EE676

Cost considerations: Exploring the economic implications of choosing SC or IV administration

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BACKGROUND AND OBJECTIVES

Some intravenous injection (IV) treatments are becoming available in subcutaneous (SC) form.

The choice of administration route may be influenced by various factors, including safety, efficacy, patient preference, existing care organization, and health-economics. This choice could have an impact depending on perspectives, including patients, healthcare professionals and payers.

In an era where every healthcare system is striving to minimize expenses, it is important to explore the cost-saving potential of a galenic form.

Overall project objectives: analyze the role of real-world evidence in documenting the economic impact of SC forms compared with IV ones.

To compile a **list of fields and pathologies** in which the comparison SC versus IV route was studied.

To identify the different **methodologies** according to therapeutic areas and countries.

To understand the **economic impact** of the choice between SC or IV administration, taking into account both direct and indirect costs.

METHODOLOGY

A pragmatic literature review was conducted using the following methodology:

- List of references identified using the PICO method.
- Selection of references based on titles and abstracts according to eligibility criteria, conducted by 2 independent reviewers.
- Exclusion criteria: no IV/SC comparison / No relevant data / Efficacy, safety of PK only / Patient case / Outside EU5.
- Data sources: Pubmed and Grey literature (ISPOR, HAS, ESMO, ASCO, NICE).
- Time horizon: 2017-2023.
- Geographical scope: France, Spain, Italy, Germany and United Kingdom.
- One main outcome: economic impact.

This research approach resulted in the selection of 30 studies, 20 of which were from the scientific literature and 10 from the grey literature, that focused on the economic impact.

The 30 studies have been analyzed according to the 3 objectives presented in the background section.

Both direct and indirect costs were considered:

Table 1: Direct and indirect costs

Direct costs	**Medical costs**	Medical consultation
		Hospitalizations
		Treatments, including treatment administration
	Non medical cost	Transport
		Social service
		Informal assistance
Indirect costs	**Non medical cost**	Spare / lost time (lost production / recreation) of patients
		Spare / lost time (lost production / recreation) of caregivers

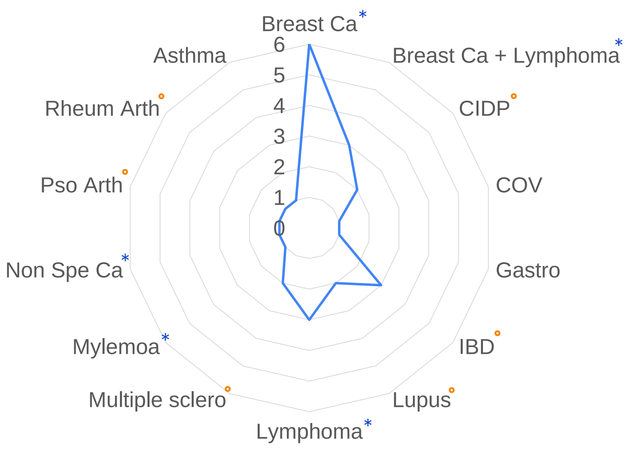
RESULTS

Therapeutic areas and pathologies

Among the 30 studies in scope:

- 14 are specific to oncology & onco-hematology, 11 to immunology, 1 to gastroenterology, 1 to virology and 1 to respiratory.
- 2 studies are not specific to any particular field.

