Resource use in patients with carcinoid syndrome: a retrospective analysis using the French health insurance national database (SNDS)

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BACKGROUND

- Approximately 20% of patients with neuroendocrine tumours (NET) and mainly from primaries in the ileum and lung suffer from carcinoid syndrome (CS). Patients with CS experience symptoms such as diarrhea, flushing and cardiac complications. The diarrhea occurs in almost all patients with CS and can be truly debilitating. Therefore the burden of the symptoms, in addition to the tumour can further impair quality of life and is associated with additional costs related to symptom management and patients follow-up.

- All resource use, including hospital costs, private practice costs, medication, examination, biological tests are gathered in the French national health insurance database (SNDS).

OBJECTIVE

The aim of the present study is to describe resource use for CS patients using the SNDS.

METHODS

Data source

The SNDS covers around 99% of the population. It provides a complete overview of patients' care pathway by including anonymous individual data, comprising sociodemographic and medical characteristics of beneficiaries and all hospital care and outpatient care costs. The selection of study population is crucial for such analysis.

Patients

- The code E 34.0 is the specific code for CS in the health insurance database. Moreover the prescription of somatostatin analogue (SSA) is the standard care for symptom management for CS. To ensure that patients truly suffer from CS, they will be selected by combining at least one hospitalization with an ICD-10 diagnosis code of CS and one reimbursement of a SSA.

- Patients included are patients combining both criteria (code E34.0 and dispensing of SSA) between January 2012 and December 2016 **(Figure 1).** They will be studied until December 2017.
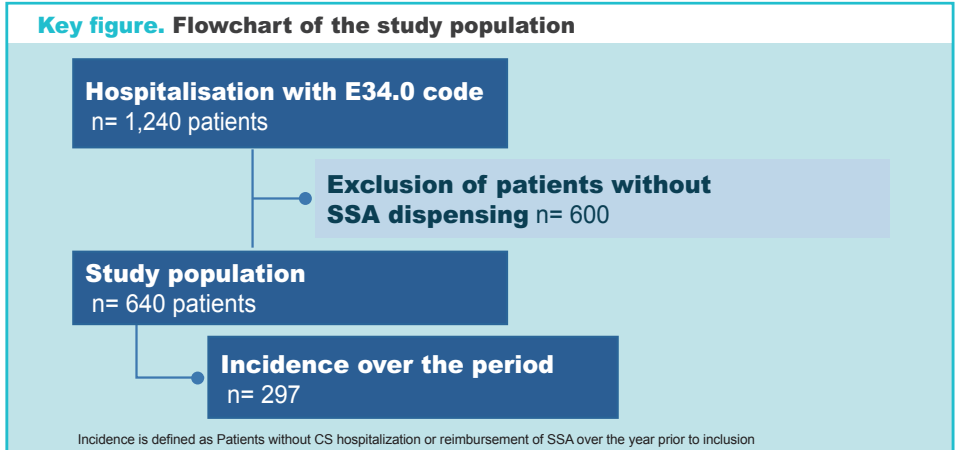
Costs

- Costs associated with CS for all included patients will be considered, based on expenses claims (SNDS). This includes hospital and outpatients costs **(Figure 2).**

- Costs will be analyzed for all included patients for the entire study period. We will specifically analyze the first year after inclusion for incident cases, and the last year before death for deceased patients.

- Care and costs associated with CS and tumour management will be studied. In some instances (e.g. hospital cost), it will not be possible to isolate CS from tumour management costs.

Figure 1 - Selection of the study population

Hospitalisation — ICD-10 - Cade E34.0
AND
Dispensing of SSA — ATC: H01CB02, H01CB03

Study Population — Inclusion from January 2012 to December 2016

Figure 2 - List of costs

Hospital cost	Outpatients costs
• Inpatient stay • External hospital consultation	• Medication • Consultation • Paramedical act (home care nurses) • Radiology (MRI, CT-scan, TEP-DOPA, DOTATOC) • Echography (cardiac) • Laboratory tests (5-HIAA) • Transportation • Sick leave

Key figure. Flowchart of the study population

Hospitalisation with E34.0 code
n= 1,240 patients

Exclusion of patients without SSA dispensing n= 600

Study population
n= 640 patients

Incidence over the period
n= 297

Incidence is defined as Patients without CS hospitalization or reimbursement of SSA over the year prior to inclusion

RESULTS

- A total of 640 patients were identified **(Key figure).**
- Final data will be available by mid 2020.

CONCLUSIONS

This is the first analysis at a national level of the management of patients with CS in France. Data provided by the national French insurance system will contribute to better characterize management of NET with CS and related costs in France.

TAKE-HOME MESSAGE

This study is the first analysis at a national level of the management of patients with CS and related costs in France.

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