Vancouver Infectious Diseases Centre

National CIHR Research Training Program in Hepatitis C
Subvention nationale de formation des IRSC sur l'hépatite C

Evaluation of HCV Infection in Active Injection Drug Users

Presented by: Arshia Alimohammadi
aarshia@alumni.ubc.ca

Acknowledgments

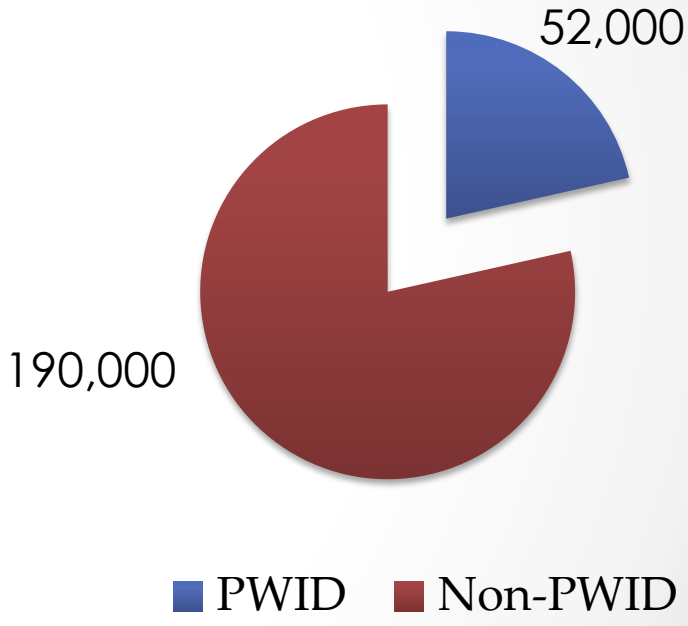
- National CIHR Research Training Program in Hepatitis C
- INHSU Scholarship Committee
- Thank you to my mentor, Dr. Brian Conway and the rest of the VIDC staff for all the support

Prevalence and Incidence

- Approximately 242,000 Canadians are living with chronic hepatitis C, and a significant portion of this population are **People Who Inject Drugs** (PWID)[1]

- HCV infected PWID make up 66% of the entire PWID population[1]

- Every year In Canada, approx. 8,000 new HCV infections are diagnosed, of which 6,600 are PWID[1]



1.Public Health Agency of Canada. Hepatitis C in Canada: 2005-2010 Surveillance Report. Centre for Communicable Diseases and Infection Control, Infectious Disease Prevention and Control Branch, Public Health Agency of Canada; 2011.

Treatment Guidelines

- Past Canadian treatment guides recommend an abstinence period of at least 6 months[2]
- Current guidelines do not call for abstinence periods[3]
- AASLD and EASL support treatment of PWID and advise treatment in a multidisciplinary setting[4][5]
- Australian National Hepatitis C Strategy (2014-2017) also calls for enhanced care of PWID and defines them as a "Priority Population"[6]

2.Coffin CS, Fung SK, Ma MM. Management of chronic hepatitis C: consensus guidelines. *Can J Gastroenterol*. 2012;26(12):917-938. http://www.ncbi.nlm.nih.gov/pubmed/23248795 **3**. Myers R, Ramji a, Bilodeau M, Wong S, Feld J. An update on the management of chronic hepatitis C: Consensus guidelines from the Canadian Association for the Study of the Liver. *Can J Gastroenterol*. 2012;26(6):359-375 **4.** Control D. Hepatitis C Guidance: AASLD-IDSA Recommendations for Testing, Managing, and Treating Adults Infected with Hepatitis C Virus. *Hepatology*. 2015:n/a - n/a. doi:10.1002/hep.27950 **5.** Pawlotsky J-M, Al E. EASL Recommendations on Treatment of Hepatitis C 2014. *ILC 2014 London*. 2014;63:199-236 **6.** Lissen E, Pineda J a. *Hepatitis C*. Vol 9.

