RWD88

Investigating the transferability, at the national level, of results from HemSys, a French Multidisciplinary Concertation Meetings database in onco-hematology, to generate real-world evidence

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Background and objective

- The HemSys **database** contains information on all adult cases discussed in hematological tumor boards [Multidisciplinary Concertation Meetings] in the French Brittany (3.3 million inhabitants). The database collects real-time data on patient's demographic and clinical characteristics, tumors and treatment decisions for more than **30,000 patients** managed in 13 hospitals. Each time a case is examined a dedicated form is created. The database enables a longitudinal follow-up of patients over time.
- The objective of the study was **to investigate the potential of generalizability of** results obtained from the **HemSys database** at the **national level** using hospitalization data from the exhaustive French **hospital discharge database PMSI** (Programme de Médicalisation du Système d'Information).

Methods

- Retrospective study conducted over the period 2015-2021.
- Six hematological malignancies under the scope: Diffuse large B-cell lymphoma (DLBCL) - Acute myeloid leukemia (AML) - Multiple myeloma (MM) - Mantle cell lymphoma (MCL) - Follicular lymphoma (FL) - Hodgkin's lymphoma (HL)
- Prevalent, newly diagnosed (incident) and newly treated incident patients identified from (1) the HemSys database, (2) the PMSI database as reference, were compared in terms of age [age at hematological tumor board for patients in the HemSys database, age at first hospitalization or first treatment for PMSI database], sex and first-line therapy (incident treated case only) using conformity tests.
- Hospitalisation data were also used to characterize the coverage area of sites participating to the HemSys database and investigate the exhaustiveness of the database at regional level.

Definitions

- Prevalent patient [2015-2021]: in HemSys, patient with ≥ 1 review in hematological tumor board / in PMSI: patient with ≥ 1 hospitalization with a primary diagnosis (PD) or a related diagnosis (RD) among considered ICD-10 codes.
- Incident patient [2015-2021]: in HemSys, newly diagnosed patient with both a first review in hematological tumor board and a treatment decision among: 'First-line treatment', 'Abstention/Monitoring', 'Additional assessment', or 'Palliative care' / in PMSI: patient with a first hospitalization (DP or DR among considered ICD-10 codes) between 2015 and 2021, without any hospitalization [PD/RD or secondary diagnosis] for the considered malignacy, in 2013 and 2014.
- In the PMSI, first-line therapies were identified within three months from diagnosis.
- ICD-10 codes: DLBCL: C833; AML: C920, C925, C926, C928; MM: C90; MCL: C831; FL: C82; HL: C81.

Results

1. Comparison of age and sex

		HEMSYS database	National PMSI
DLBCL			
HemSys database	Prevalent cases 2,477	♂ % 55.2% Age mean (Sd) 69.4 (14.5)**	♂ % 55.7% Age mean (Sd) 67.5 (15.4)
	Incident cases 1,961	♂ % 55.2% Age mean (Sd) 69.5 (14.9)**	♂ % 55.7% Age mean (Sd) 67.4 (15.5)
	Treated 1,847	♂ % 55.3% Age mean (Sd) 69.3 (14.8)**	♂ % 55.9% Age mean (Sd) 66.4 (15.3)
AML			
HemSys database	Prevalent cases 1,328	♂ % 54.9% Age mean (Sd) 68.6 (14.2)	♂ % 54.9% Age mean (Sd) 68.7 (16.0)
	Incident cases 1,042	♂ % 55.3% Age mean (Sd) 69.2 (14.1)	♂ % 54.9% Age mean (Sd) 69.2 (15.9)
	Treated 745	♂ % 55.2% Age mean (Sd) 66.0 (14.0)	♂ % 55.2% Age mean (Sd) 65.2 (15.5)
MM			
HemSys database	Prevalent cases 2,675	♂ % 52.4% Age mean (Sd) 71.8 (10.9)**	♂ % 52.8% Age mean (Sd) 70.8 (12.0)
	Incident cases 1,774	♂ % 54.1% Age mean (Sd) 72.0 (11.2)**	♂ % 53.2% Age mean (Sd) 70.8 (12.2)
	Treated 1,461	♂ % 54.8% Age mean (Sd) 72.2 (11.2)**	♂ % 53.6% Age mean (Sd) 69.0 (11.5)
MCL			
HemSys database	Prevalent cases 438	♂ % 73.7% Age mean (Sd) 71.8 (11.4)*	♂ % 71.1% Age mean (Sd) 70.2 (11.8)
	Incident cases 315	♂ % 72.1% Age mean (Sd) 71.9 (11.1)*	♂ % 69.3% Age mean (Sd) 71.1 (12.0)
	Treated 224	♂ % 72.5% Age mean (Sd) 72.2 (10.9)	♂ % 70.9% Age mean (Sd) 69.3 (11.8)
FL			
HemSys database	Prevalent cases 1,121	♂ % 52.5% Age mean (Sd) 65.6 (12.4)	♂ % 52.5% Age mean (Sd) 65.9 (13.2)
	Incident cases 800	♂ % 52.4% Age mean (Sd) 64.5 (12.7)**	♂ % 52.4% Age mean (Sd) 66.0 (13.4)
	Treated 593	♂ % 53.3% Age mean (Sd) 64.3 (12.7)*	♂ % 52.2% Age mean (Sd) 65.8 (13.0)
HL			
HemSys database	Prevalent cases 747	♂ % 57.0% Age mean (Sd) 44.7 (20.0)	♂ % 57.4% Age mean (Sd) 46.0 (20.5)
	Incident cases 640	♂ % 56.1% Age mean (Sd) 44.5 (19.8)	♂ % 57.2% Age mean (Sd) 45.8 (20.6)
	Treated 593	♂ % 55.6% Age mean (Sd) 43.9 (19.5)	♂ % 57.0% Age mean (Sd) 43.6 (19.6)

