# Real-World Efficacy of Salvage Therapies for the Treatment of Chronic Hepatitis C virus infection in treatment experienced people who inject drugs (PWID)

Brian Conway, MD, FRCPC
Vancouver Infectious Diseases Centre
201-1200 Burrard Street
Vancouver, BC V6Z 2C7 Canada
Tel: (604) 642-6429
Fax: (604) 642-6419
Email: brian.conway@vidc.ca

Arshia Alimohammadi[1], Leo Yamamoto[1], Tianna Magel[1], Kelli Wuerth[1], Brian Conway[1]
1. Vancouver Infectious Diseases Centre

## Background

Despite the high cure rates achieved with currently available direct-acting antiviral HCV therapy, treatment failure can occur in as many as 10% of individuals – often associated with the development of resistance associated substitutions (RASs). Little is known about the real-world efficacy of currently available salvage options, particularly among vulnerable populations such as PWID. The aim of this analysis was to evaluate the efficacy of sofosbuvir/velpatasvir/voxipalrevir (SVV) and glecaprevir/pibrentavir + sofosbuvir (GPS) as retreatment strategies among HCV-infected PWID.

## Methods

A retrospective analysis was performed among all HCV-infected PWID were initiated on salvage therapy at our centre between 06/17-04/19, excluding cases of re-infection. The presence of RASs was determned by sequencing prior to HCV re-treatment. All subjects were enrolled in a multidisciplinary model of care, addressing medical, psychologic, social and addiction-related needs. The primary outcome was SVR12 (undetectable HCV RNA 12 weeks after the end of treatment).

## Results

A total of 13 individuals were included in this analysis, mean age 56 years, 77% male, 77% Caucasian, 62% homeless, 54% actively using drugs during treatment (75% opiates, 50% amphetamines) and 46% on opiate substitution therapy. Virologic characteristics include 46% GT1a, 31% GT3a, 8/10 patients with available data demonstrating RASs conferring NS5A and/or NS3 resistance. The outcome of initial therapy was true virologic relapse (n = 10) or non-response (n = 3); 11 patients received SVV while 2 received GPS. SVR12 was documented in all 13 patients.

**Table 1. Patient Demographics**

| Parameter | Value [n=13] |
|---|---|
| Mean Age (years) | 56 |
| Male | 10 (77%) |
| Caucasian | 10 (77%) |
| Homeless | 8 (62%) |
| Active drug use | 7 (54%) |
| Opiate substitution | 5 (46%) |
| Treatment experienced | 13 (100%) |

**Table 2. Drug Use Data**

| Parameter | Value [n=13] |
|---|---|
| Active Drug use | 7 (54%) |
| Past (non-active) drug use | 6 (46%) |
| Cocaine only | 10 (77%) |
| Amphetamines only | 8 (62%) |
| Opiated only | 7 (58%) |
| Multi-drug use | 5 (46%) |

**Fig 1. Resistance Data**

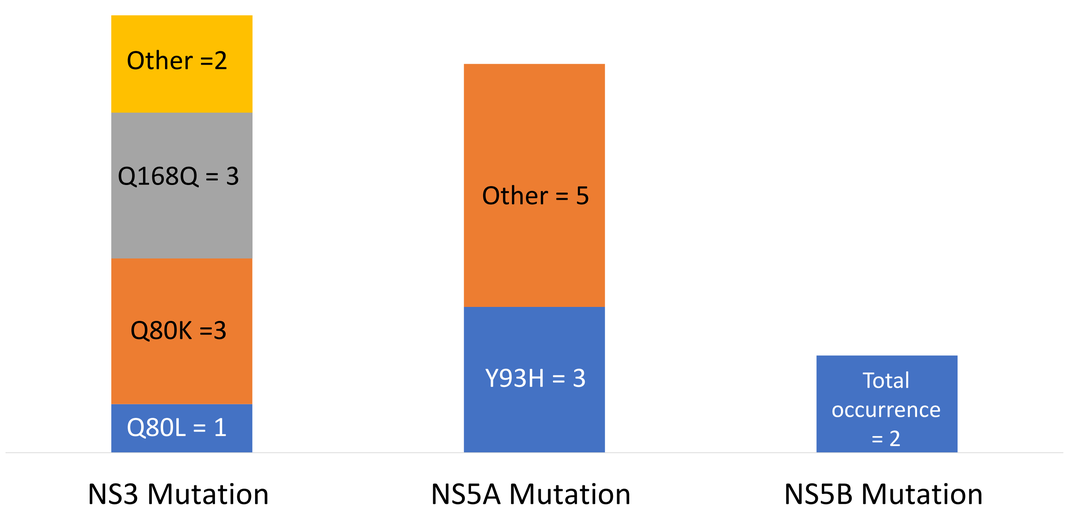


**Table 3. Treatment Data**

| Parameter | Value [n=13] |
|---|---|
| Genotype<br>• 1a<br>• 2a/ac<br>• 3a<br>• 4 | <br>6 (46%)<br>2 (15%)<br>4 (30%)<br>1 (8%) |
| sofosbuvir/velpatasvir/ voxipalrevir | 11 (85%) |
| glecaprevir/pibrentavir + sofosbuvir | 2 (15%) |
| SVR-12 | 13 (100%) |

## Conclusion

Even with highly effective regimens for the treatment of HCV infection, some patients still fail initial therapy and require re-treatment. This may prove challenging, especially among PWID. We have demonstrated that even in this challenging population, the administration of salvage therapy with either SVV or GPS in the context of a multidisciplinary model of engagement in care is highly successful. These data provide further support for initiation of HCV therapy in PWID, even among individuals having failed first line DAA therapy.