Matching 3 observational studies with the French national healthcare database (SNDS) to assess the long-term management of RA patients treated with tocilizumab

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Background/Introduction

Since ToCiliZumab (TCZ) market introduction in France in 2010 for patients suffering from Rheumatoid Arthritis (RA), three real-world studies were conducted in France (NCT01185522 - PEPs study (1): 2010-2011, NCT01392001 - SPARE-1 study (2): 2011-2013, NCT01474291 - ACT-SOLO study (3): 2012-2013).

As patients were followed maximum 12 months, the objective to link these studies with the French national claims database (SNDS (4)) was to generate long-term evidence on the management of RA in patients initiating TCZ.

Objectives

This poster describes the process and results of the linkage between the 3 cohorts and the French national claim database (SNDS).

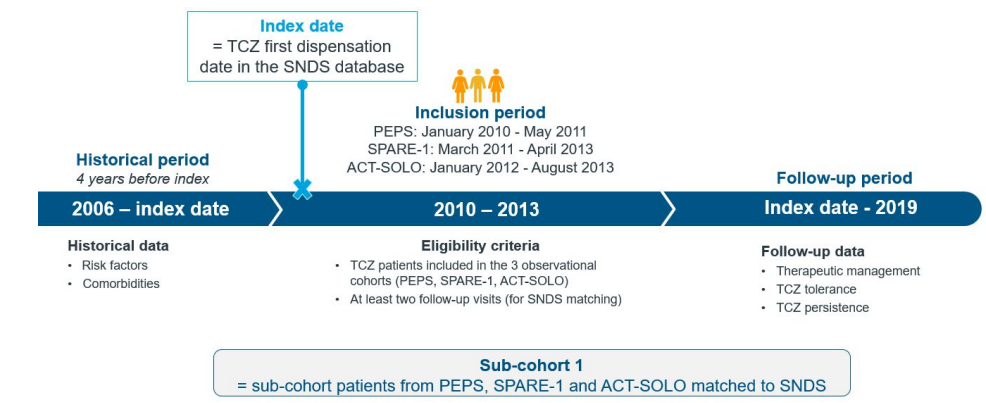
Methods

Index date was defined as TCZ first dispensation and follow-up period was up to ten years (max 2019) after index date (see Figure 1).

As no unique direct identifier was available in the data sources, a deterministic and iterative approach was employed by the CNAM (5) to establish a link using several variables: dates of medical visits/TCZ hospitalizations, year of birth, gender, and national hospitals identifier (called FINESS). Matched patient should have at least two follow-up records in the SNDS database.

The SNDS data extraction was performed in November 2023.

Figure 1: Study Design including patients from cohorts PEPS, SPARE-1, and ACT-SOLO along with SNDS Database Matching



Results

A total of 1,494 RA patients were analyzed in previous observational studies and 1,602 RA patients with TCZ dispensation were extracted from the SNDS database.

First step of the algorithm identified 1,455 (97.4%) matching patients using above mentioned variables.

169 patients had to be excluded due to either identification/technical constraints from the SNDS or > 90 days gap between TCZ initiation from the observational studies and TCZ first dispensation date from the SNDS (see Figure 2).

From the 1,286 patients matched, median age was 56.0 (Q1:48.0-Q3:66.0) years. Most patients were females (79.9%), 1,176 (91.4%) were aged < 75 years and 110 (8.6%) were aged ≥ 75 years. Median follow-up duration was 8.0 years (Q1:7.0-Q3:9.5). Other baseline characteristics are described in Table 1.

