

# Budget impact analysis of the IStent *inject*<sup>®</sup> implant for OPEN ANGLE GLAUCOMA treatment IN SPAIN

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**OUTCOMES<sup>10</sup>**

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# ESCRS

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# PURPOSE

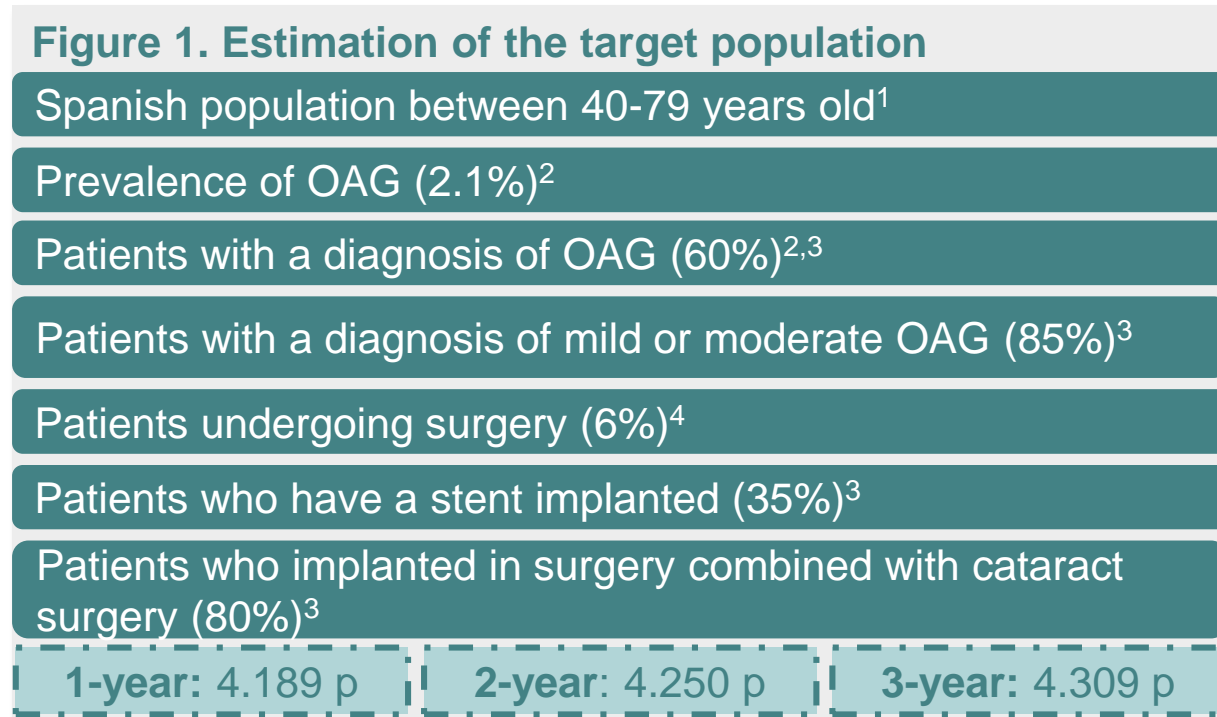
- **Open angle glaucoma (OAG) is a chronic progressive pathology** characterized by an increase in intraocular pressure (IOP), which may cause irreversible damage to eyesight<sup>1</sup>.
- **Micro-invasive glaucoma surgery (MIGS) devices** are a valid alternative to **control IOP** in patients with OAG and can be performed in combination with cataract surgery<sup>2</sup>.
- Implantation of the trabecular Micro-Bypass Stent, **iStent *inject*<sup>®</sup>**, has demonstrated its efficacy and safety in patients with **mild-to-moderate OAG**, efficiently **reducing IOP and medication use**<sup>3</sup>.

## Objective

- **The objective of this study was to evaluate the financial consequences of using iStent *inject* to achieve IOP control in patients with mild to moderate OAG undergoing cataract surgery, from the Spanish National Health System (NHS) perspective.**

# METHODS

- A budget impact model** was developed to estimate the 3-years **economic implications** (€, 2018) of **implanting iStent inject** during combined glaucoma-cataract surgery. The data inputs were based on published literature and validated by Spanish expert. Uncertainty was assessed through scenario and one-way sensitivity analyses, with each parameter varying individually by  $\pm 20\%$ .
- The target population:** patients with mild or moderate OAG candidates for stent implantation during cataract surgery (Figure 1).
- Scenarios:** the current scenario (all patients undergoing MIGS receive XEN<sup>®</sup>) was compared with three alternative scenarios considering a low, medium and high penetration of iStent *inject*, respectively (Figure 2).



