

Hospital Costs of Thrombocytopenia Related to Hepatitis C Virus Infection : Analysis of the French Hospital Discharge Database

L. Levy-Bachelot (1), A. Vainchtock (2), M. Rotily (2)
(1) GlaxoSmithKline, Marly-le-Roy, France; (2) HEVA, Lyon, France.

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Background

Thrombocytopenia (TCP) is a common complication of HCV infection (Wang, 2004; Louie, 2011), particularly among those with advanced liver disease (liver cirrhosis and cancer), which make numerous HCV patients ineligible to treatment. In clinical trials of interferon-based therapy, more than one third of patients experience a decrease in platelet counts, which may lead to dose reductions, interruption, or discontinuations of interferon, potentially jeopardizing the chances of achieving sustained virologic response. The aging of HCV patients suggests that the burden of advanced liver disease (and TCP consequently) continue to increase. No data are available on the TCP burden in HCV patients in France.

Objective: To estimate the costs related to thrombocytopenia in HCV patients hospitalized in France.

Methods

- All hospital stays including both D69.* and B18.2 ICD-10 diagnosis codes (thrombocytopenia [all causes] and chronic hepatitis C, respectively) were extracted from the 2011 French Hospital Discharge Database (PMSI).
- Two main groups have been constructed.
- CORE TARGET : TCP was the main objective of hospitalization.
 - Principal or Related Diagnosis [PD, RD] was D69.3 (Idiopathic thrombocytopenic purpura) OR D69.4 (Other primary thrombocytopenia) OR D69.5 (Secondary thrombocytopenia) OR D69.6 (Thrombocytopenia, unspecified), AND Secondary Associated Diagnosis [SAD] was B18.2 (Chronic Hepatitis C)
 - PD OR RD was B18.2 AND the only SAD was D69.3 OR D69.4 OR D69.5 OR D69.6
- NON CORE TARGET : HCV-related complication was the main objective of hospitalization, together with TCP as one of the SADs.
 - CIRRHOTIC GROUP: PD OR PR was = K74.6 (liver cirrhosis) AND ([SAD was D69.3 OR D69.4 OR D69.5 OR D69.6] AND [SAD was B18.2])
 - OTHER HCV-RELATED COMPLICATION GROUP: PD OR PR was HCV complication (other than liver cirrhosis K74.6) AND ([SAD was D69.3 OR D69.4 OR D69.5 OR D69.6] AND [SAD was B18.2])
- Exclusion of stays related to HCV-liver transplantation.
- Hospital costs calculated for each stay, according to French official price lists, and expressed in 2012 euro.
- Data extractions and analysis performed following French regulations.

