

Comparison of HCV Recurrent Viremia Rates in All-Oral and Interferon-Based Regimens

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Acknowledgments

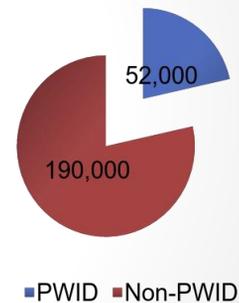
- National CIHR Research Training Program in Hepatitis C
- INHSU Scholarship Committee
- Thank you to my mentor, Dr. Brian Conway and the rest of the VIDC staff for all the support

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Background: Prevalence and Incidence

- Approximately 242,000 Canadians are living with chronic hepatitis C, and a significant proportion 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 among active/recent 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. ● 3

Background: Treatment Guidelines

- Past Canadian guidelines recommend PWID be abstinent for 6 months before being considered for HCV treatment^[2]
- Current Canadian guidelines do not call for such an abstinence period^[3]
- AASLD & EASL support treatment of PWID and within 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*® 4 C. Vol 9.

Hypotheses

- Our previous data show low rates of HCV reinfection among PWID successfully treated for HCV infection (poster 4)
- We hypothesize that widespread use of all oral regimens for the treatment of HCV infection in this population will lead to higher SVR rates with a low reinfection rate, similar to that demonstrated among PWID treated with IFN-based regimens in our centre

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Inclusion Criteria

- Chronic HCV infection with any genotype
- Documented active PWID during HCV therapy
- Achievement of SVR with either interferon-based or all-oral regimens prior to May 2016
- No specific age, race or gender-related inclusion criteria

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Methods: Model of Care

The objective of the multidisciplinary program is to provide holistic medical care, addressing:

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

The program is supplemented with a weekly support group



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Methods: Data Collection

- Patient data were collected, through chart review, for individuals that met the inclusion criteria:

- Demographics
- Infection statistics
- Treatment statistics
- Liver condition and fibrosis assessments
- Injection drug use history
- Psychological conditions



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Methods: Endpoint

- Primary study endpoint: A positive HCV RNA following initial achievement of SVR
 - SVR definition: Undetectable HCV RNA 12 weeks post-treatment
- RV rate was compared between all-oral and interferon-based therapies
- Correlates of recurrent viremia by statistical analysis:
 - Recreational drug use
 - Demographic variables
 - All-oral vs. IFN-based HCV therapy
 - HCV genotype

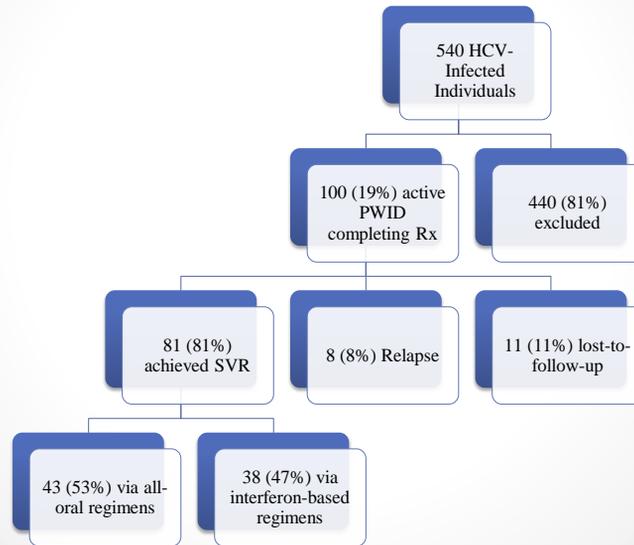
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Baseline Characteristics

	Patients
Total HCV Population (%)	540 (100)
Demographics	
Mean Age (range)	52.5 (19-76)
Male (%)	403 (75)
People Who Inject Drugs (%)	417 (77)
HCV Status	
Genotype 1 (%)	358 (66)
Genotype 2 (%)	38 (7)
Genotype 3 (%)	140 (26)
Genotype 4 (%)	1 (0.2)
Genotype 5 (%)	1 (0.2)
Cirrhotic (%)	157 (29)
HIV Co-Infected (%)	234 (43)

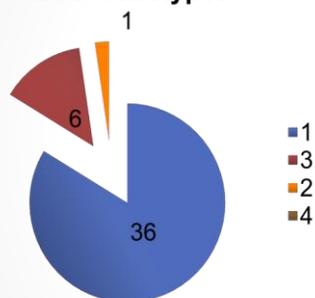
Patient Population



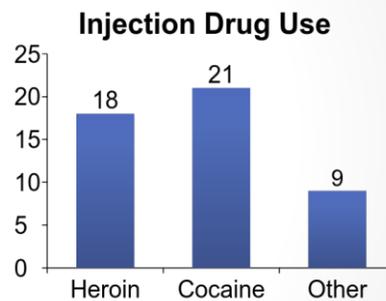
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Results: All-Oral Cohort