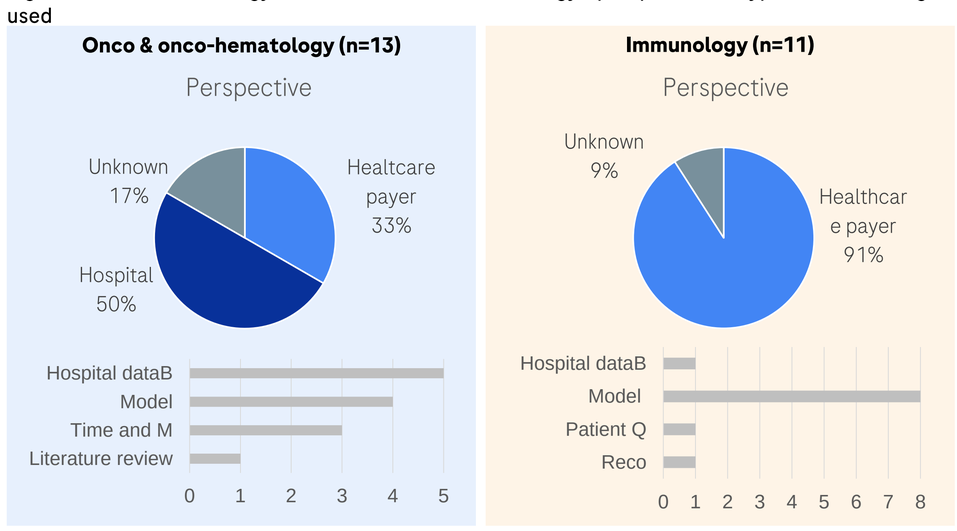
Figure 1: Distribution of articles over the pathologies
*Onco & onco-hematology / ° Immunology



Perspectives and methodologies

Out of the 19 studies that consider direct costs only, 12 studies are based on modeling, 6 on hospital databases, and 3 on time and motion analysis - the three most frequently used methodologies. Out of the 11 studies that consider both direct and indirect costs, 5 studies are based on modeling - the most frequently used methodology. There was no analysis of indirect costs based on specific questionnaires such as the WPAI.

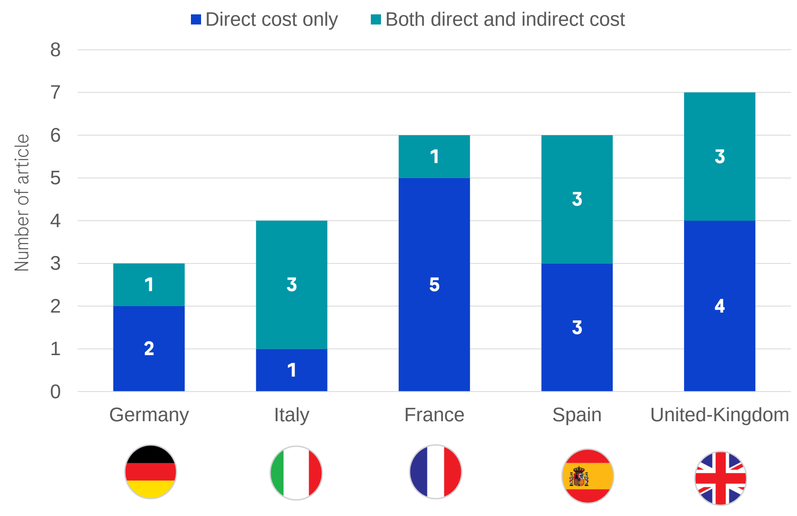
Figure 2: Focus on oncology & onco-hemato and immunology – perspectives & type of methodologies used



Countries interest for economic impact of SC route

In the case of a multi-country study, each article is counted for each country covered. Germany is the only country that appears exclusively in multi-country studies.

Figure 3: Distribution direct and indirect costs per country

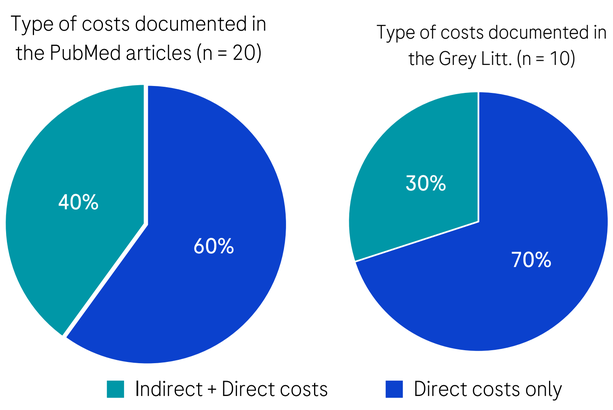


Types of costs

Over the 30 studies in scope:

- 19 studies only consider direct costs
- 11 consider both direct and indirect costs

Figure 4: PubMed vs. Grey litt. direct costs only vs. both direct and indirect costs



Cost-saving potential of the SC route compared to the IV route

The SC route is the most economical in 100% of the oncology and hemato-oncology studies, regardless of the type of costs considered.