Results

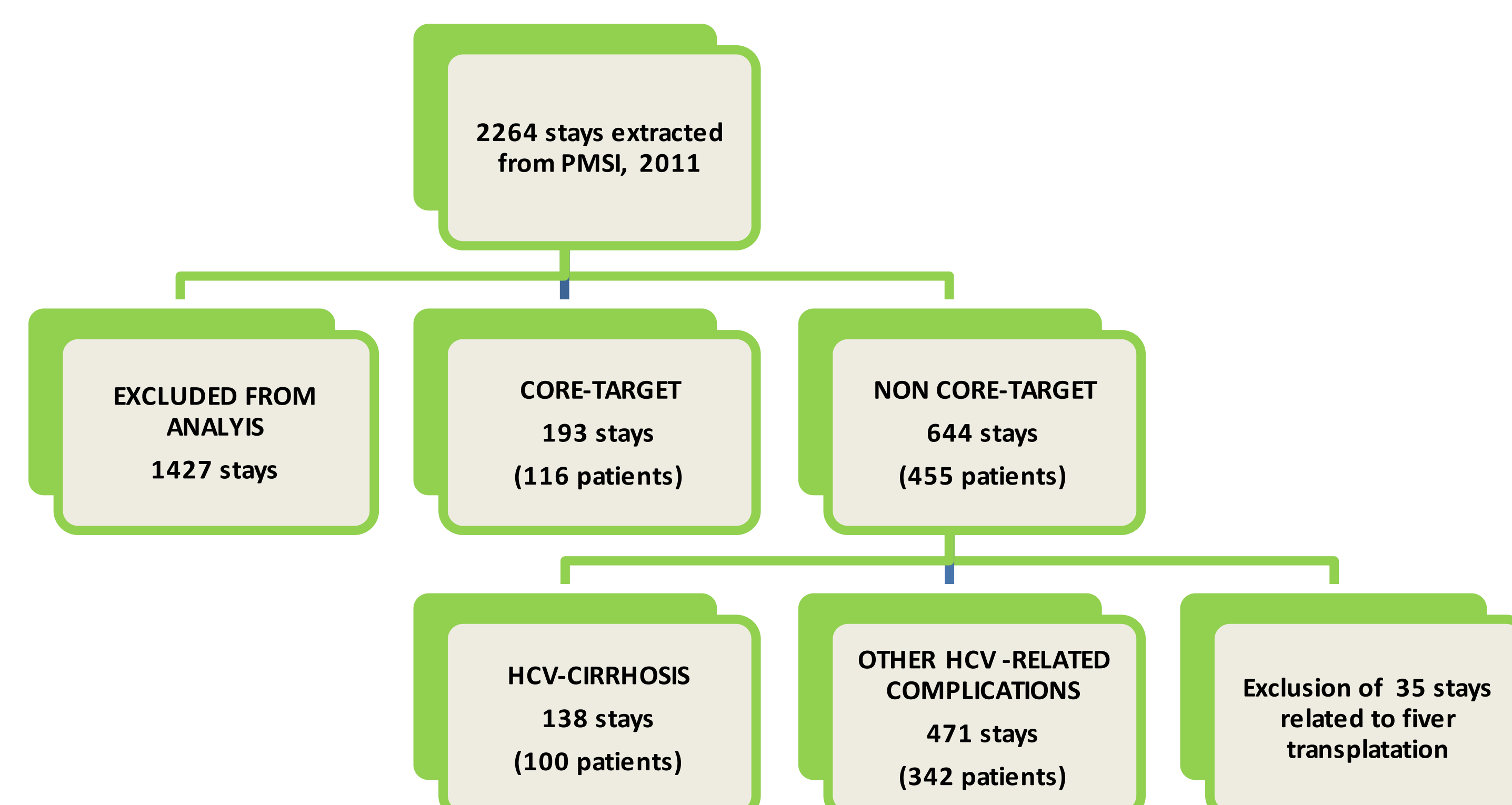


Figure 1: Population analysis

	Male	Female	Mean Age (y.)
Core Target	59%	41%	55
Non Core Target			
Cirrhosis	64%	36%	62
Other complications	64%	36%	56
TOTAL	63%	37%	56

Table 1: Population characteristics

For all patients, the total annual cost of stays related to TCP in France, 2011, was 2,751,991€.

The mean per year per patient (PPPY) cost of HCV infected patients hospitalized for TCP was estimated at 3,241 € (core target). Among the core target group, 63 patients (56%) received at least one expensive drug, mean cost 4, 439€ (median cost: 3,595€).