Current Practice

- Despite new guidelines, some physicians still adhere to old models requiring a 6-12 month period of abstinence before HCV treatment is considered

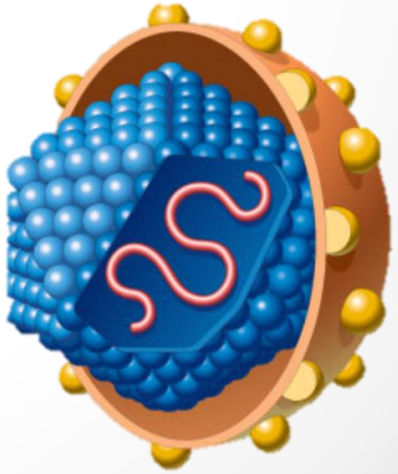
- Legitimate concerns include:
  - Adherence
  - Ongoing drug use
  - Relapse to drug use
  - Risk of exacerbation of co-morbid psychiatric issues
  - Risk of reinfection

- STIGMA: Do not treat them, "they [PWID] will just relapse".

Hypotheses

- HCV regimens are effective in treating current PWID when delivered within a multidisciplinary setting

- There is **no rationale** to support a 6-12 month drug-free period before HCV treatment is considered in PWID



Inclusion Criteria

- Chronic HCV infection with any genotype
- Injection of any form of recreational drug within 6 months of commencing HCV treatment
- No specific age, race or gender-related inclusion criteria
- The goal was to select for heavy PWID, injecting during treatment – our most "difficult" patients.

Our Model of Care

- Medical Needs
- Physiological/Psychiatric needs
- Addiction-related needs
- Social needs

Data Collected

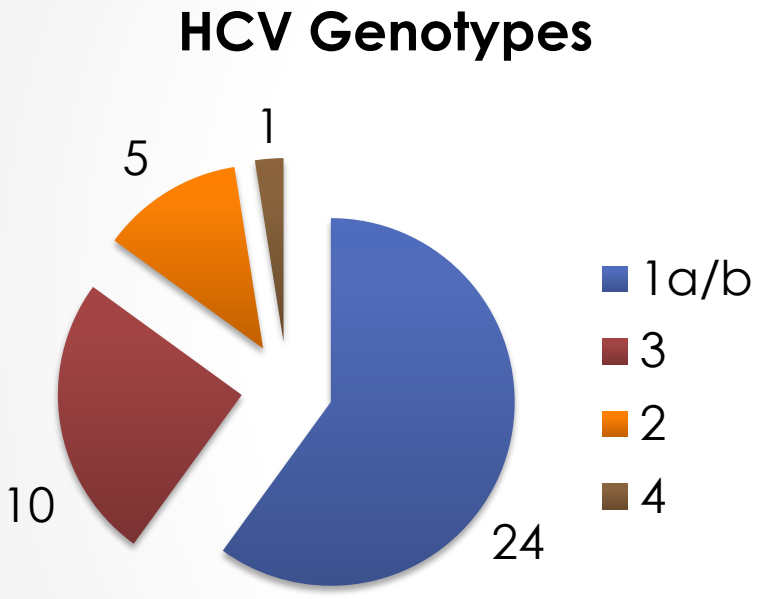
- Patient data were collected, through chart review, for individuals that met the inclusion criteria, such as:
  - Demographics
  - Infection statistics
  - Treatment statistics
  - Liver condition and fibrosis assessments
  - Injection drug use history
  - Psychological conditions