- N = 43 (mean age 51 years)
HCV Genotypes



- 17 (40%) co-infected with HIV
- 15 (35%) on OST
- 12 (28%) cirrhotic

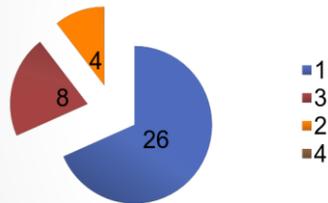


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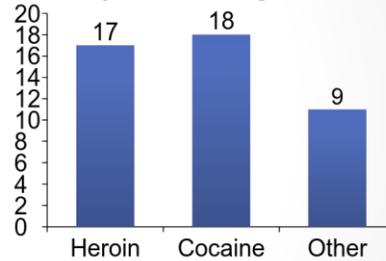
Results: Interferon-Based

- N = 38 (mean age 52.5 years)

HCV Genotypes



Injection Drug Use

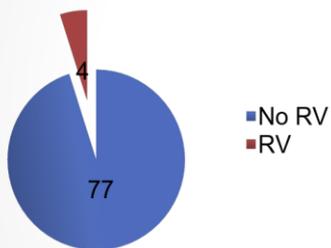


- 14 (37%) HIV co-infected
- 15 (39%) on OST
- 14 (37%) cirrhotic

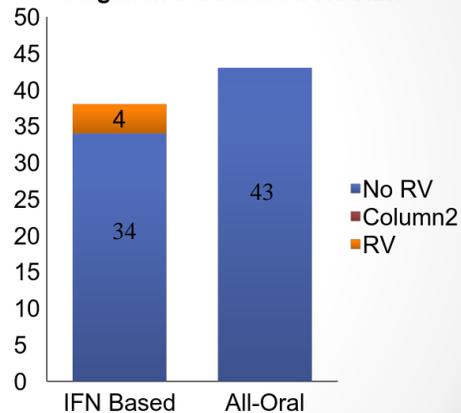
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Results: Recurrent Viremia

Overall RV Rate



Regimen Distribution RV Rate



*** P < 0.05 favoring all oral regimens

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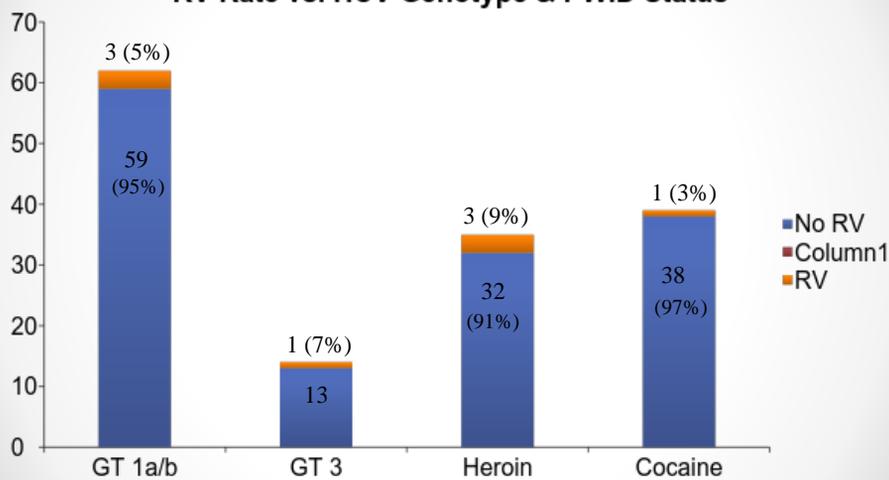
Recurrent Viremia Cases

- 4 patients (all on Interferon-based regimens) were re-infected

	#1	#2	#3	#4
Age	50	50	61	47
Sex	Male	Male	Male	Male
Genotype	1a	2b/3a	1a	1a
Drug Use	Yes	Yes	Yes	Yes
Urine Drug Screen	H, A	C, H, A	H, B, A	A
HIV Co-Infection	Yes	Yes	Yes	Yes
Support Group	No	No	Yes	Yes
Psychiatric Illness	No	Depression, bipolar	Depression	Schizophrenia

Results (cont.)

RV Rate vs. HCV Genotype & PWID Status



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 monitor rates of recurrent viremia after successful HCV therapy.
- Previous analyses suggest rates of recurrent viremia of 1.2/100 person-years in our population of active PWID.
- All oral regimens administered to active PWID at our centre have produced per protocol SVR rates of 92% (poster 29).
- To date , we have observed no cases of reinfection in this group, disproving the hypothesis that shorter course treatment with less health care interventions may be associated with more persistent risk behaviors in this population.

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Conclusion

- Within a multi-disciplinary holistic healthcare model, all-oral regimens for HCV treatment of active PWID is not associated with higher RV rates compared to interferon regimens
- The components of post-treatment follow-up that contribute to this findings is the subject of ongoing investigation in our centre.
- Based on our results, we aim to utilize our model to increase treatment uptake in high-risk populations of “core transmitters” of HCV infection.

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