Test HemSys database vs. national PMSI: * p<0.01 **p<0.001 – Sd : Standard deviation

For HL, 2 distinct peaks for age were retrieved: at 25 and 60 years of age

2. First-line therapy comparison

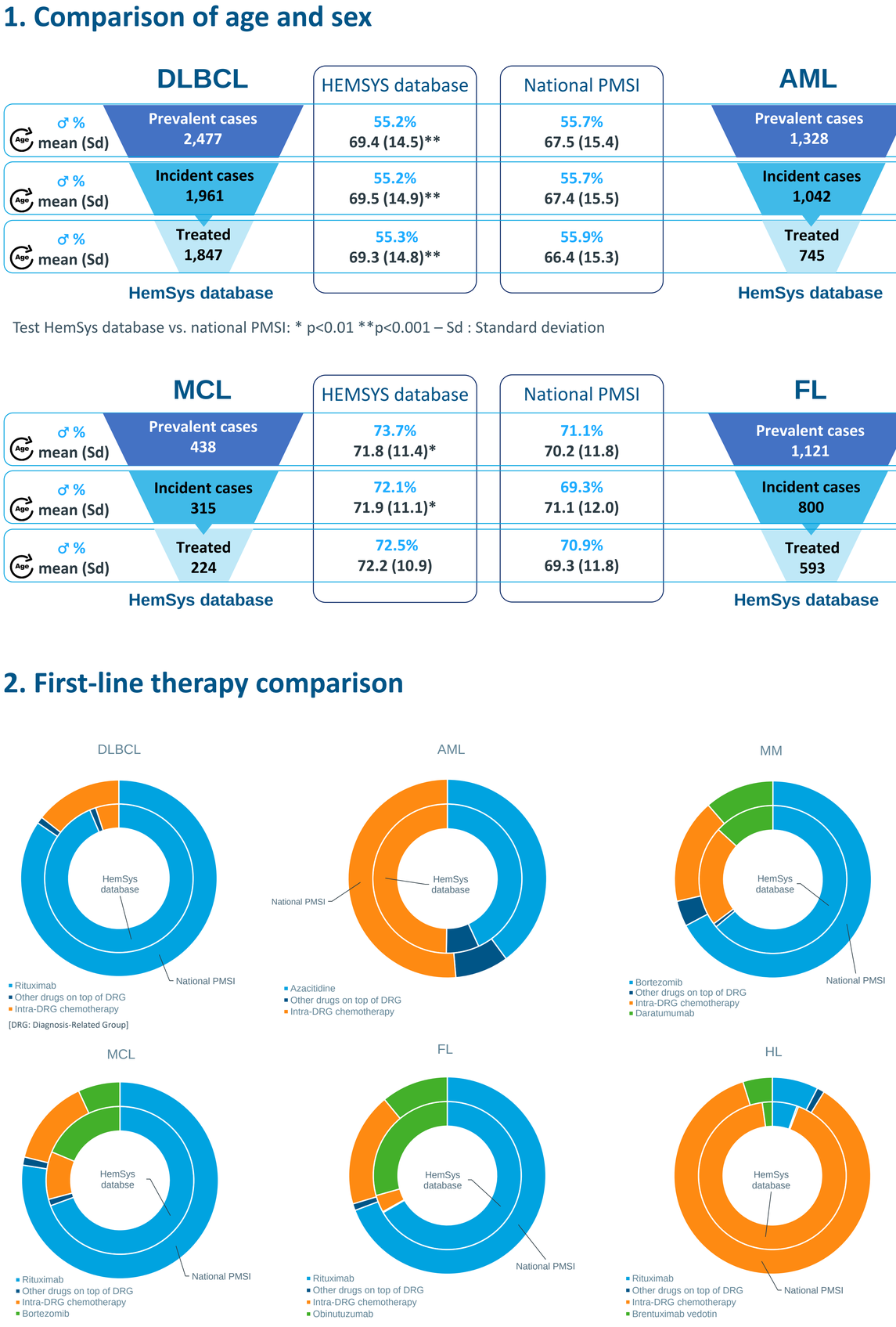

Figure 1. Distribution of first-line treatment [2015-2021]: comparisons of HemSys and PMSI databases

3. Coverage area

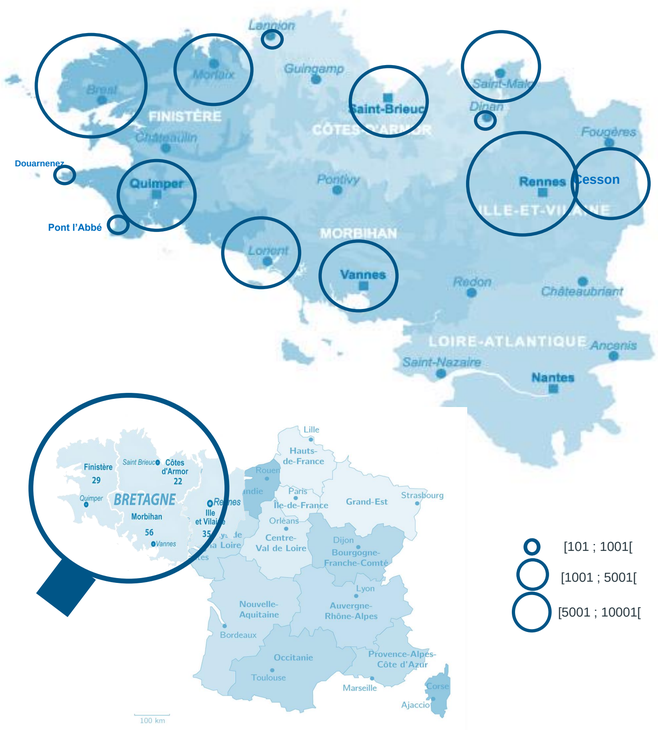

Figure 2. Description of the annual number of patients diagnosed with an hematological malignancy (any type) in HemSys network sites.

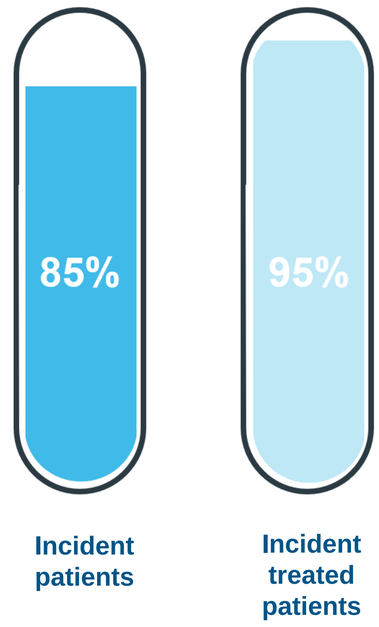

Figure 3. Exhaustiveness metrics of HemSys database [2015-2021]: ratio of number of incident and incident treated patients in the HemSys database vs. PMSI database (Brittany)

Key data / Main findings

- **The HemSys database is representative of national data. Its results are generalizable**.
- **This study illustrates the interest of using the HemSys database for research in pharmacoepidemiology and healthcare outcomes assessment.**
  - Characteristics of AML and HL patients recorded in the HemSys database, in terms of age and sex, are comparable to those of the French population. Patients diagnosed with DLBCL, MM, and MCL are on average 1 to 2 years older (or younger: FL). The first treatment initiated are consistent with the clinical practice at national level.
  - All hospitals sites providing care for patients diagnosed with hematological malignancies participate in the HemSys network. The coverage area is represented by 2 academic hospitals, 10 general hospitals and 1 private site.

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