

# Strategies to Manage the HCV Disease Burden in Slovenia

Matičič M<sup>1</sup>, Gunter J<sup>2</sup>, Sibley A<sup>2</sup>, Gregorčič S<sup>1</sup>, Videčnik Zorman J<sup>1</sup>

<sup>1</sup> Clinic for Infectious Diseases and Febrile Illnesses, University Medical Centre Ljubljana, Slovenia  
<sup>2</sup> Center for Disease Analysis, Louisville, Colorado

## BACKGROUND & OBJECTIVES

**Background.** In Slovenia, a country of two million inhabitants, the HCV RNA prevalence is low, estimated to 0.31 % (6500 cases) in the year 2014 [1, 2]. The predominant HCV genotypes found are G1 and G3, with young people aged between 25-30 years being most commonly affected (Figure 1) and drug injection representing the highest risk of acquiring HCV infection [1]. However, among approximately 10 000 people who inject drugs (PWID) the HCV seroprevalence has been estimated at the third-lowest rate in Europe: 27.3% [3]. Slovenia has formulated the national strategy for the management of HCV infection already in 1997. Since then it has been guided by the self-founded National Viral Hepatitis Expert Group, drawing on best practices and standards of care. HCV treatment in Slovenia is performed at five centers for viral hepatitis. It is fully publicly funded and is provided with no limitations except for one: it has to be prescribed by viral hepatitis specialists in accordance with the national consensus guidelines. The guidelines do not exclude PWID from HCV treatment; to achieve optimal treatment results a national multidisciplinary healthcare network for the management of HCV infection in PWID was introduced in 2007 integrating five viral hepatitis centers and 18 drug treatment centers around the country [4]. In 2015, all currently recommended medications for HCV treatment are available in Slovenia and used according to the national consensus guidelines.

**The objectives** of the study were to examine HCV-related disease burden in Slovenia and to evaluate strategies required to control disease burden or eliminate HCV disease.

## METHODS & KEY INPUTS

- HCV disease progression was modeled using age- and gender-defined cohorts to track HCV incidence, prevalence, hepatic complications, and mortality due to HCV infection.
- Baseline assumptions and transition probabilities were extracted from the literature and validated by viral hepatitis experts from Slovenia.
- The estimated anti-HCV seroprevalence in Slovenia was 0.4%, with the viremic rate of 78.3 [1].
- Anti-HCV seroprevalence among PWID in Slovenia was 27.3% [4].
- The genotype distribution used was 56% for G1, 5% for G2, 37.8% for G3, and 1.2% for G4 [1].
- The data from the referential HCV laboratory revealed approximately 3,300 HCV RNA positive cases being diagnosed by the year 2014.
- Approximately 1700 hepatitis C cases have already been treated according to expert opinion.
- In 2014, 31 liver transplants were performed in Slovenia, 7% due to HCV infection.

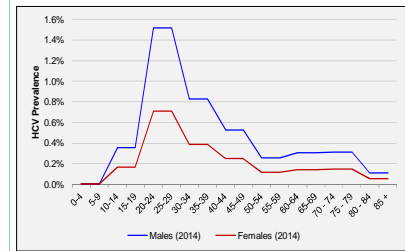


Figure 1. Age and gender distribution of HCV infection [2].

## RESULTS

The impact of different diagnosis and treatment scenarios was considered to be performed by various endpoints, ultimately by the year 2030 (Table 1, Figures 2, 3).

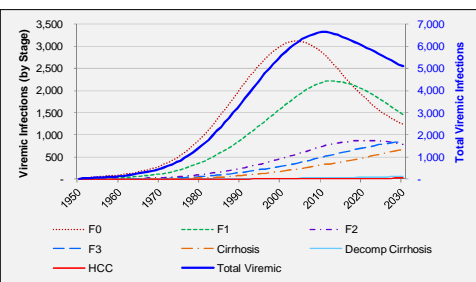


Figure 2. Projected disease burden for the base case.

	Base	Double treatment in 2017	Triple treatment in 2017	Eradication
<b>Scenario inputs</b>				
Diagnosed / yr	170	170	200	350 by 2026
Treated / yr	150	300	450	590 by 2026
<b>Estimated outcomes</b>				
Viremic in 2030	5090	3500 (-30%)	1900 (-60%)	500 (-90%)
Decompensated cirrhosis in 2030	62	36 (-40%)	14 (-75%)	9 (-85%)

Table 1. The impact of different diagnosis and treatment scenarios.

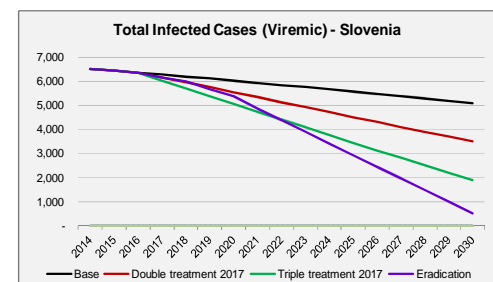


Figure 3. Changes in viremic cases with increased diagnosis & treatment rates.

## CONCLUSIONS

- Scaling up diagnosis and treatment rates gradually from 2016-2026 could result in a 90% decline in HCV prevalence in Slovenia and greatly reduce liver-related deaths in the country.
- The projected impact of scenarios such as these facilitates disease forecasting, resource planning, and rational strategies for HCV management in Slovenia.
- Access to HCV treatment in Slovenia is excellent, but we estimate that not everyone infected is aware of their disease. Screening for HCV infection in general population should be encouraged, in order to identify all chronic infections and provide them with treatment.

## REFERENCES

[1] Seme, K, Vrhovac M, Mocilnik T, Maticic M, Lesnicar G, Baklan Z, Volkar JM, Rajter M, Stepec S, Lunar M, Poljak M. Hepatitis C virus genotypes in 1,504 patients in Slovenia, 1993-2007. J Med Virol 2009; 81: 634-639. [2] Kopilović B, Poljak M, Seme K, Klavs I. Hepatitis C virus infection among pregnant women in Slovenia: study on 31,849 samples obtained in four screening rounds during 1999, 2003, 2009 and 2013. Euro Surveill 2015; 20: 21144. [3] EMCDDA. National Report: Slovenia. 2013. [4] Matičič M. A national multidisciplinary healthcare network for treatment of hepatitis C in people who inject drugs in Slovenia. BMC Infect Dis 2014; 14 Suppl 6: S6.