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Research Article

Is Being a Prisoner, Indigenous or Having a Psychiatric Illness an Acceptable Limitation to Treatment Access for Chronic Hepatitis C Infection?

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Abstract

170 million people worldwide are infected with chronic hepatitis c virus (HCV) [1]. There are an estimated 226700 people infected in Australia and it is the most common indication for liver transplantation in this country [2]. Despite this, overall treatment uptake remains low at <2% of patients infected undergoing treatment per year [3]. Rates of admission to hospital with decompensated liver cirrhosis are expected to increase by 190% by 2030 [4]. Cure of chronic HCV infection requires complex treatment regimens for several months.

Keywords: psychiatric illness; psychiatric illness; chronic hepatitis c virus

Introduction

170 million people worldwide are infected with chronic hepatitis c virus (HCV) [1]. There are an estimated 226700 people infected in Australia and it is the most common indication for liver transplantation in this country [2]. Despite this, overall treatment uptake remains low at <2% of patients infected undergoing treatment per year [3]. Rates of admission to hospital with decompensated liver cirrhosis are expected to increase by 190% by 2030 [4]. Cure of chronic HCV infection requires complex treatment regimens for several months. These treatments are complicated, side-effects are common and adherence to treatment is often difficult. Cure rates are highest when treatment is completed. This study aims to explore any potential associations between treatment setting (i.e. prison vs community), indigenous status and psychiatric diagnoses and the rates of successful treatment completion.

Methods

This is a retrospective cohort study of patients treated for chronic HCV infection at the Toowoomba Liver Clinic over a 3 year period (2010-2012). Inclusion criteria was all patients who received any treatment for their HCV infection during the 3 year period. Treatment was mainly "dual-therapy" and consisted of subcutaneously administered pegylated-interferon and ribavirin tablets for 12 months. There were 23 patients who had "triple therapy" which consisted of dual therapy + oral telepravir or boceprevir and this treatment course was 6 months duration. There was no exclusion criteria. Data were collected including treatment setting (i.e. prison vs community), HCV genotype, indigenous status, comorbidities, contact with psychology services, treatment interruptions/discontinuations, and follow up rates to confirm cure (defined as sustained virological response (SVR) 24 weeks after treatment completion). The mean/median/mode number of visits with a physician was just 2, with treatment delivered predominantly via a full-time hepatitis nurse over the phone or face-to-face. Patients could also have their care delivered via a GP shared-care model, and had access to psychologist service provided by the hospital. The primary outcome was treatment completion, and secondary outcome SVR, and so the particular treatment regimen received by each patient was of secondary importance and did not influence the main results of the study.

Results

Of the 243 patients who received treatment, 74 were prisoners and 169 were community-based. The vast majority of patients included in the study were male, smokers, and had genotype 1 or 3. See table 1 for patient characteristics of all patients who were available for follow-up (183 patients). 49 prisoners completed treatment (66.2%) versus 117 community-based patients (69.2%). 31 treated patients were indigenous and 212 were non-indigenous. 22 indigenous patients completed treatment (71.0%) versus 144 non-indigenous patients (68.0%). Regarding psychiatric diagnoses, 105 had a current psychiatric illness and 138 did not. 69 patients with a current psychiatric diagnosis completed treatment (65.7%) versus 97 patients without (70.3%). See table 2 for treatment completion rates. Unsuccessful completion of treatment was common (31.7%). Of the 243 patients included in the study, all had dual therapy (pegylated-interferon plus ribavirin) treatment, and 23 patients had triple therapy (dual therapy + telepravir or boceprevir). A subgroup analysis was performed due to 14 patients having their care transferred to another treatment centre. In this patient cohort of 229, there were 81 patients (35.4%) who were neither indigenous, mentally ill, or prisoners

(see table 3 for further breakdown and overlap of these "at-risk" groups). There was no statistically significant evidence that being indigenous, a prisoner, or having a current mental illness is an independent risk factor for unsuccessfully completing treatment (see table 4). There was evidence, however, that prisoners were over twice the risk of being lost to follow up (OR 2.095; p= 0.040) and that indigenous patients were at similar risk of being lost to follow up (OR 2.343; p = 0.058) (see table 5).