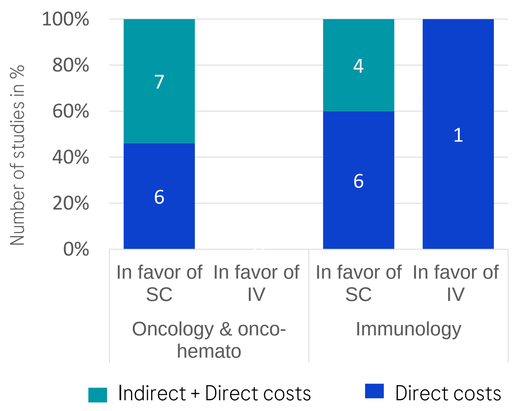
Overall, 93% of studies demonstrate a positive economic impact associated with SC route.

Only 2 articles have concluded that SC is not cost-saving.

- In immunology paper, these additional costs are attributed to higher cost of SC treatment[1].
- In gastroenterology, an additional cost has been reported, which could be attributed to either an increased dosage or a higher price of SC treatment[2].

In both cases, the lack of cost-effectiveness is directly linked to the higher cost of treatment.

Figure 5: Focus on oncology & onco-hematology and immunology: dispersion of studies by cost effectiveness and type of cost analyzed



Example of savings amounts

There are limitations to comparing the savings generated in the various studies due to differences in methodologies, perspectives, healthcare systems, costs considered, products, and indications. Nonetheless, each result is worth considering as they shed light on the potential cost-saving advantages of the SC route compared to the IV route, and the amount of savings that can be generated.

Table 2: Key saving amounts from three articles on similar breast cancer treatments (the most represented field)

Mains results	Scope of costs	Method
• Introduction of SC should head to saving in 3 years: (€1,3 million in adjuvant setting and €5,9 million in metastatic).[3] • National hospital perspective	HCP costs + non-drug consummation + AE management + drug acquisition	BIM (Assumption for HCP activity)
• IV trastuzumab cost/patient: £1,683 - £3,629 vs SC trastuzumab: £1,263.[4] • Healthcare provider perspective	Drug cost, dispensing cost, nursing time, insertion of port	Retrospective (nurse service data analysis)
• Annual total savings for all patients included in the study from SC use versus IV use = €35,332 with €29,590 from drug costs, €4,942 from consumables and 800€ from nurse time[5]. • Hospital perspective	Drug, HCP and consumables costs	Model - time estimated by a staff observation

(drug = trastuzumab studies 1 and 2, drug = trastuzumab + pertuzumab study 3).

CONCLUSION

The overall findings highlight that **SC administration is cost saving** (n=28, 93% of the total number of the studies in scope). In particular, all studies related to oncology & hemato-oncology support the cost-effectiveness of SC administration over IV administration.

The pragmatic literature review reveals that the majority of studies (n=19) **only considered direct costs** to evaluate the economic impact of using SC vs IV route.

Studies to value the cost-saving potential of SC administration are available in several therapeutic areas and pathologies. Nevertheless, **the oncology & hemato-oncology (n=13) and the immunology (n=11) fields are the most represented.**

- In oncology & hemato-oncology, studies outcomes are often derived from hospital data bases (n=5) and the SC's cost-saving potential is generally assessed through model with hospital perspective (50%).
- In immunology, the payer perspective is widely used (91%).

This project also demonstrates that the **SC administration use decreases different costs** such as medical costs, hospitalization, healthcare professional costs, consumables and waste costs.

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ACRONYMES:

- AE = Adverse events
- Breast CA = Breast cancer
- CIDP = Chronic Inflammatory Demyelinating Polyneuropathy
- COV = Covid 19
- Gastro = Gastroenterology
- HCP = Healthcare professional
- Hosp dataB = Hospital database
- IBD = Inflammatory Bowel Disease
- Multiple sclero = Multiple Sclerosis
- Non Spe Ca = Nonspecific Cancer
- Patient Q = Patient questionnaire
- PK = Pharmacokinetics
- Pso Arth = Psoriasis Arthritis
- Time and M = Time and motion
- WPAI = Work Productivity and Activity Impairment Questionnaire