

## HEPATITIS C; PREVALENCE IN PARAMEDICAL STAFF OF A TEACHING HOSPITAL

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**ABSTRACT... Introduction:** Hepatitis C is a RNA virus isolated in 1988 but still not cultured in the laboratory. Hepatitis-C infection is a serious global public health issue, WHO estimates worlds 3 % population is HCV positive. Pakistan is also facing the huge burden of this disease. Accurate prevalence information for hepatitis C infection is scant in Pakistan. Few population based studies are available, the most comprehensive being that of Luby et al which after testing a representative sample from a population of 150,000 in Hafizabad, Pakistan found an overall sero-prevalence of 6%. This increased to 30% with increasing age. They also found sero-prevalence of 16% in household members of HCV infected cases. Aslam et al reported a population prevalence of 16% from Lahore and 23.8% in Gujranwala. In our study published in Medical Forum showed prevalence of HCV antibodies in population attending our department of ophthalmology is 27.06%. There is no data from Pakistan about prevalence of hepatitis C in Paramedical staff. It appears that paramedical staff is at higher risk of contracting this infection as they are exposed to multiple risk factors like needle stick injuries. Little is known about the prevalence of Hepatitis C in this group of population. The objective of our study was to assess the perceived increased incidence of Hepatitis C in this group of population. **Methods & Materials:** This is a retrospective audit of the data from the records kept by clinical laboratory of University Medical College, Faisalabad. All paramedical staff members were invited for HCV antibody test on 13.1.2007 to 20.1.2007. Any staff member working in those days was included in the study. Persons on holidays or did not give free informed consent was excluded from the study. Serum of blood samples were analyzed by EXCEL a one step test device for the qualitative detection of antibodies to Hepatitis C virus in serum or plasma by trained professional. This test has a relative sensitivity of 96.8%, relative specificity 99% and accuracy 98.9% as compared to HCV EIA test. Statistical analysis was performed by SPSS system. **Results:** A total 80 staff members were working in the hospital at that time, 61 attended for the test (F: 31, M: 30). We found 7 (11.4%) were HCV positive and 54 (88.52%) were HCV negative including 2 weekly positive. Among HCV positive 4 (6.55%) were male and 3 (4.91%) were females. Age distribution was 17 – 75 years with mean age 32.51 years. Among HCV positive 3 were analyzed by ELISA technique. 2 weekly positive by EXCEL were negative by ELISA and 1 positive by EXCEL was positive by ELISA. **Conclusion:** Paramedical staff is perhaps not at higher risk of contracting HCV infection. However more studies are required to further assess this finding.

### BACKGROUND

Hepatitis C is a RNA virus isolated in 1988 but still not cultured in the laboratory. Hepatitis-C infection is a serious global public health issue, WHO estimates worlds 3 % population is HCV positive.

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Pakistan is also facing the huge burden of this disease.

Health care workers exposed to accidental inoculation with infected blood represent a high risk group of acquiring hepatitis C virus infection. Needle stick injuries in the health care setting result in a 3% risk of HCV transmission, but, according to Rischitelli et al in 2001, HCV prevalence among health care workers is similar to that of the general population. Al-Assad University Hospital, Damascus, Syria reported, the prevalence of hepatitis C virus antibodies among health care workers as 3%. A study of medical and paramedical personnel in Manila showed 2 of 123 medical and paramedical staff (1.6%) were anti-HCV positive. Ain Shams University, Cairo, Egypt, study of Hail region Kingdom of Saudi Arabia (KSA), showed medical staff had a prevalence rate of 2.2% indicating a relatively low risk of infection. In Pistoia General Hospital (central Italy), samples collected from 511 health care employees engaged in direct clinical task and 222 clerical and nurse school attendees showed seroprevalence as 3.8%: 4.7% in the first group; 1.8% in the second group.

Accurate prevalence information for hepatitis C infection is scant in Pakistan. Few population based studies are available, the most comprehensive being that of Luby et al which after testing a representative sample from a population of 150,000 in Hafizabad, Pakistan found an overall sero-prevalence of 6%. This increased to 30% with increasing age. They also found sero-prevalence of 16% in household members of HCV infected cases. Aslam et al reported a population prevalence of 16% from Lahore and 23.8% in Gujranwala. In author's study published in Medical Forum showed prevalence of HCV antibodies in population attending department of ophthalmology Madina Teaching Hospital, Faisalabad is 27.06%.