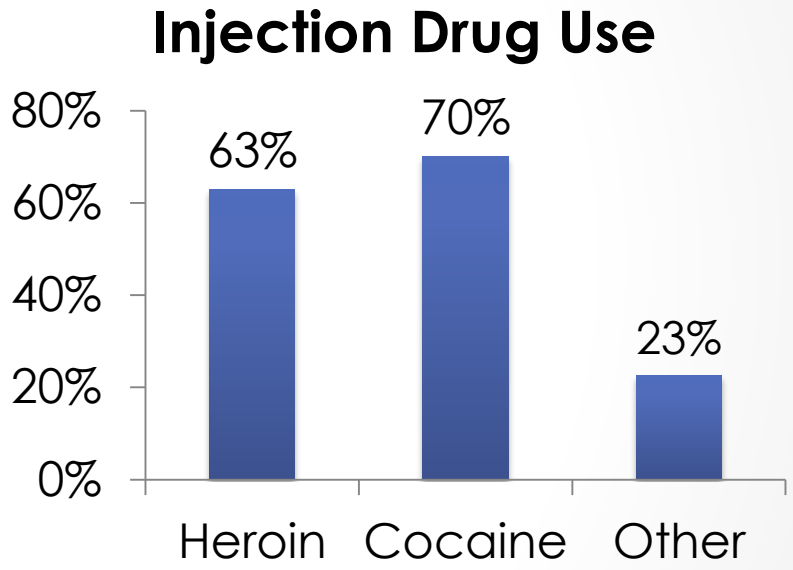
Endpoint

- Primary study endpoint: achievement of sustained virologic response (SVR)
  - Undetectable HCV RNA 12 weeks post-treatment
- Correlates of SVR by statistical analysis:
  - Recreational drug use
  - Demographic variables
  - All-oral vs. IFN-based HCV therapy
  - HCV genotype

Results

- N = 40 (median age 53 years)

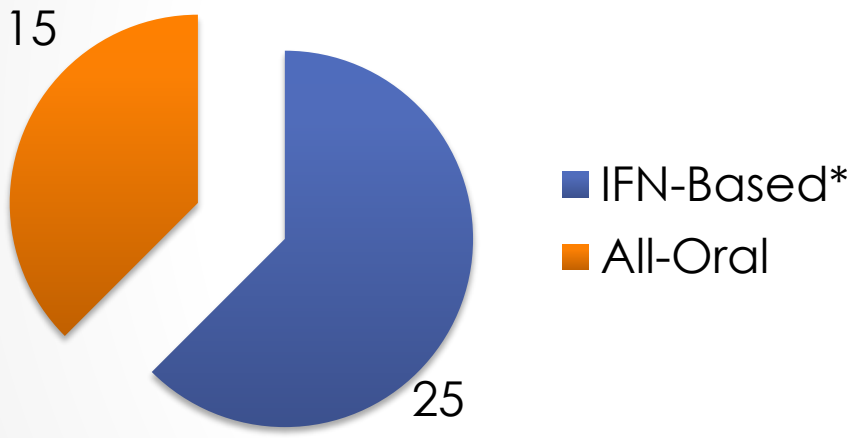




- 11 (28%) co-infected with HIV
- 23 (58%)on opiate substitution therapy
- 11 (28%) cirrhotic

Results (cont.)

