HCV Infection in South Australian Prisoners: Prevalence, Transmission, Risk Factors and Prospects for Harm Reduction

Emma Ruth Miller (MPH)

Discipline of Public Health, School of Population Health and Clinical Practice

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Papers published, submitted or presented during candidature

Publications

Peer reviewed

Miller ER, Bi P, Ryan P (2006) The prevalence of HCV antibody in South Australian Prisoners. Journal of Infection, 52: 125-35

Other

Miller ER, Bi P, Ryan P (2006) Hepatitis C virus infection in prisons. Public Health Bulletin, 4: 16-20

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Conferences

Miller ER, Bi P, Ryan P. HCV antibody prevalence in the South Australian prison system – results of a State wide audit [presentation]. Public Health Association of Australia Mini Conference: Public Health in the Community – Adelaide (22 October 2005)

Miller ER, Bi P, Ryan P. HCV antibody prevalence in the South Australian prison system – results of a State wide audit [poster]. Communicable Diseases Control Conference: Piecing Together the Jigsaw – Sydney (2-3 May 2005)

Miller ER, Bi P, Ryan P. HCV infection in South Australian prisoners: a plan to define an unchecked epidemic [presentation]. Australasian Epidemiological Association Annual Scientific Meeting: Epidemiology in an Age of Uncertainty – Adelaide (11-12 October 2004).

Abstract

This thesis aimed to describe the epidemiology of HCV in South Australian prisons - prevalence, transmission and risk factors. This thesis also aimed to determine the impact of incarceration on reported risk behaviours. A related objective was to evaluate the epidemiological effectiveness of the ELISA-3 HCV antibody test using PCR as the gold standard. Finally, this thesis aimed to explore the potential for minimising HCV risk in the South Australian prison population.

Methods

Two case note audits were conducted at each of eight publicly operated SA prisons (in summer and winter) to identify any documented HCV-antibody test results. Prisoners recruited at entry to prison were offered tests for HCV-antibody and completed a pre-entry risk factor survey. Participants completed additional risk factor surveys and (if HCV-negative at last test) underwent further antibody tests at three-monthly intervals for up to 15 months. A sample of participants also provided blood specimens for HCV-RNA testing. Limited stakeholder consultations with prison officers and nurses were also conducted. Quantitative data were analysed using univariate and multivariate techniques.

Results

1347 case notes were audited in summer, and 1347 in winter and an overall HCV prevalence of 42% was estimated. In both univariate and multivariate analyses, HCV prevalence was significantly higher in female prisoners (65%), those aged above 28 years (48%), and in Indigenous prisoners originating from metropolitan areas (56%). Indigenous prisoners originating from remote areas had significantly lower HCV prevalence (20%).

666 prisoners were recruited at entry, and 42% were estimated to be HCV-antibody positive. Three seroconversions were noted in 151 initially HCV-seronegative negative individuals followed up for a median time of 121 days – a rate 4.6 per 100 person years – but community exposure could not be ruled out. Overall agreement between HCV-antibody and HCV-RNA assays was 86% (100% in the HCV negative samples) – kappa = 0.71.

Injecting history was highly prevalent in prison entrants (70%) and both community and prison injecting (but not tattooing) were independent predictors of entry HCV status. Prison

history was also independently associated with entry HCV status. Injecting in prison during the study was infrequently reported, but significantly more likely in those testing HCV-antibody positive at prison entry (risk ratio = 2.48, *P*=0.046).

Stakeholders were most supportive of strategies to increase education and to minimise risks associated with hair clippers, but did not support most other suggested preventive strategies. Other issues related to communicable diseases and infection control were explored in the stakeholder interviews.

Conclusions

HCV prevalence in South Australian prisoners is extremely high and may have contributed to a 'ceiling effect', minimising the seroconversion rate observed in this population. Injecting is relatively infrequently reported in prison, but more likely in those already infected with HCV. Thus, contaminated injecting equipment represents a significant threat to other prisoners and prison staff. Strategies aimed at reducing HCV risk in prisons, which address the concerns of those expected to implement them, are proposed in this thesis.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available in all forms of media, now or hereafter known.

Name: _Emma Ruth Miller_ Signed: _____ Date: _____

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