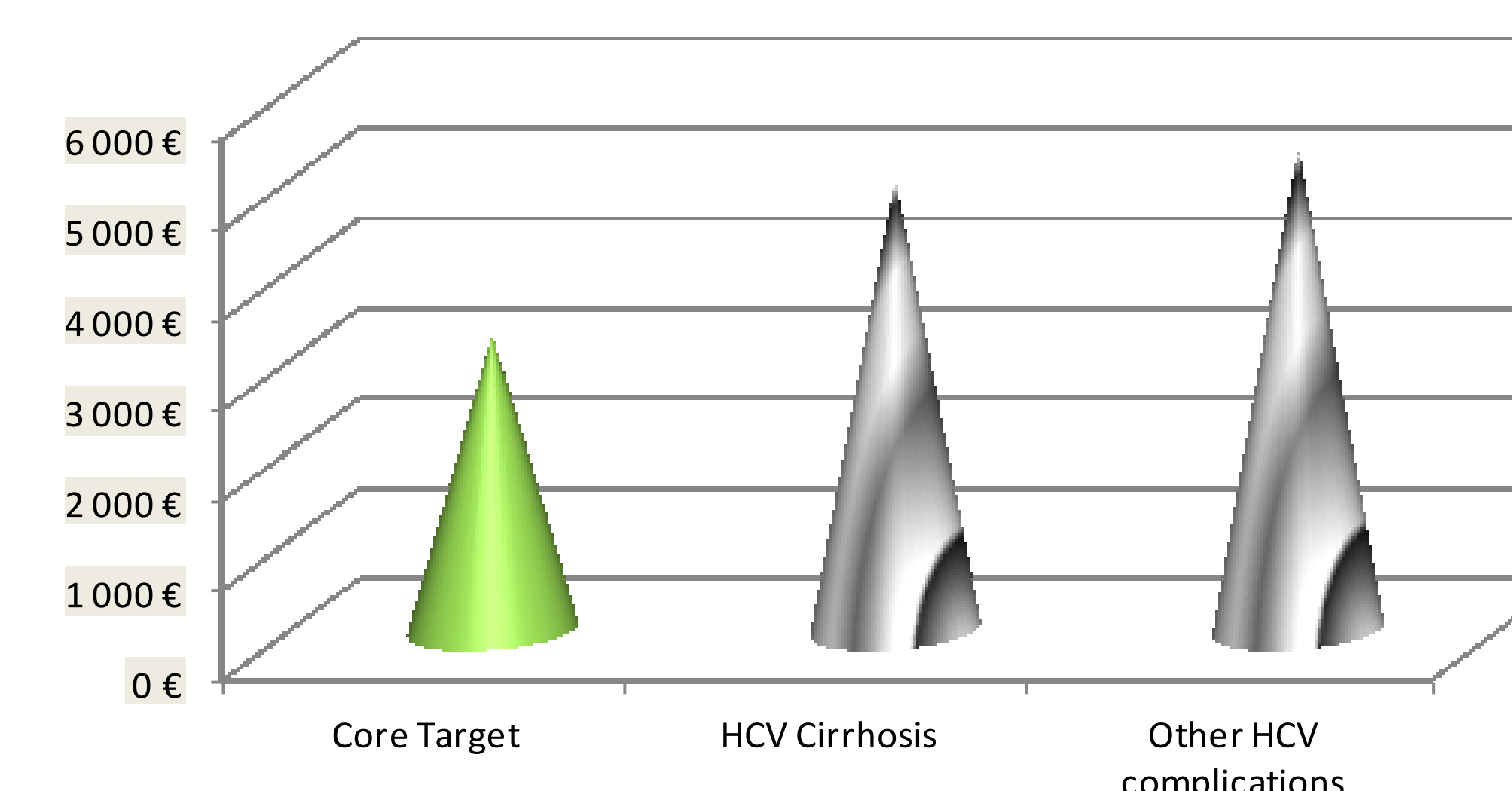


Figure 2: Per Year Per Patient Hospitalization Cost according to diagnosis (euro 2012)

Discussion

- Reliability of ICD-10 coding for TCP could vary according to diseases/complications and hospitals.
- Disease-specific data are not included in the French hospital discharge database (originally designed for economical purpose, and not for epidemiology) such as viral genotypes, disease history, route of transmission....
- Impossibility to disentangle the costs due to TCP and those due to HCV.
- External consultations in hospitals, and interferon and ribavirin therapies not included.

Conclusion

When compared to other studies on HCV related costs, the per-patient-per-year cost of HCV-infected inpatients with thrombocytopenia is higher than in patients hospitalized for non-complicated HCV in France, 2009 (1,080 €), which corroborates other findings showing that HCV patients with thrombocytopenia have higher liver disease-related costs than patients without thrombocytopenia.

References

- Wang *et al.* Clin Infect Dis. 2004 Sep 15;39(6):790-6
- Louie *et al.* J Viral Hepati. 2011 Jan;18(1):1-7

59% of HCV infected patients referred to French hospitals in 2011 for thrombocytopenia were male.
The mean age of patients was 55 years.

		Hospitalization Costs		
Stays		Mean	Median	Total
		2 036 €	893 €	392 910 €
Stays	Core Target (n=193)			
	Non Core Target			
	Cirrhosis (n=138)	3 619 €	1 373 €	499 451 €
Patients	Other complications (n=471)	3 948 €	2 486 €	1 859 630 €
	Core Target (n=116)	3 241 €	1 573 €	392 910 €
	Non Core Target			
	Cirrhosis (n=100)	4 965 €	3 367 €	499 451 €
	Other complications (n=342)	5 304 €	3 603 €	1 859 630 €

Table 2: Hospitalization costs per stay, per patient, per year, in inpatients infected with HCV and thrombocytopenia (euro 2012)

The per year per patient hospitalization cost increased from 3,241 € in chronic hepatitis C patients hospitalized only for thrombocytopenia (core target) to 4,965 € and 5,304 €, in patients with HCV-cirrhosis and HCV-complications, respectively.