Regimen Distribution

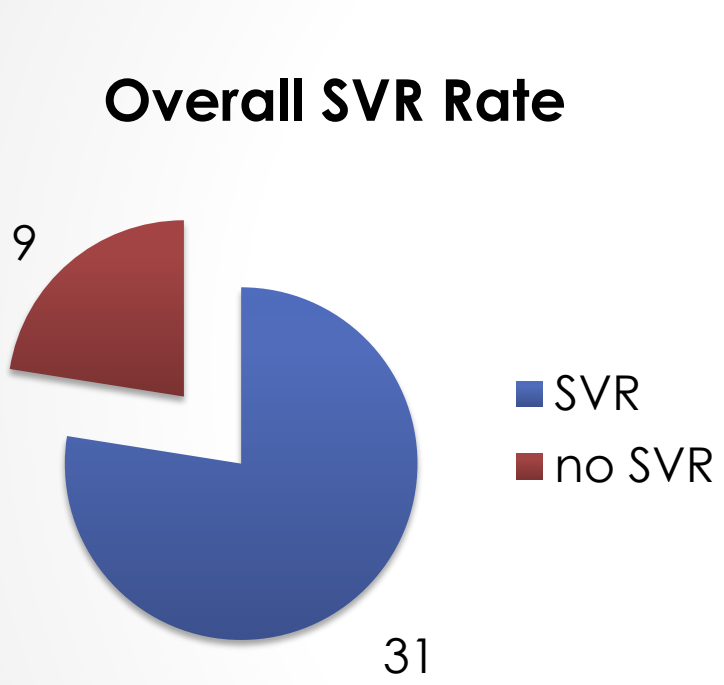


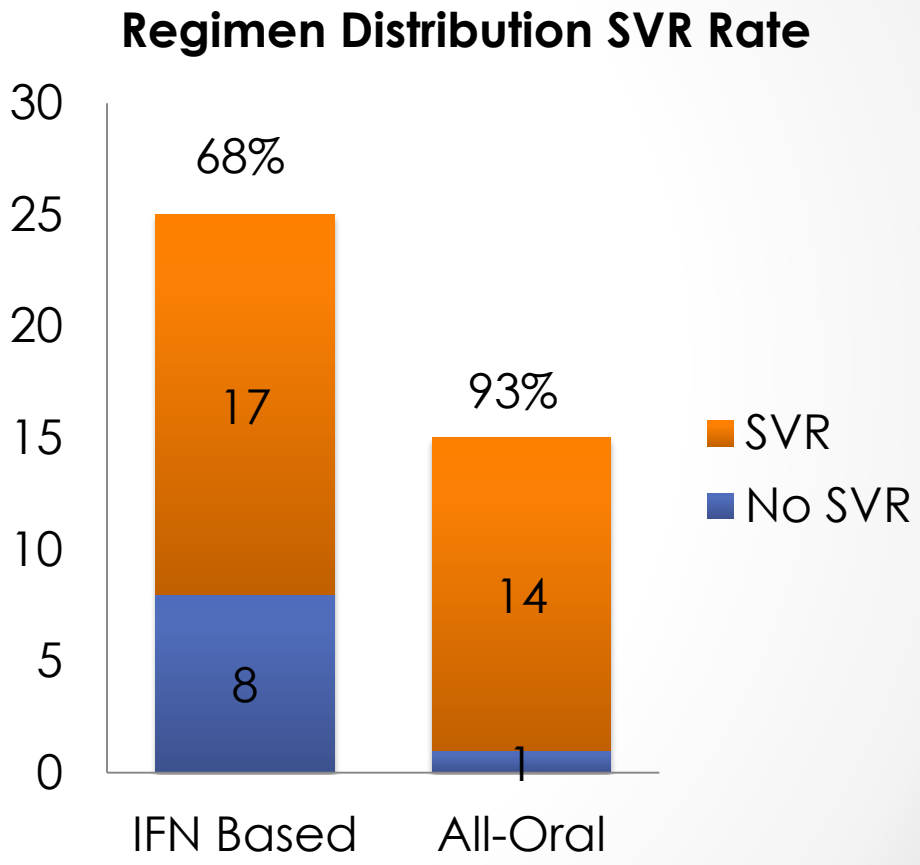
*

N=25

10 (40%): IFN/RBV
9 (36%): IFN/RBV/Oral
6 (24%): Other research based regimens

Results (cont.)





