IMPACT OF TOCILIZUMAB SUBCUTANEOUS INJECTION COMMERCIALIZATION ON PRACTICES IN THE PUBLIC HOSPITALS OF PARIS

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BACKGROUND

Widely used in rhumatology diseases, tocilizumab is a humanized monoclonal antibody that competitively inhibits the binding of interleukin-6 (IL-6) to its receptor, preventing IL-6 signal transduction to inflammatory mediators that summon B and T cells. First commercialized with an intravenous (IV) formulation only available at hospital, a subcutaneous (SC) formulation is avalaible since 2015, both at hospital and in retail pharmacies. In France, common reimbursed indications with IV formulation are the treatment of rheumatoid arthritis in adults, in monotherapy or associated to methotrexate.

OBJECTIVES

Purpose of this study is to assess the impact of tocilizumab SC formulation's arrival on practices in the Paris Public Hospitals (AP-HP).

METHODS

Data collected were :

- ✓ consumptions, expenditures and common indications for IV / SC in tocilizumab from 2014 to 2017 from AP-HP prescription software
- ✓ AP-HP prescriptions carried out in retail pharmacies for SC formulation. These prescriptions called PHEV (for « Prescriptions Hospitalières Exécutées en Ville ») are prescriptions from hospital physicians but patients get their treatment in retail pharmacies.

Consumptions were expressed in defined daily dose (DDD), setted at 20 mg of tocilizumab by the World Health Organization (WHO).

RESULTS

15/37 hospitals in AP-HP consumed tocilizumab between 2014 and 2017.

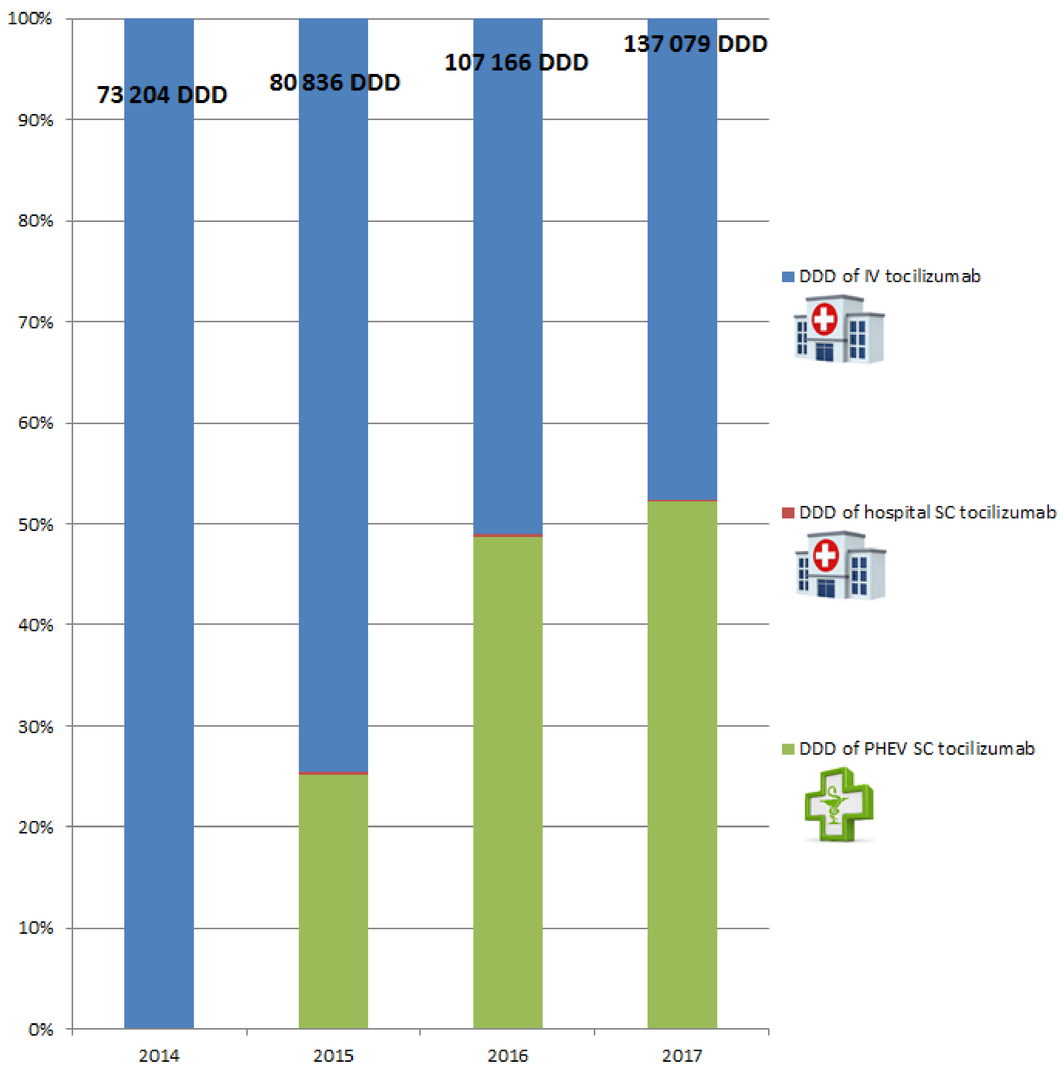

Figure 1 : Evolution of the different tocilizumab formulations consumptions in DDD from 2014 to 2017 in AP-HP

