

中文題目：C 型肝炎抗原可準確運用於社區 C 肝篩檢

英文題目：Hepatitis C Virus Core Antigen is accurate in Community-based Screenings

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Background: Early detection of hepatitis C virus (HCV) by community-based screening may decrease HCV-related morbidity and mortality. However, the diagnosis of HCV infection is a time-consuming and cost ineffective two-step process currently. The first step is a screening test, whereby anti-HCV antibodies are detected through serological immunoassays. The second confirmation test is the more expensive HCV RNA by polymerase chain reaction for anti-HCV-positive patients. From previous studies, HCV antigen test by chemiluminescent microparticle immunoassay has high sensitivity and good correlation with HCV RNA. Thus, this study aims to investigate one step HCV antigen (HCV-Ag) test to diagnose active HCV infection in community-based setting.

Methods and Materials: The 5 study townships located in northwestern Yunlin and southeastern Changhua. The first 1,000 subjects who underwent community-based HCV screening were enrolled. Both anti-HCV and HCV Ag (Abbott ARCHITECT HCV-Ag Assay (Abbott, Germany)) were checked. If either anti-HCV-positive or HCV Ag>3 fmol/liter, quantitative HCV RNA was further measured to confirm active HCV infection.

Results : Prevalence of anti-HCV was 24.7% (247/1,000). For lacking blood samples, we only checked HCV Ag in 243 cases (98%) and HCV RNA in 205 cases (83%). All HCV Ag-positive cases were anti-HCV-positive. The 205 cases with available results of anti-HCV, HCV Ag, and HCV RNA were further analyzed. Significant linear correlation between HCV Ag and HCV RNA concentrations was noted ($r=0.918$, $p\text{-value}<0.001$) after log-log transformation. The positive rate of HCV-Ag and HCV RNA was 47.8% ($n=98$) and 48.3 % ($n=99$), respectively. There were only two HCV Ag negative but HCV RNA positive cases. There was only one cases had positive HCV-Ag but negative HCV RNA. The sensitivity, specificity, accuracy, positive predictive value (PPV) and negative predictive value (NPV) was 99.0%, 98.1%, 98.5%, 98.0% and 99.1%, respectively.

Conclusions : All HCV-Ag positive patients were positive for anti-HCV. One step HCV-Ag test is an accurate method in community-based hepatitis C screening in prediction of viremia. Using this screening method, we can refer patients who need to be treated precisely.