Positive impact of HCV treatment initiation on health outcomes in injecting drug users

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Introduction

- **HCV infection**: **180 million** people worldwide

- **HIV/HCV coinfection**: **4-5 million** people infected, of which approximately **90% are IDUs** (Hadigan & Kottilil, 2011, JAMA)

- **Mortality in HIV/HCV** co-infected patients is mainly due to accelerated progression to **cirrhosis** and increased **liver-related morbidity** (Merwat, 2011, Clin Liv Dis)

- Less than **3-4%** of current IDUs have ever been **treated** (Grebely, 2009, J Viral Hepat)

Introduction

- **HCV treatment in IDUs: high interest but low access**
  (Seal, 2005, J Gen Intern Med)

- **Concerns by physicians** to initiate HCV treatment in IDUs because of fear of:
  - **re-infection** related to risky drug use
  - **non-adherence** to treatment
  - **low sustained viral response**

  (Thompson, 2005, AIDS; Sylvestre, 2005, CID; Stoove, 2005, DAD)

Introduction

- However, current IDUs exhibit **similar response rates to treatment** compared to general population

  (Litwin, 2009, J Subst Abuse Treat; Hellard, 2009, CID; Dore, 2010, Gastroenterology; Zanini, 2010, Clin Ther)

- Ongoing IDUs could reach **high level of adherence** to HCV treatment

  (Wilkinson, 2009, Aliment Pharmacol Ther; Grebely, 2011, J Hepato)

Introduction

- In addition, **HCV treatment may be delayed** in HIV/HCV coinfected patients on antiretroviral therapy (ART) for fear that its burden could **compromise ART adherence**.

- However, the **effect of HCV treatment initiation on ART adherence** in observational settings remains **unknown**.

- Longitudinal data from the **ANRS-CO13 HEPAVIH** were used to better **investigate the impact of initiating HCV treatment**.

Positive impact of hepatitis C virus (HCV) treatment on antiretroviral treatment adherence in human immunodeficiency virus–HCV coinfected patients: one more argument for expanded access to HCV treatment for injecting drug users

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Objectives

- **To study correlates of non-adherence to ART in HIV/HCV coinfected patients**

- **To investigate the impact of HCV treatment initiation on adherence to ART**

The HEPAVIH French Cohort Study (ANRS-CO13-HEPAVIH)

- **Started in October 2005 in 17 hospital outpatient facilities providing care for people living with HIV and HCV in France.**

- **Enrolled patients with dual HIV-1 and HCV infections, regardless of their clinical stage, gender or transmission group.**

Data collection

- **Clinical and biological data, including plasma HIV RNA, CD4 count, and liver fibrosis score**

- **Patients' socio-demographic characteristics, HCV and HIV treatment history, alcohol consumption, drug use, depressive symptoms, self-reported treatment side-effects**

- **A set of 7 questions to assess adherence to ART**
  = 100% : adherent to ART
  < 100% : non-adherent to ART

Participants

1040 patients enrolled

Selection criteria:

being treated with ART and having data on adherence to ART

593 individuals (976 visits)

523 non-treated (853 visits)

70 treated for HCV (123 visits)

Methods 1/3

■ **Correlation between adherence to ART and initiation of HCV treatment**

Comparing adherence to ART in non-treated patients and in those who received HCV treatment during the follow-up.

⟹ **Logistic regression**

variable of interest = *time to the first prescription of pegylated interferon and ribavirin during the 3-year follow-up.*

Correlation between ART adherence and HCV initiation

No statistically significant difference between patients who were adherent to ART and those who were not in terms of access to HCV treatment (p=0.68)

No selection bias: patients who were adherent to ART were not more likely to initiate HCV treatment

Methods 2/3

- **Identification of factors associated with non-adherence to ART:**

  selection of the 593 patients accounting for
  <u>976 visits</u>

  ➡️ **Logistic regression based on Generalized Estimates Equations (GEE)**

Factors associated with non-adherence to ART
Multivariate analysis (n=593 patients, 976 visits)

Variables	Visits (%)	Patients	OR (95% CI)	p-value
Good housing conditions	808 (83%)	502	0.64 [0.42; 0.97]	0.03
HCV treatment	123 (13%)	70	0.41 [0.24; 0.71]	0.001
Binge drinking	275 (29%)	198	1.84 [1.32; 2.56]	$<10^{-3}$
Depressive symptoms	340 (38%)	238	1.62 [1.18; 2.22]	0.003
Recent drug use **No drugs (ref)** **1 drug** **2 or more drugs**	80 (8%) 42 (4%)	65 30	2.11 [1.25; 3.54] 2.35 [1.17; 4.72]	0.005 0.02

Methods 3/3

- **Comparison of positive changes in adherence to ART regarding HCV treatment status:**

Selection of 2 visits in each patient:

-Last 2 visits available in non-treated patients

-1 visit before and 1 visit after HCV initiation in HCV treated patients

Positive change = *remaining or becoming adherent to ART at the second visit*
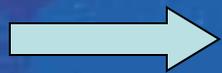
➡️ **Chi-square test**

Results 3/3

Changes in adherence to ART during follow-up regarding HCV treatment status

Non-adherence was reported in 324 visits (33.2%)

Dynamic of adherence to ART selecting 2 visits:

-in non-treated patients: 67.9% had a positive change

-in treated patients: 80.4% had a positive change

→ Trend for more positive change in HCV treated patients: p=0.07

Discussion 1/4

- **Among ART-treated HIV/HCV individuals, engaging in HCV treatment has a positive impact on adherence to ART:**

-improvements in patient-physician relationships and in follow-up by medical staff

-positive challenge for patients who are engaged in short-term treatment

- **However, some factors should be carefully considered :** social vulnerability, drug and alcohol use, depressive symptoms, and treatment related side-effects.

Discussion 2/4

- In the majority of HIV/HCV coinfected patients, **« HCV remains untreated and often owing to potentially modifiable reasons »…** (Reiberger, 2011, Antivir Ther)

- Our findings should **encourage physicians to initiate HCV treatment** in coinfected patients.

- They also show the importance of **adopting a multidisciplinary and comprehensive approach**.

Discussion 3/4

- In additional to this argument for expanded access to HCV treatment in IDUs, **a modeling analysis demonstrated the positive impact of HCV treatment on HCV prevalence in IDUs** (Martin, 2011, J of Hepatology)

→ **Effective primary prevention tool** for substantially reducing the prevalence of HCV infection

Discussion 4/4

- Today, the **new oral antiviral drugs** for hepatitis C offer promises to achieve better SVR and to tailor treatment for difficult patients.

  (Sherman, 2011, NEJM; Soriano, 2011, AIDS)

- Important to **expand access to HCV treatment** not only in industrialized countries but also in **developing countries**

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