

## Abstract

Because of no available complete epidemiologic data, the preventive and control strategy for hepatitis C virus (HCV) infection is not as comprehensive as that for hepatitis B virus infection in Taiwan. Acute hepatitis C (AHC) is a reported communicable disease in Taiwan. To block its transmission route, we should identify the incidence cases and study their risk factors. However, the reliability of the reported cases was never tested. The aim of this study was elucidate the reliability of reported cases of AHC in Taiwan.

Official database of reported cases of AHC from 1995 to 2004 was obtained from Center for Disease Control of Taiwan. We defined all reported cases as study materials, and review the chart from original hospital one by one to confirm whether the case met the diagnostic criteria for notifications or not.

We classify the diagnostic criteria of AHC into six groups: 1. definite case is ALT>400U/L, and anti-HCV antibody (Ab) seroconversion from a past negative to a positive test within 6 months. 2. Probable case is ALT>400 U/L and met any one criterion below: (a) positive serum HCV RNA (PCR), negative anti-HCV Ab and no previous history of hepatitis. (b) Positive but low titer (<40 S/CO) of anti-HCV Ab (HCV 3.0, MEIA, abbott, IL, USA) at acute phase, and raising to high titer (>40 S/CO) at recovery phase. (c). anti-HCV Ab seroconversion from a past negative to a positive test, but more than 6-month period. 3. Possible case is ALT<400U/L, with anti-HCV Ab seroconversion from a past negative to a positive test. 4. Suspect case is seroconversion but persist normal ALT level. 5. Excluded case is the case that not met the above diagnostic criteria. 6. Undetermined case is the incomplete laboratory tests to make the diagnosis of AHC.

Among 717 cases that can be analyzed, there are 53 definite cases (7.3%), 45 probable cases (6.2%), 196 possible cases (27.3%), 18 suspected cases (2.5%), 363 excluded cases (50.6%) and 42 undetermined cases (5.9%).

Among geographic distribution of AHC in county and city, majority of cases distribute at Tainan and Kaohsiung Counties and cities(181/294 , 61.6%) at Southern Taiwan. The characteristic of cases in blood donation centers are more localized at southern Taiwan, younger in age, and lower ALT levels significantly if compare with the cases from hospitals.

In diagnostic rates of the reported cases of AHC, medical centers (25/78 , 32.1% ) is higher than regional hospitals (29/203 , 14.3%), and even more higher than clinics and local hospitals (10/135 , 7.4%) (chi-square's test for linear trends,  $P = 0.001$ ). Among the reported department (377 cases), the most frequently reported department is Gastroenterology (193 cases) and followed by General Medicine or Family Medicine (100 cases), and Nephrology. Analyzing the diagnostic accuracy by reported department, there were Department of Infectious Disease (4/12 , 33.3%), following Gastroenterology (45/193 , 23.3% ) , Nephrology (4/28 , 13.3% ) and General Medicine or Family Medicine (10/100 , 10%). The frequent causes for mis-reporting for AHC were chronic HCV infection in 212 cases (58.4%), chronic HCV with acute exacerbation in 123 cases (33.9%) and error reporting in 28 cases (7.7%) .

There were only 7.4% of diagnostic rate if the restrained traditional diagnostic criteria was applied for the AHC cases in Taiwan. The diagnostic rate

**will up to 41% if surrogate diagnostic criteria were added. Obviously, the cases number of AHC of official reporting systems has been over-estimated in Taiwan. In the other hand, how many AHC cases have been under-reported also an important issue.**

**Keywords: acute hepatitis C virus · report communicable disease · diagnostic criteria**