Learning Institute for the 6th Canadian Symposium on HCV

February 22nd 2017
Overview

1. Personal Introductions
2. Overview of the Learning Institute
3. Rapporteur Role
4. Epidemiology overview
   Emanuel Fortier MD (c) PhD (c) Universite de Montreal
5. Basic Science overview
   Annie Bernier, PhD (c ) McGill University
6. Treatment update
   Scott Anderson, Researcher/Writer, CATIE Hep C Program
7. ACNL – frontline programming overview
   Angelina Butt, HIV/HCV Services Provincial Coordinator, ACNL
8. Questions
Personal Introductions

- Lauren Charles, Access Place, Prince Albert, SK
- Barb Bowditch, Access Place, Prince Albert, SK
- Zoe Dodd, South Riverdale Health Centre, Toronto, ON
- Lindsay Jennings, PASAN, Toronto, ON
- Sandrine Brodeur, AQPSUD, Montreal, QC
- Eric Dang, Streetworks, Edmonton, AB
- Sandy-Leo Laframboise, Dancing Eagle Spirit, Vancouver, BC
- Anu Randhawa, Punjabi Community Health Centre, Brampton, ON
- Julie Beaulieu, Centre SIDE Amitié, Saint Jerome, QC
- Angelina Butt, ACNL, St. John’s, NF
Overview of the Learning Institute - Goals

Knowledge exchange

Research

Community

Policy and Practice

www.catie.ca
Overview of the Learning Institute - Goals

- Synthesize research that is relevant to the community
- Share community perspectives/ front line realities

www.catie.ca
Overview of the Learning Institute - Schedule

Thursday March 2nd      5:00-7:00
➢ Welcome and presentations
Fairmont Banff Springs

Friday March 3rd      8:00-5:00
➢ HCV Symposium
Fairmont Banff Springs

Saturday March 4th      9:00-1:00
➢ LI debrief
➢ KE tips and tools
Banff Lodge Hotel
Overview of the Learning Institute - Rapporteur role

- Input in to CATIE webinar
- Create your own KE tool and focus
Social, Cultural, Environmental, and Population Health Research
6th Canadian Symposium on HCV

Emmanuel Fortier, MD-PhD student
CHUM Research Centre – Centre Hospitalier de l’Université de Montréal
Department of Family and Emergency Medicine – Université de Montréal

CATIE Learning Institute Webinar Series – February 23rd, 2017
About me

• MD-PhD student at Université de Montréal (QC)
  Supervisor: Dr. Julie Bruneau (CHUM Research Centre)
  Co-supervisor: Dr. Jason Grebely (Kirby Institute, UNSW Australia)

• *Short injection cessation episodes as opportunities for hepatitis C prevention*
  Oral presentation (pm)
  Epidemiology project, with clinical and public health implications
Introduction

- HCV = major contributor to global burden of disease related to drug injecting:
  - ~15.9 M active PWID worldwide (<1.5% of the Canadian population);
  - ~62% PWID infected with HCV worldwide (~51% in Canada)
  - Most infections are undetected and untreated: liver fibrosis > cirrhosis
    (15-35% after 25-30 years) > failure > cancer (1-3%) > mortality
  - Indigenous and incarcerated populations are highly affected

- HCV infection occur through receptive injecting equipment sharing:
  - High transmissibility through syringe and other injecting equipment
  - ~25% spontaneous clearance, ~75% chronic
  - No protective immunity = risk of reinfection (especially among PWID)

Introduction

• Harm reduction interventions:
  – ↓ drug use, ↓ drug injecting, ↓ injecting risk behaviours
  – ↓ HIV transmission, limited role for HCV prevention
  – Examples:
    ▪ Needle and syringe programmes (evidence ++)
    ▪ Opioid substitution therapy (evidence ++)
    ▪ Information, education, counselling
    ▪ Supervised injecting facilities (!)