Figure 2 : Flow Chart

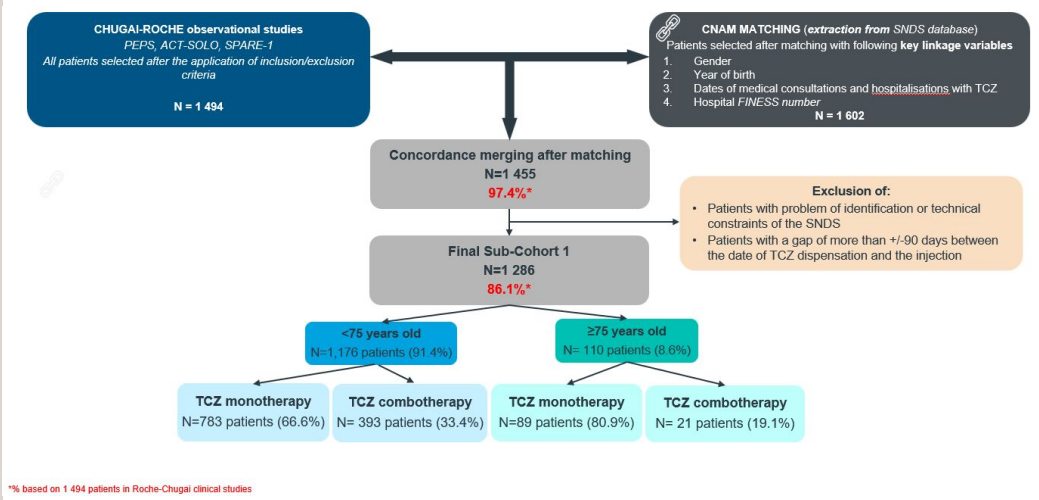


Table 1: Clinical characteristics in the overall study population and according to age groups <75 and ≥75 years old

	TOTAL N=1,286	<75 years old N=1,176 (91.4%)	≥75 years old N=110 (8.6%)
Medical history within 4 years prior to the index date			
Severe infection	301 (23.4%)	260 (22.1%)	41 (37.3%)
Acute cardiovascular event	63 (4.9%)	48 (4.1%)	15 (13.6%)
Cancer	41 (3.2%)	31 (2.6%)	*≤10 (≤9.1%)*
Comorbidities within 4 years prior to the index date			
Cardiovascular diseases	83 (6.5%)	60 (5.1%)	23 (20.9%)
Lung disease	33 (2.6%)	27 (2.3%)	*≤10 (≤9.1%)*
Other chronic pulmonary diseases	244 (19.0%)	211 (17.9%)	33 (30.0%)
Gastrointestinal diseases (diverticulosis)	40 (3.1%)	34 (2.9%)	*≤10 (≤9.1%)*
Liver disease	48 (3.7%)	46 (3.9%)	*≤10 (≤9.1%)*
Use of anti-hypertensive treatments	502 (39.0%)	432 (36.7%)	70 (63.6%)
End stage renal disease	*≤10 (≤0.8%)*	*≤10 (≤0.9%)*	-
Diabetes	124 (9.6%)	107 (9.1%)	17 (15.5%)
Use of statins	265 (20.6%)	225 (19.1%)	40 (36.4%)
Use of antidepressive treatments	317 (24.7%)	291 (24.7%)	26 (23.6%)
Morbid obesity	120 (9.3%)	113 (9.6%)	*≤10 (≤9.1%)*
DAS			
Mean (SD)	5.2 (1.2)	5.2 (1.2)	5.5 (1.1)
Median (Q1 - Q3)	5.2 (4.4-6.0)	5.2 (4.4-6.0)	5.5 (4.8-6.3)
Min,Max	1.4,9	1.4,9	2.7,8
Missing (N)	78 (6.1%)	64 (5.4%)	14 (12.7%)

Conclusion

This method of record linkage with pseudonymized data used in this study led to match 1,286 (86.1%) patients between the observational studies and the claim database.

This linkage allowed increasing patient follow-up by 7 years in median.

References:

(1) ACT-SOLO study results: https://pubmed.ncbi.nlm.nih.gov/28123778/
(2) PEPs study results: https://pubmed.ncbi.nlm.nih.gov/26344671/
(3) SPARE-1 study results: https://pubmed.ncbi.nlm.nih.gov/26941130/
(4) SNDS: https://www.snds.gouv.fr/SNDS/Accueil
(5) CNAM: https://www.assurance-maladie.ameli.fr/etudes-et-donnees/en-savoir-plus-snds/utilisation-accompagnement-donnees-snds

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