

INTRODUCTION

- Onabotulinumtoxin A (Botox®) and incobotulinumtoxin A (Xeomin®) are botulinum neurotoxins type A (BoNT-A) which are clinically used for conditions characterized by hyperexcitability of peripheral nerve terminals and hypersecretory syndromes, such as blepharospasm, cervical dystonia or limb spasticity¹.
- They are biological products with different method of production, molecular weight and galenic treatment. Thus, their safety profile, posology and frequency of administration differ between them. Also, their activities are measured with different units, which limit the possibility of exchange between them^{2,3}.
- The doses and frequency of administration recommended in the summary of products characteristics (SmPC) may differ from the real clinical practice.

METHODS

- For this analysis, only common indications for Botox® and Xeomin® were considered:
 - Blepharospasm
 - Cervical dystonia
 - Upper limb spasticity after stroke in adults
- A literature review of published real-world studies with BoNT-A was conducted. Most of them were studies which included patients treated with only one BoNT-A.
- However, the selected studies were those which compared more than one toxin, including both Botox® and Xeomin®.
- Mean doses were identified for blepharospasm (47±10 U, Botox®; 62±11 U, Xeomin®), cervical dystonia (127±19 U, Botox®; 144±23 U, Xeomin®) and upper limb spasticity (183±99 U, Botox®; 235±108 U, Xeomin®).
- The administration frequency considered was every 12 weeks (i.e. 4.3 annual sessions).
- A cost-analysis model was developed in Microsoft Excel, using the available doses of each study and the considered frequency of administration.
- The estimation of the annual pharmaceutical cost per patient (€, 2018) was performed with the price per unit of the available botulinum toxin A presentations (€1,5912/U, ex-factory price [100U vial]) in Spain.

- The estimated Botox® and Xeomin® annual costs per patient considering the mean, lower and upper limit doses for blepharospasm, cervical dystonia and upper limb spasticity after stroke are shown in **Table 2**.

Table 2. Estimated annual costs

	ANNUAL TREATMENT COST		
	Lower limit dose	Mean dose	Upper limit dose
BLEPHAROSPASM			
Botox®	€255.12	€324.07	€393.03
Xeomin®	€351.66	€427.50	€503.35
CERVICAL DYSTONIA			
Botox®	€744.68	€875.69	€1,006.70
Xeomin®	€834.32	€992.91	€1,151.50
POST-STROKE UPPER LIMB SPASTICITY IN ADULTS			
Botox®	€579.20	€1,261.82	€1,944.45
Xeomin®	€875.69	€1,620.37	€2,365.05

- The estimated annual costs per patient were €324.07 (Botox®) and €427.50 (Xeomin®) for blepharospasm, €875.69 (Botox®) and €992.91 (Xeomin®) for cervical dystonia and €1,261.82 (Botox®) and €1,620.37 (Xeomin®) for upper limb spasticity after stroke.
- Botox® treatment is estimated to result in lower costs of 24.2%, 11.8% and 22.1%, in each one of the indications, respectively, compared to Xeomin® (Figure 1).
- In the SA performed with the upper and lower values of the dose ranges, treatment costs were estimated to decrease with Botox® compared with Xeomin® from 21.9% to 27.5% for blepharospasm, from 10.7% to 12.6% for cervical dystonia and from 17.8% to 33.9% for upper limb spasticity after stroke.

OBJECTIVE

To estimate the annual cost of treatment of adult patients with blepharospasm, cervical dystonia and upper limb spasticity after stroke with Botox® and Xeomin® in Spain, considering mean doses from published studies conducted in real world clinical practice.

Table 1. Mean dose and frequency of administration per indication

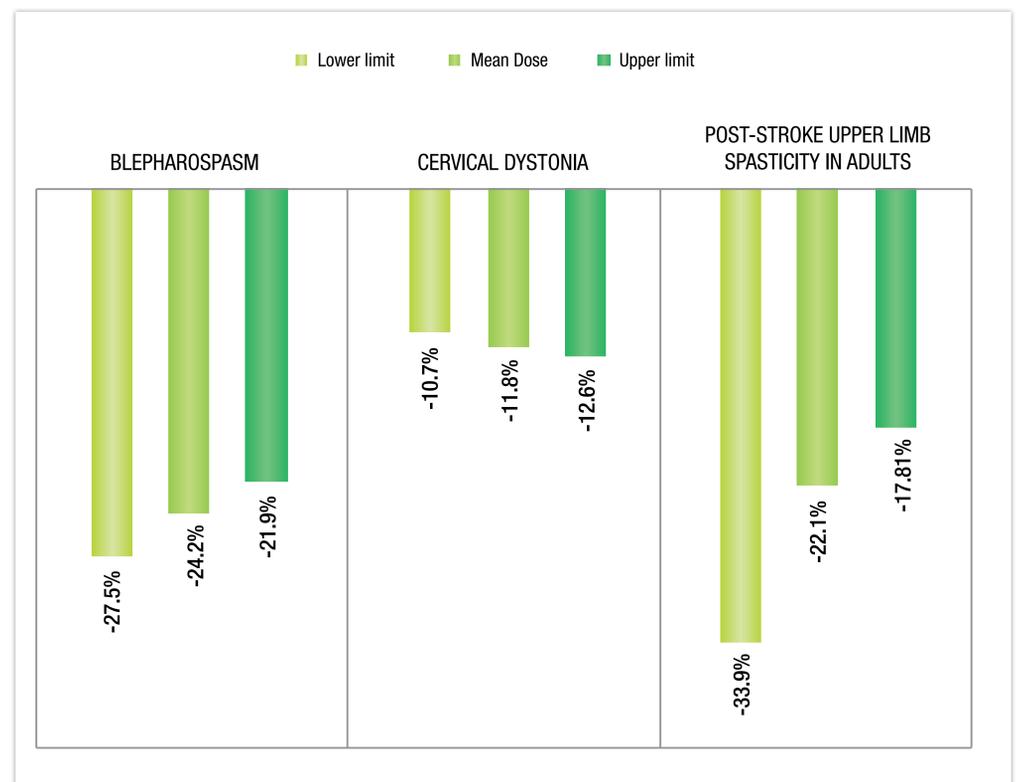
Indication	Medicinal product	Mean Dose	Frequency (Annual sessions)
Blepharospasm ⁴	Botox®	47 ± 10 U	12 weeks* (4.3)
	Xeomin®	62 ± 11 U	12 weeks* (4.3)
Cervical Dystonia ⁵	Botox®	127 ± 19 U	12 weeks* (4.3)
	Xeomin®	144 ± 23 U	12 weeks* (4.3)
Post-stroke upper limb spasticity in adults ^{6,7}	Botox®	183 ± 99 U	12 weeks** (4.3)
	Xeomin®	235 ± 108 U	12 weeks** (4.3)

*an average frequency of 12 weeks have been considered (in line with SmPC)
**Dose frequency considered in the study (Dinet J, et al. 2014)

- For this analysis, no drug wastage was assumed.
- Several sensitivity analyses (SA) were carried out to check the influence of the variation of the doses on the results (lower and upper dose limits).

RESULTS

Figure 1. Difference in total costs (Botox® vs Xeomin®)



CONCLUSIONS

- With the available evidence in real-world practice, the use of less dose of Botox® could achieve cost-savings compared to Xeomin® for the treatment of adult patients with blepharospasm, cervical dystonia and upper limb spasticity after stroke in Spain.

REFERENCES

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