• Availability of simple highly-curative well-tolerated directing-acting antiviral (DAA) regimens → rates of treated PWID are suboptimal++

Barriers to addiction treatment

• Global burden of disease that results from substance use disorders:
  – Community concerns (e.g. impaired driving, drug-associated crime)
  – Major public health issue (e.g. blood-borne infections, fatal overdoses)

• Last decade: ↑ development of innovative tools to identify/prevent/treat addictive disorders (medications, psychosocial interventions, etc.)
  – OST: evidence of ↓↓ drug use, injecting and related risk behaviours

• Medical community has done a poor job of translating research into improved care:
  – Most individuals do not receive addiction care
  – Care often not consistent with evidence-based standards

Dr. Evan Wood, Professor at the Department of Medicine, University of British Columbia (BC):
Addressing barriers to integrating evidence-based public health and addiction treatment interventions
Reinfection

- PWID’s reinfection risk is low in the immediate post-treatment period, but higher during follow-up (10% after 5 years)
- HCV risk related to syringe sharing ≈ risk related to other equipment
- Injecting equipment sharing more frequent than syringe sharing
  - HCV infections attributable to equipment sharing > syringe
- Combination of HCV treatment and high syringe coverage needed to reduce significantly HCV risk
  - Few PWID have access to this combination of interventions
  - Distribution of cookers and cottons (vs. syringes only)
  - Supervised injection facilities (!)

Dr. Holly Hagan, Professor at Rory Meyers College of Nursing, New York University (NY, USA):
Strategies to enhance prevention of hepatitis C infection and reinfection in people who inject drugs
Universal access to HCV treatment

• WHO HCV goals within 10 years:
  – 80% treated, ↓90% incidence, ↓65% liver disease mortality

• Australia has established the foundation to achieve elimination of HCV:
  – High HCV diagnosis rate (80%)
  – Australian Gov. subsidisation of DAA therapies for all ø restrictions
  – All medical practitioners can prescribe DAAs
  – Well-established harm reduction framework
  – Sophisticated surveillance system to monitor/assess elimination strategies

• March – July 2016 (first 5 months): 12% with chronic HCV initiated treatment:
  – >60% with HCV-related cirrhosis, ↑↑ treatment uptake among PWID

Dr. Greg Dore, Professor at the Kirby Institute, University of New South Wales (NSW, Australia):
Universal access to Direct-Acting Antiviral therapies in Australia: Early lessons
Thank you!

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6th Canadian Symposium on Hepatitis C Virus

"Delivering a Cure for hepatitis C infection: What are the remaining gaps?"

CATIE Learning Institute Webinar – February 23, 2017
6th Canadian Symposium on HCV

The four core research areas:

• Biomedical Research
• Clinical Research
• Health Services Research
• Social, Cultural, Environmental and Population Health Research
Hepatitis C Virus

- 9.6-kb genome encodes polyprotein that is processed into 10 viral proteins
- E1, E2, core and vRNA are associated with the virion while the NS proteins and p7 are only found inside infected cells
- E1/E2 bind cell surface receptors to guide viral entry
- Virus associated with lipids derived from the host
- FDA approved DAAs target NS3, NS5A, NS5B

Nat Rev Micro. 11, 482–496. 2013
Challenges in treatment of HCV

- ~3% of the world’s population is infected with HCV
- 6 main genotypes identified with different geographic distribution and significant variations in their responses to treatment
Challenges in treatment of HCV

- Many patients remain undiagnosed, unaware of infection
- Chronic HCV infection is a leading cause of liver disease and hepatocellular carcinoma (HCC)

Adapted from Epg Health Media, 2013
1. Opening Keynote: Addressing the next challenges in virus-host interactions and liver disease – Pr. Thomas Baumert, Strasbourg

- Patients with defined genotypes, advanced liver disease or prior non responders may need alternative therapies
- Title of the symposium: “Delivering a cure for HCV: What are the remaining gaps?”
2. Imaging Immunity *in vivo* – Dr. Paul Kubes, Calgary

- Seeing is believing: microscopy and intra-vital imaging are tools to visualize events happening inside tissue
- You only see what you label
- Intra-vital imaging to study how white blood cells (immune cells) can fight pathogens or help controlling injury
Visualization of immune cells controlling injury

Green: immune cells    Red: injury
To understand the role of white blood cells in the progression of liver fibrosis and cancer.
4. IL-22 correlates with advanced liver fibrosis – Thomas Fabre, Montréal

- Identify white blood cells that control fibrosis progression
- Microscopy and murine models of hepatitis
- **Translational research** from human samples, to murine models and back to human cells
- Visualization of pro-inflammatory cells that promotes fibrosis
6th Canadian Symposium on Hepatitis C Virus

"Delivering a Cure for hepatitis C infection: What are the remaining gaps?"

