Risk factors for hepatitis C infection among adult patients in Kedah state, Malaysia: a case-control study

ABSTRACT

Hepatitis C infection is a global public health problem. This study was designed to identify the risk factors associated with hepatitis C infection among adult patients in Kedah state, Malaysia. A matched, hospital-based, case–control study was conducted at a tertiary hospital. Cases were adult (aged ≥ 18 years) patients with positive serology test results for hepatitis C virus antibody and detectable hepatitis C virus RNA from January 2015 to December 2018, and controls were age-, sex- and ethnicity-matched patients who were not infected with hepatitis C virus. Self-administered questionnaires were used to collect data on demographic characteristics and previous exposure to selected risk factors among the study participants. Associations between hepatitis C and demographic and risk factors were assessed using univariable and multivariable logistic regression analyses. A total of 255 case–control patient pairs were enrolled. The multivariable analysis indicated that having a history of blood or blood product transfusion before 1992 (adjusted odds ratio [AOR] = 6.99, 95% confidence interval [CI]: 3.73–13.81), injection drug use (AOR = 6.60, 95% CI: 3.66–12.43), imprisonment (AOR = 4.58, 95% CI: 1.62–16.40), tattooing (AOR = 3.73, 95% CI: 1.37–12.00), having more than one sexual partner (AOR = 2.06, 95% CI: 1.16–3.69), piercing (AOR = 1.71, 95% CI: 1.04–2.80), and having only secondary education (AOR = 1.92, 95% CI: 1.06–3.57) were independently associated with hepatitis C. No associations were found between health care occupation, needle-prick injury, surgical procedures, haemodialysis, acupuncture, cupping, or contact sports and hepatitis C infection. These findings demonstrate that hepatitis C risk is multifactorial. Having a history of blood or blood product transfusion before 1992, injection drug use, imprisonment, tattooing, having more than one sexual partner, piercing, and having only secondary education were associated with increased odds of hepatitis C.