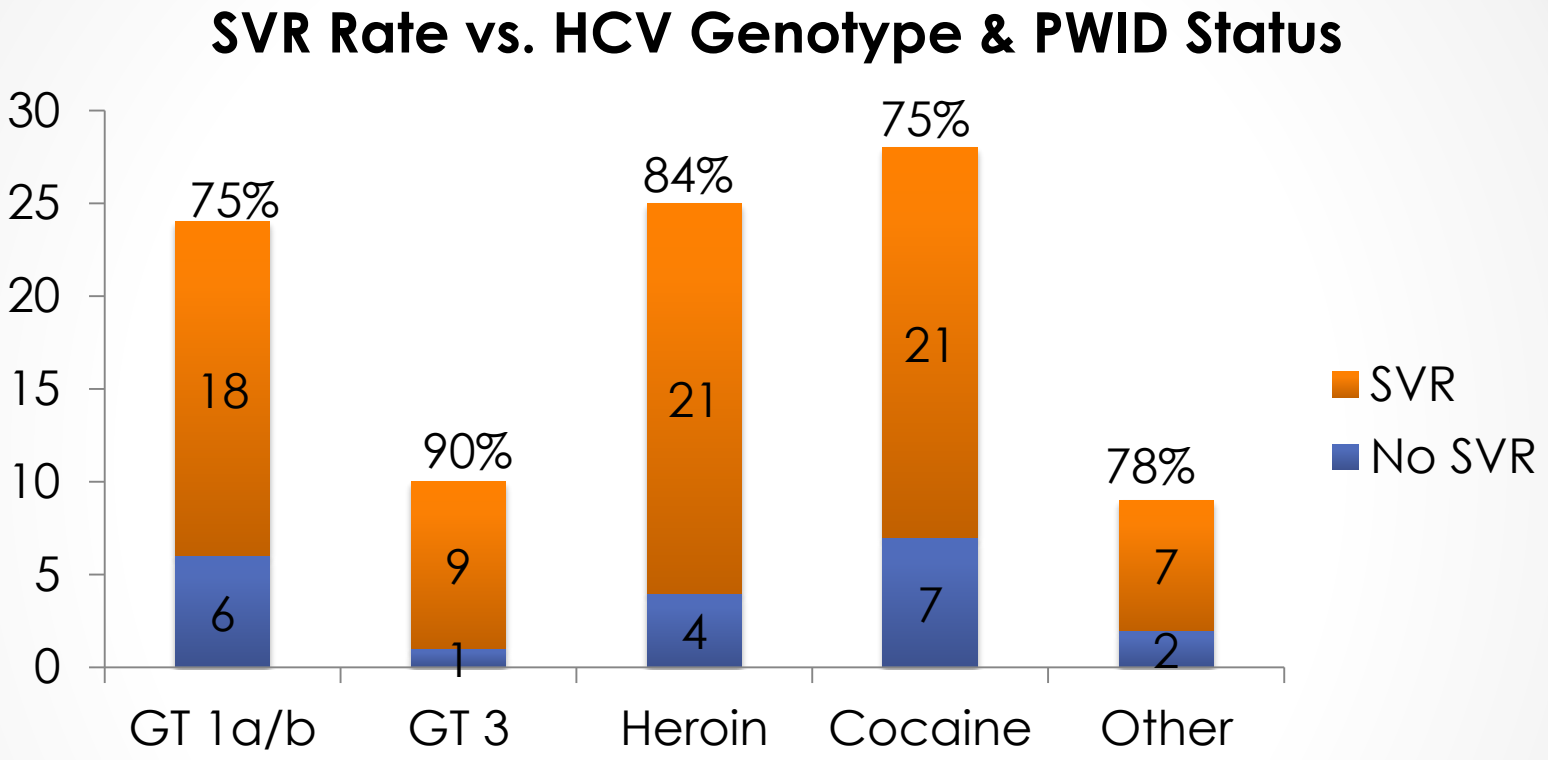
*** P < 0.05 favoring all oral regimens

All-Oral SVR Failure

- 1 patient failed to achieve SVR

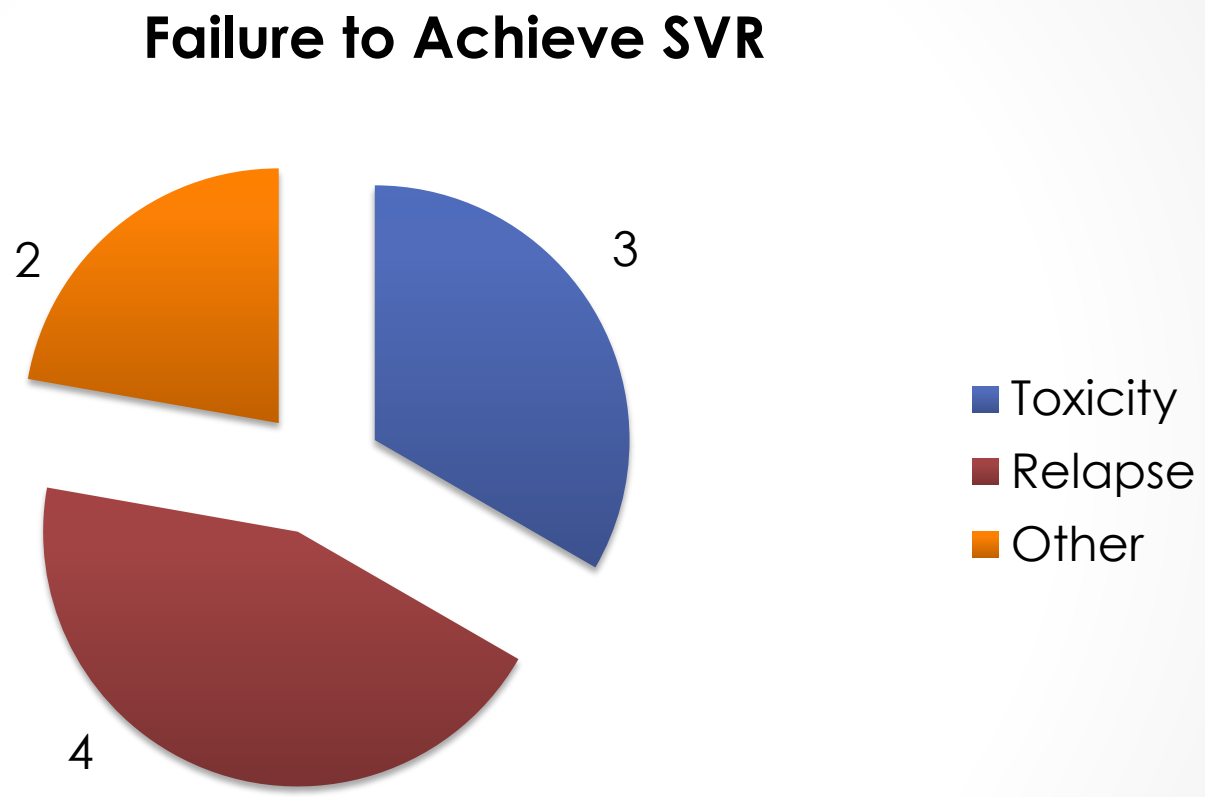
- Patient profile:
  - 59 year-old male
  - GT 3a
  - HCV load : 7.13 (Log10 IU/ML)
  - Cirrhotic
  - On 4th course of treatment
  - Prescribed SOF/RBV
  - Relapse

Results (cont.)



- 100% SVR for GT 4
- 3/5 GT 2 achieved SVR
  - 2 non-SVR patients were on older, short-term (12wk) IFN/RBV regimens

Results (cont.)



Recurrent Viremia

- PWID have a high chance of becoming re-infected with HCV through needle use.

- In our multidisciplinary setting, with an average of 560 days of follow-up per patient, there were no cases of recurrent viremia.

Discussion

- VIDC has developed a unique model of multidisciplinary care for the diagnosis and treatment of HCV-infected PWID living in the inner city.
- We have evaluated a subset of active PWID to establish whether the model (with enhanced outreach services) would be successful in a more "difficult" population
- SVR rates remained high
- No demographic or behavioral correlates of failure to achieve SVR were identified

Conclusion

- Heavily active PWID can be effectively treated for HCV infection with high SVR rates
- All-oral regimens are especially effective and will be an important tool of engagement in this population going forward (Using the medical system as a tool for positive social change)
- With structured post-treatment follow-up, rates of recurrent viremia can be minimized.
- Based on this success, we aim to utilize our model to increase treatment uptake in high-risk populations of "core transmitters" of HCV infection.