HCV Serotypes in Karachi: a Liaquat National Hospital Experience

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Introduction

The identification of hepatitis C virus and development of serological assays provide an important opportunity to diagnose HCV infection and prevent its transmission through transfusion of blood[1]. Further studies on HCV typing may help clinicians and public health authorities to develop appropriate protocols for management and control of the disease.
This study reports the prevalence of HCV serotypes among HCV positive patients at Liaquat National Hospital, Karachi, during the year 2000-200[1].

Material, Methods and Results

A total of 306 clinically suspected hepatitis C patients who were repeatedly reactive for anti-HCV antibodies on Axsym (Abbott Laboratories, Chicago), were tested for HCV serotypes (Murex Diagnostic, Dartford, UK). Of these 173 (56.5%) were males and 133 (43.4%) females. A total of 255 (83.3%) were typeable and 5 1(16.6%) were untypeable. Among 255 typeable sera 198 (77.6%) were of type 3 , followed by type 1, thirty one (12%), type 6, seven (2.7%), type 2, six (2.3%), type 4, six (2.3%), and type 5 one (0.4%). Six patients (2.3%) had mixed infections. Among six mixed sera three were of type 3 and type 1, two were of type 3 and type 2 and one sera was of type 3 and type 6.

Comments

HCV type 3 appears to be the most common serotype of HCV infection in the country aa reported in other studies[2,3]. Sixteen percent cases were untypable.
There can be several reasons to explain high untypablity in the studied population. It may be because of false reactivity on initial screening tests, as few HCV reactive sera are confirmed on confirmatory assay-MBA in the country. Besides, it has been reported that antibodies to NS^4 epitope, an epitope that is used for subtype classification, develops following development of antibodies to core and NS^3 epitopes of HCV. Therefore a person may remain untypeable in earlier stages of infection. Since HCV RNA is usually detectable very soon after infection, genotyping analysis is the only method available during this window period[1]. On the other hand that antibodies to NS^4 epitopes do not persist for a long time after clearance of the virus. therefore, a person exposed to the virus but becomes negative for the infection can also have untypeable sera[4]. Two percent had mixed infection. These patients might have exposures to more than one type of virus in the recent past. A cross reactivity may also give mixed infection type results[1]. HCV subtypes may have different clinical implications[5]. Firstly, the efficacy of serological screening assays may be different[1]. Secondly, the epidemiology of e.g., type 3 appears to be detected more often in relation to intravenous drug abuse in some countries of the world[6]. Whether the levels of viremia are really type dependent remains obscure[7]. Furthermore,

the severity as well as the progression rate of the liver disease may differ[8]. Finally there are indications that the efficacy of interferon treatment may also depend on the viral subtypes[9].

References

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