

DURATION AND COSTS OF HYPOPARATHYROIDISM AFTER TOTAL THYROIDECTOMY FOR THYROID CANCER: A FRENCH NATIONWIDE CLAIMS DATABASE STUDY (1-YEAR FOLLOW-UP) – EE590

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Objectives

Hypoparathyroidism is the most common complication of total thyroidectomy for thyroid cancer. The resulting hypocalcemia may be transient or permanent and require calcium and/or vitamin D supplementation. Our aim was to investigate the duration of hypoparathyroidism subsequent to the total thyroidectomy and assess its 1-year economic burden in France.

Methods

Data source :

Cancer cohort including all cancer patients diagnosed since 2010 extracted from the large French database of health insurance claims (SNDS) that encompasses the hospital and outpatient healthcare consumptions.

Patients population :

Adult patients (≥ 18 years) who underwent a total or completion thyroidectomy for cancer between 2011 and 2015.

Primary measures :

- Postoperative hypoparathyroidism: calcium±vitamin D supplementation started within the 1st postoperative month (as a proxy for hypoparathyroidism) or hospitalization for severe hypocalcemia.
- Health expenditures during the 1st postoperative year and costs from the payer's perspective.

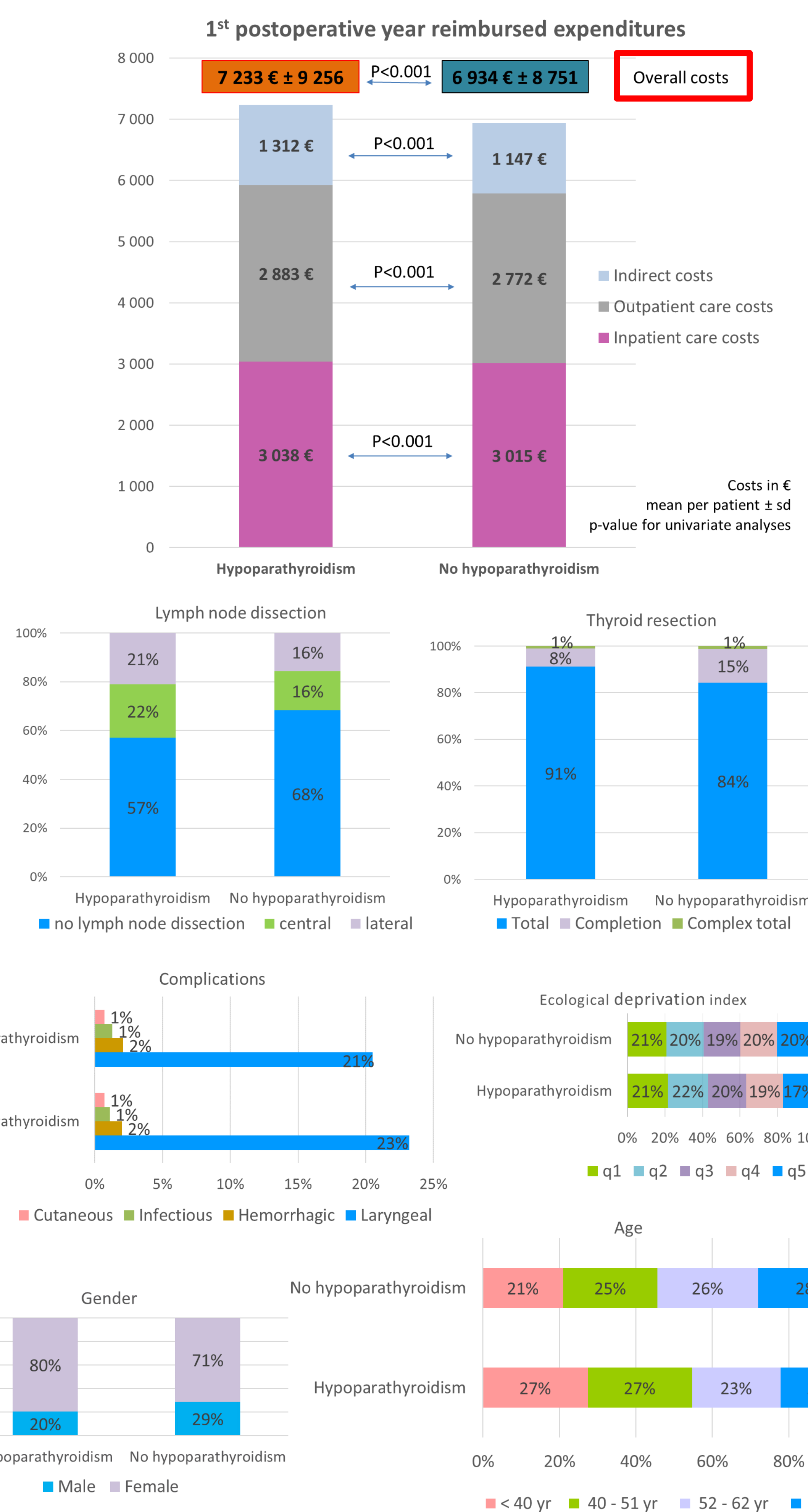
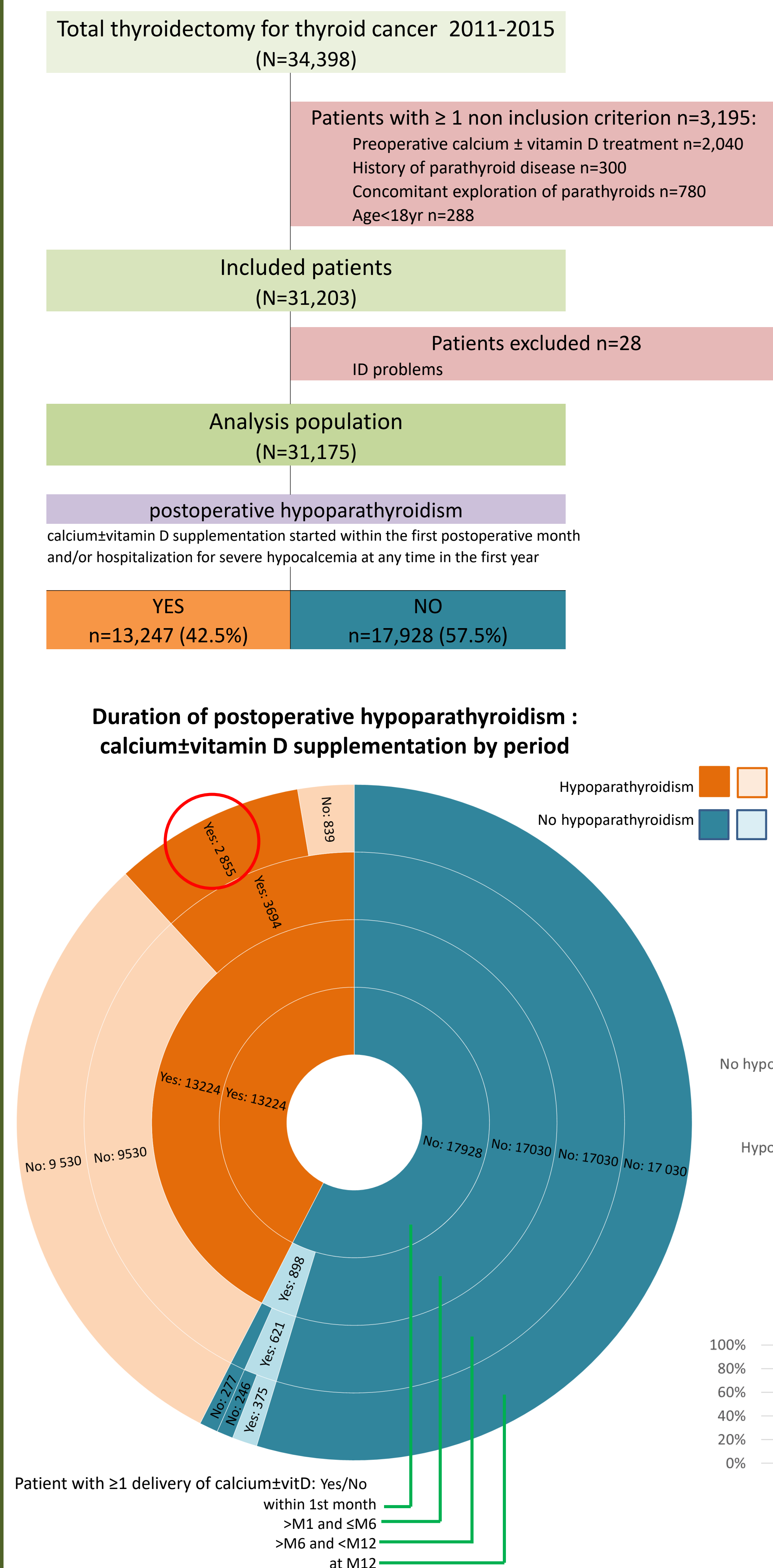
Statistical methods :

- Univariate cost analyses using Wilcoxon test.
- Multivariate cost analyses with generalized linear model (gamma distribution and log link).