Pakistan is a developing country and has poor health indicators. It ranks 134<sup>th</sup> of the 174 countries on the human development index of the United Nations. In Pakistan, over a third of the population is living in poverty and has a fragile health structure; many patients cannot afford the costly treatment of these diseases.

Paramedical staff is relatively more exposed to multiple risk factors for hepatitis C transmission in Pakistani hospitals than compared to developed countries. Little is known about the prevalence of Hepatitis C in medical and paramedical staff in Pakistan. The objective of our study was to assess the perceived increased incidence of Hepatitis C in this group of population.

## METHODS & MATERIALS

This is a retrospective audit of paramedical staff members performed on 13.1.2007 to 20.1.2007, including ward assistants, theatre assistants, OPD assistants, X-Ray technicians and cleaning staff. Doctors and nurses were excluded from the study. Age criteria were any working age group which ranged from 17 to 75 years. Employees belonged to different regions of Pakistan, majority from local towns and villages and few from NWFP. All paramedical staff members were invited for HCV antibody test. Any staff member working in those days was included in the study. Persons on holidays or did not give free informed consent was excluded from the study.

This hospital started as Madina Eye Centre in 1999 was upgraded to General hospital in 2005 and was granted teaching hospital status in September 2006 to fulfill the requirements of the medical students of University Medical College, Faisalabad. At the time of study it was a 180 bedded hospital and its specialties included general medicine, dermatology, pediatrics, general surgery, ENT, gynaecology/obstetrics and ophthalmology.

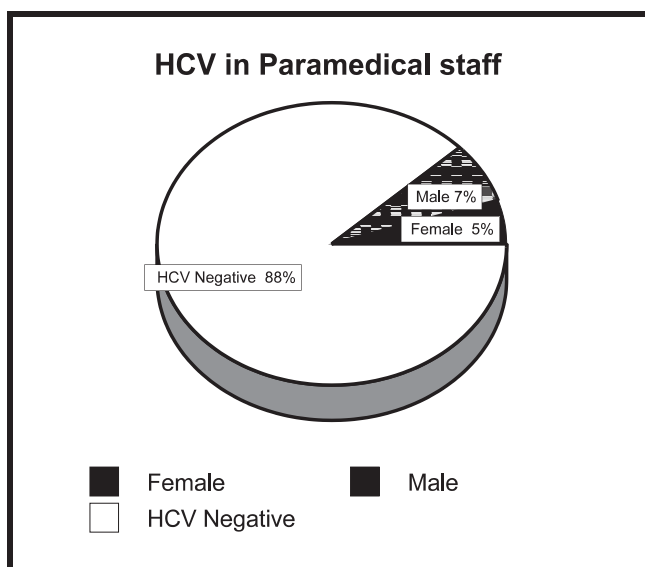
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## RESULTS

A total 80 staff members were working in the hospital at that time, 61 attended for the test (F: 31, M: 30). We found 7(11.4%) were HCV positive and 54(88.52%) were

HCV negative including 2 weekly positive. Among HCV positive 4(6.55%) were male and 3(4.91%) were females.

| Sex    | HCV (+ve) |        | HCV (-ve) |        |
|--------|-----------|--------|-----------|--------|
|        | No of pts | %age   | No of pts | %age   |
| Male   | 4         | 6.55%  | 27        | 44.26% |
| Female | 3         | 4.91%  | 27        | 44.26% |
| Total  | 7         | 11.46% | 54        | 88.52% |



Age distribution was 17 – 75 years with mean age 32.51 years. Among HCV positive 3 were analyzed by ELISA technique. 2 weekly positive by EXCEL were negative by ELISA and 1 positive by EXCEL was positive by ELISA

## DISCUSSION

Our study showed that hepatitis C is perhaps not much more prevalent in this group of population even in our hospitals. Although number in this study is small but considering the difficulties of access and funding in this type of studies, it is a significant finding.

Prevalence of hepatitis C in this group of population is comparable to general population at least or even lower as reported in some studies. Authors thought that the reason of this finding is being aware of the risk and taking precautions. Also it is probably the awareness not the

socioeconomic difference that plays a part in the prevalence of this infection.

However more studies are required to assess the prevalence in other parts of Pakistan and specifically in laboratory workers and sanitary staff in our hospital settings who are more exposed to needle stick injuries in day to day practices of our hospitals.

## CONCLUSION

Paramedical staffs are perhaps not at higher risk of contracting HCV infection in Pakistan as compared to general population. However studies are required to find the incidence of this infection in laboratory workers and cleaning staff.

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