Characteristics of Patients treated for Chronic HCV who were available for follow-up (n = 183)	**n (%)**
Male	135 (73.8%)
Female	48 (26.2%)
Community-based	140 (76.1%)
Prisoners	44 (24.0%)
Indigenous	17 (9.3%)
Diabetes	6 (3.3%)
EtOH abuse (Current or Previous Hx)	93 (50.8%)
Smoker	123 (67.2%)
Current Mental Illness	78 (42.6%)
Seen by Psychologist	127 (69.4%)
Co-infected with HBV	1 (0.5%)
Co-infected with HIV	0 (0%)
Treatment Type	**n (%)**
Standard Therapy: Pegylated Interferon (alfa-2a or alfa-2b) plus Ribavirin	160 (87.4%)
Triple Therapy: Standard Therapy plus either Bocepravir or Telapravir	23 (12.6%)
Genotype	**n (%)**
1	96 (52.5%)
2	7 (3.8%)
3	68 (37.2%)
6	2 (1.1%)
Mixed	8 (4.4%)
Unknown	2 (1.1%)
Treatment Outcomes	**n (%)**
Completed prescribed treatment	128 (69.9%)
SVR achieved	110 (60.1%)
Non-Responder	16 (8.7%)
Treatment discontinued by Doctor	26 (14.2%)
Treatment discontinued by Patient	28 (15.3%)

Table 1: Characteristics of Patients treated for Chronic HCV

	Indigenous	**Prisoner**	**Current Mental Illness**
Indigenous (n=27)	6 (22.2%)	13 (48.1%)	11 (40.7%)
Prisoner (n=63)	13 (20.6%)	33 (52.4%)	20 (31.7%)
Current Mental Illness (n=99)	11 (11.1%)	20 (20.2%)	71 (71.7%)

Table 2: Treatment completion/cessation breakdown

	ACHOS	**Toowoomba**
Completed Treatment	414/550 (75.3%)	128/183 (69.9%)
Non-Responders (Stopped Treatment)	55/550 (10.0%)	16/183 (8.7%)

Stopped by Treating Doctor for adverse event(s)	35/550 (6.4%)	10/183 (5.5%)
Stopped due to Patient Decision	26/550 (4.7%)	28/183 (15.3%)

Table 3: At risk patient groups and relationship between groups

	Odds Ratio	95% Conf. Interval		P score
Indigenous	1.158	0.475	2.821	0.747
Prisoner	0.865	0.459	1.632	0.656
Current Mental Illness	0.805	0.457	1.418	0.454

Table 4: Multivariate analysis for any associations between "at-risk groups" and treatment completion rates

	Odds Ratio	95% Conf. Interval		P score
Indigenous	2.343	0.970	5.659	0.058
Prisoner	2.095	1.034	4.241	0.040
Current Mental Illness	1.290	0.656	2.536	0.459

Table 5: Lost to follow-up analysis

Discussion

Chronic HCV is a global problem1-2 and the leading cause of liver fibrosis, cirrhosis, and liver-related morbidity and mortality in the world. Restriction of treatment occurs unconsciously through delivery modality biases even in our modern health care systems. In Australia, there is new data demonstrating an increased burden of chronic HCV infection among specific priority populations, with the incidence ratio of hepatitis c among Aboriginal and Torres Strait Island people increasing between 2015-2017, and 12% of all new chronic HCV diagnoses occurring in correctional facilities 7.

In the Australian Chronic Hepatitis C Observational Study (ACHOS), the overall SVR was 59.5% (327/550)8. This institution's SVR (for patients not lost to follow up) was 60.1% (110/183) which is comparable. ACHOS cohort excluded patients who had previously received treatment, and also those lost to follow up. Their SVR was a 12-week post treatment completion blood test, rather than the standard 24-week post treatment blood test recommended (and used at this institution). In comparison, despite the lost-to-follow up rates at this institution, there was robust data in this single-centre cohort study to support the offering of treatment to a wide-range of patients who are both vulnerable and often perceived to be unlikely to achieve a cure.

Conclusion

These results indicate chronic HCV sufferers can achieve equal treatment completion rates regardless of the treatment setting, indigenous status or whether they have a current mental illness. This is despite the data in this study showing that prisoners and indigenous patients were more likely to be lost to follow up. These results contradict misconceptions about patients' suitability for treatment, reinforcing the need for expanded treatment settings for infected patients.

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