Results

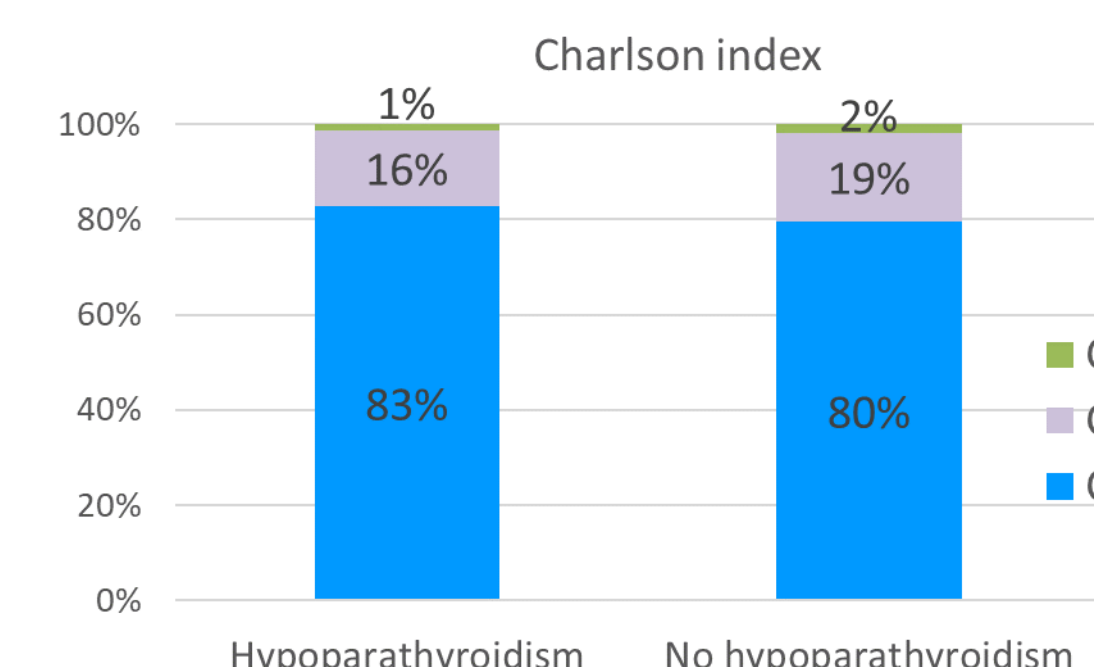
Between 2011 and 2015, 34,398 patients had total thyroidectomy for cancer, of which 31,175 were included (75% female, median age: 52yr) in our study. Of the 31,175 patients analyzed, 13,247 (42%) had hypoparathyroidism. Among the 13,224 patients treated with calcium±vitamin D from the 1st postoperative month, 2,855 (22%) were still treated at 1 year.

Over the first year, mean overall reimbursed expenditures per patient were significantly higher for patients with hypocalcemia than for those without hypocalcemia even if the difference was weak: inpatient (€3,038 vs €3,015 $p<0.0001$), outpatient (€2,883 vs €2,772 $p<0.0001$) and indirect costs (€1,312 vs €1,147 $p<0.0001$). After adjustment, the incremental cost was estimated at €142 ($p<0.004$).



	Incremental cost	(95% CI)	p-value*
Hypoparathyroidism:			
No hypoparathyroidism	ref		
Hypoparathyroidism	142	(47-239)	0.003
gender:			
female	ref		
male	910	(784-1 040)	<0.001
Charlson comorbidity Index:			
Charlson Index = 0	ref		
Charlson Index 1 or 2	1 299	(1 142-1 461)	<0.001
Charlson Index > 2	5 239	(4 441-6 140)	<0.001
Ecological deprivation index:			
1st quintile (best)	ref		
2nd quintile	162	(17-312)	0.028
3rd quintile	239	(87-397)	0.002
4th quintile	290	(135-451)	<0.001
5th quintile (worst)	368	(206-535)	<0.001
Type of thyroid resection:			
Total thyroidectomy	ref		
Complex total thyroidectomy	1 630	(1 074-2 271)	<0.001
Completion thyroidectomy	381	(230-538)	<0.001
Lymph node dissection:			
None	ref		
Central compartment	1 163	(1 013-1 319)	<0.001
Lateral compartment	1 863	(1 684-2 050)	<0.001
Laryngeal complications:			
No	ref		
Yes	1 045	(910-1 186)	<0.001
Hemorrhagic complications:			
No	ref		
Yes	1 552	(1 130-2 021)	<0.001
Infectious complications:			
No	ref		
Yes	2 541	(1 900-3 278)	<0.001

* from a GLM model adjusting for age (<40yr, 40-51yr, 52-62yr, >62yr), gender, Charlson Comorbidity index, ecological deprivation index, types of thyroid resection, lymph node dissection and complications, year and region.



Conclusion

- Hypoparathyroidism after thyroidectomy for cancer leads to an additional cost for health insurance from the 1st year.
- A 5-year follow-up of patients with permanent hypoparathyroidism is planned to assess the heavier long-term complications and their costs.