Table I : Daily costs of treatment (DCT) for IV and SC formulations according to the daily dose considered

	Usual dose calculated for an adult of 70kg*	Daily cost of treatment based on usual dose*	DDD setted by the WHO	Daily cost of treatment based on DDD
IV	8mg/kg = 560 mg/4 weeks = 20 mg/day	26,3 €	20 mg	26,3 €
SC	162 mg/week = 23 mg/day	29,2 €	20 mg	25,2 €

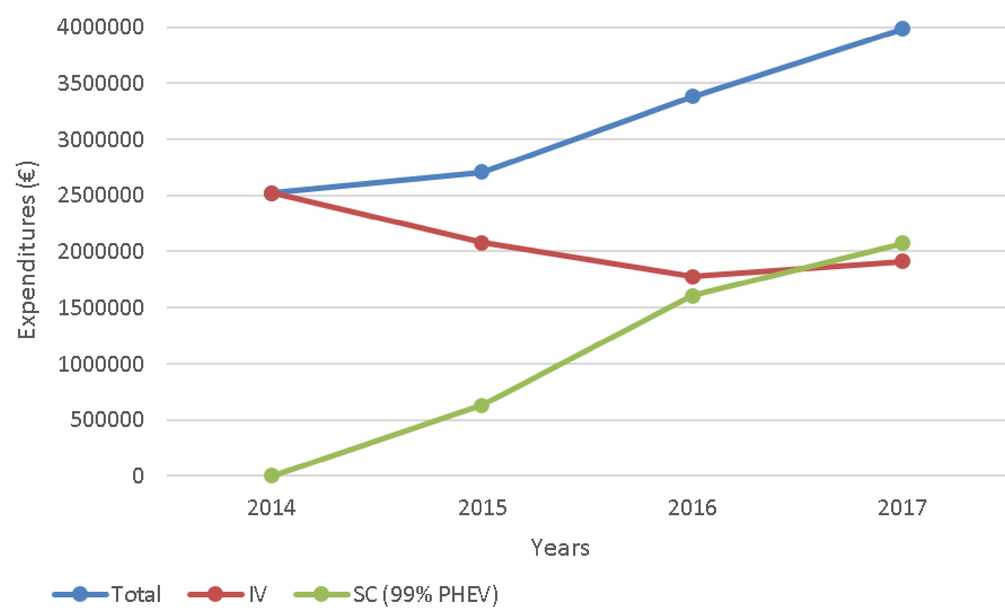

Figure 2 : Evolution of tocilizumab expenditures from 2014 to 2017 in AP-HP

- ➢ **Increasing global expenditures of tocilizumab in AP-HP**
- ➢ **Increasing proportions of SC consumptions in AP-HP**
- ➢ **SC consumptions and expenditures : > 99% from PHEV**

In 2017, 3 practices profiles were observed, they are described in table II below :

Table II: Contribution of observed practices profiles in tocilizumab consumptions in DDD in 2017

	Number of hospitals	**Total DDD** (IV + SC)	**IV DDD**	**SC DDD**
Profile 1 : hospitals with rheumatology department which kept IV for hospital and prescribed SC only with PHEV	**8**	**72,3%** (99 009 DDD)	**69,2%** (45 176 DDD)	**75%** (53 833 DDD)
Profile 2 : hospitals with rheumatology department which use both IV and SC at hospital and also prescriptions of SC for PHEV	**3**	**26,6%** (36 534 DDD)	**28,4%** (18 568 DDD)	**25%** (17 966 DDD) — **99%** / **1%**
Profile 3 : hospitals without rheumatology department which only use IV	**4**	**1,1%** (1536 DDD)	**2,4%** (1 536 DDD)	**0%**
Total	15	100% (137 079 DDD)	100% (65 280 DDD)	100% (71 799 DDD)

- ➢ **Hospitals that use IV and prescribe SC only in PHEV represent more than 70% of all DDD and of SC DDD**
- ➢ **Hospitals that prescribe SC not only in PHEV but also at hospital represent 25% of all DDD and of SC DDD**
- ➢ **Hospitals that only use IV represent 1% of all DDD**

DISCUSSION / CONCLUSION

SC tocilizumab consumptions are increasing but IV still accounts for a main part. SC consumptions may be overestimated with the DDD setted at 20 mg by the WHO compared to the 23 mg calculated based on usual dose. But still, tocilizumab formulations **SC and IV have close DCT** and are both reimbursed in indications studied, **so prices would not explain these differences in practices**.

Factors such as hospital policies encouraging ambulatory cares regarding day hospital capacities in every hospital and imminent arrival of IV biosimilars, should be considered to explain these differences from a hospital to another.