Thank you and see you all in Banff!

Contact: Annie Bernier
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Hepatitis C treatment in Canada: a brief overview

CATIE Learning Institute webinar, Hep C Symposium, Banff, Alberta
Scott Anderson, hepatitis C researcher/writer, CATIE
February 23rd, 2017.
Overview

• Background
• Approved Hep C treatments in Canada
• The future of Hep C treatment
The goals of hepatitis C treatment

- To be cured of the hepatitis C virus
- To improve liver health
- To improve general health
Terms

- **Sustained virological response**— negative or undetectable hepatitis C virus (HCV) RNA test result three months after the end of treatment
  - Also called SVR12
  - Accepted as a **cure** for hepatitis C
Hepatitis C virus

- 6 genotypes
  - 1, 2, 3, 4, 5, 6
- Genotypes 1 and 3 are the most common in Canada
- It can be more difficult to cure people with certain genotypes, ex. 1a or 3
Peg-interferon

- Peg-interferon is a weekly injection
- Cure rate:
  - G1 45%
Ribavirin

- Still used in combination with some hepatitis C medications
Direct-acting anti-viral medications (DAAs)

- Different classes of drugs
  - Protease inhibitors (-previr)
  - NS5A inhibitors (-asvir)
  - Nucleotide polymerase inhibitors, NS5B inhibitors (-buvir)

- DAA combinations – more than one of the classes of drugs taken together
DAA’s that are approved in Canada

- asunaprevir (Sunvepra) + daclatasvir (Daklinza)
- daclatasvir (Daklinza) + sofosbuvir (Sovaldi)
- Epclusa (sofosbuvir + velpatasvir)
- Harvoni (sofosbuvir + ledipasvir)*
- Holkira Pak (dasabuvir + paritaprevir/ritonavir + ombitasvir)*
- simeprevir (Galexos) + sofosbuvir (Sovaldi)
- sofosbuvir (Sovaldi)*
- Technivie (paritaprevir/ritonavir + ombitasvir)
- Zepatier (grazoprevir + elbasvir)
DAA’s

Key things to know:

- High cure rates – 90% and up
- Some are only one pill per day
- Most are taken for 12 weeks
- Few side effects
- Some work against multiple genotypes
Drug formulary coverage

- Pan-Canadian purchasing alliance
  - asunaprevir, daclatasvir, Epclusa and Zepatier
  - Lowered prices for Harvoni and sofosbuvir
- BC- will cover these hepatitis C medications regardless of liver fibrosis level in 2018
- ON- will do the same in next 12 months
The future of Hep C treatment

Goals

• Even higher cure rates!
• Can treat all genotypes
• Shorter treatments (less than 12 weeks)
• No ribavirin
Promising treatments

• glecaprevir + pibrentasvir (G/P)
• sofosbuvir + velpatasvir + volixaprevir (SOF/VEL/VOX)
• MK-3682 + grazoprevir + ruzasvir (MK-3)
Resources

- www.catie.ca – Hep C in-depth guide
- Subscribe to HepCinfo Updates, TreatmentUpdate, CATIE News
- CTAC’s treatment access map- ctac.ca
Contact

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1-800-263-1638 ext. 331
AIDS COMMITTEE OF NEWFOUNDLAND AND LABRADOR
Angelina Butt, BSW, RSW
Provincial Coordinator of HIV and HCV Services
PROGRAMS AND SERVICES

 Safe Works Access Program (SWAP)
   Tommy Sexton Shelter
   Supportive Housing Program
 Education and Prevention Program
 Support and Referral Program
OTHER INITIATIVES

- LGBTQ* Youth Advisory Committee
  - Mail Out Program
- Our Voice Peer Support Forum
  - Sex Over 50 Manual
- End Homelessness St. John’s
  - Pride Outreach
  - Naloxone Kits
- Point of Care Testing
**Barriers**

- Access to Testing
- SWAP needs surpass budget
- Geographic spread
- Lack of knowledge amongst GPs
- Communication gaps with Hep C Clinic
- Access to Treatment
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Questions?