Javed Rafique Malik, Muhammad Zeeshan Ashraf. Seropositivity of Hepatitis B and C in Blood Donors at CMH Lahore, Pakistan A.P.M.C Vol; 7 No 1 January-June 2013.
4. Syed Mukhtar Ali Shah, Imran-uddin Khattak, Abid Ali and Muhammad Tariq. Seropositivity for Hepatitis B and C in voluntary Blood donors. J Ayub Med Coll Abbotabad 2010; 22(3) 149-151
5. Maddava V, Burgess C, Drucker E. Epidemiology of chronic hepatitis co-infection in sub-Saharan Africa Lancet Infect Dis 2002, 2 293-302
6. Colquhon SD. Hepatitis C A clinical update. Arch Surg 1996, 131 18-23 doi:10.1001/archsur, 1996. 01430130020004.
7. Chen DS. Hepatitis C virus in chronic liver disease and hepatocellular carcinoma in Taiwan Princess Takamatsu Symp 1995, 25 27-32.
8. Government of Pakistan planning commission problem, Prevalence and prevention of Viral Hepatitis in Pakistan. Prof. Dr K A Karamat [ update 10 April 2010] Available from http www.pakistan.gov.pk Viral%20Hepatitis%20PrevalenceArticle%20p-1-51.pdf.
9. Wasim Jafri et al “ Hepatitis B and C prevalence and risk factors associated with seropositivity among children in Karachi. Pakistan BMC Infect Dis 2006, 6;101 doi;10,1186/1471-2334-6-101 .
10. Ali SA, Donahue RM, Qureshi H, Vermund SH. Hepatitis B and Hepatitis C in Pakistan prevalence and risk factors. IJID 2009 13 (1) 9-19. Doi:10.1016/J.IJID.2008.06.019. Epub2008 Oct 2.
11. Khan AA, Rehman KU, Haider Z, Shafqat F. Seromarker of hepatitis B and C in patients with cirrhosis. J Coll Phys Surg Pak 2002, 12 105-107.
12. M. Khid Siddiqui, M. Saeed Siddiqui and Aijaz Ahmed Sohag; “ Hepatitis B & C: Share of young rural populace of Sind” Medical Channel April-June 2010, Vol 16 No 2; 215-218.
13. Pakistan Medical Research Council Islamabad National Survey (Jul 2007-Jun 2008) on prevalence of Hepatitis B & C in general population of Pakistan [cited 2010 Apr 8 Available from http www.pmrc.org.pk hepatitis.htm.
14. Syed Asad Ali, Rafe M.J. Donahue, Huma Qureshi, and Sten H. Vermund. Hepatitis B and hepatitis C in Pakistan: prevalence and risk factors. Int J Infect Dis. Jan 2009;13(1): 9-19; published online Oct 2,2008, 1q Doi;10.1016/i.ijid.2008.06.019.
15. Abdul Salam, M. Masoom Yasinzai, Mohammad Haleem Taj, Nirmal Das, Amir Mohammad; “Prevalence of HBsAg positive cases in BMCH Quetta” The Professional Vol;10, No.1 Jan-Mar 2003; 23-25.
16. Bukhri SM, Khatoon N, Iqbal A, Prevalence of hepatitis B antigenaemia in Mayo Hospital Lahore; Biomedica 1999; 15. 88-91.
17. Fayyaz M, Qazi MA, Ishaq M, Chaudhary GM, Bukhari MH. Frequency of hepatitis B and C seropositivity in prisoners; Biomedica 2006; 22; 55-8.
18. Farooq MA, Iqbal MA, Tariq WZ, Hussain AB, Ghani I, Prevalence of Hepatitis B and C in a healthy cohort Pakistan; J Pathol 2005, 16 42-6.
19. Qureshi H, Bile KM, Jooma R, Alam SE, Afridi HU; prevalence of hepatitis B and C viral infection in Pakistan; findings of a national survey appealing for effective prevention and control measures. East Mediterr Health J 2010 16 suppl 5 15-23.
20. Ali N, Nadeem M, Qamar A, Qureshi AH, Ejaz A, Frequency of Hepatitis c virus antibodies in blood donors in Combined Military Hospital Quetta; Pak Med J Sci 2003. 19 (1) 41-4.

Professional Med J 2014;21(4): 766-770.