**Figure 2. Scenarios considered in the analysis**

Current scenario	Alternative scenarios <sup>3</sup>		
	Low	Medium	High
XEN : 100%	XEN: 75%	XEN: 67%	XEN: 59%
	iStent <i>inject</i> : 25%	iStent <i>inject</i> : 33%	iStent <i>inject</i> : 41%

# METHODS

- **Costs:** were obtained from a national database<sup>1</sup> and validated by Spanish experts<sup>2</sup> (€, 2018). They include:
  - **Intervention cost:** device cost + surgical procedures cost (Table 1).
  - **Patients' follow-up cost:** estimated as the annual frequency of resource use by unit cost (Table 2).
  - **Adverse events cost:** the rate of adverse events was obtained from clinical trials<sup>4,5,6</sup> and the unit cost<sup>1</sup> of handling each complication was applied.

Table 1. Intervention costs

Resource	iStent <i>inject</i>	XEN	Fuente
Combined surgery + device (€, 2018)*	2.817,91 €	2.605,43 €	eSalud <sup>1</sup> BotPlusWeb <sup>3</sup>

\*cataract surgery + % Ambulatory major surgery (20% iStent *inject*; 22% XEN). For XEN includes injection with mitomycin: injection cost + necessary dose mitomycin (unit cost: 16,36 €).

Table 2. Annual use of resources for both comparators and unit costs

Resource	iStent <i>inject</i>	XEN	Unit cost <sup>1</sup>
Ophthalmologist*	5	8	77,58 €
Gonioscopy	2	3	24,65 €
Optometric assessment	4	6	33,00 €
Optic disc imaging <sup>μ</sup>	2	2	229,23 €

\* PIO measurement included; μ Includes the cost of ophthalmoscopy (28,98 €), TCO (48,34 €) and visual field analysis (151,92 €).

# RESULTS

- Over 3 years, the cost of OAG management in the current scenario was estimated at € 55,033,953. The inclusion of **iStent *inject* substantially reduced OAG management costs**, resulting in savings between € 1,647,776 (low penetration) and € 3,128,413 (high penetration) (Figure 3).
- In all scenarios evaluated, the device cost for iStent *inject* was more than offset by savings in surgical procedure, patients' follow-up and AEs management (Results are shown for medium penetration scenario in Figure 4).

Figure 3. Budget impact results

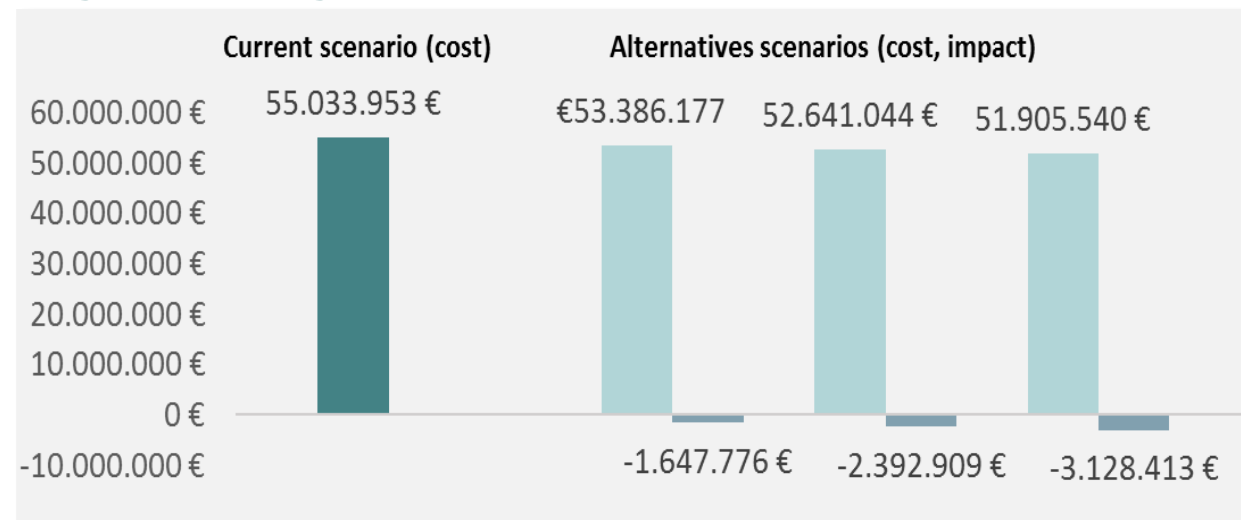
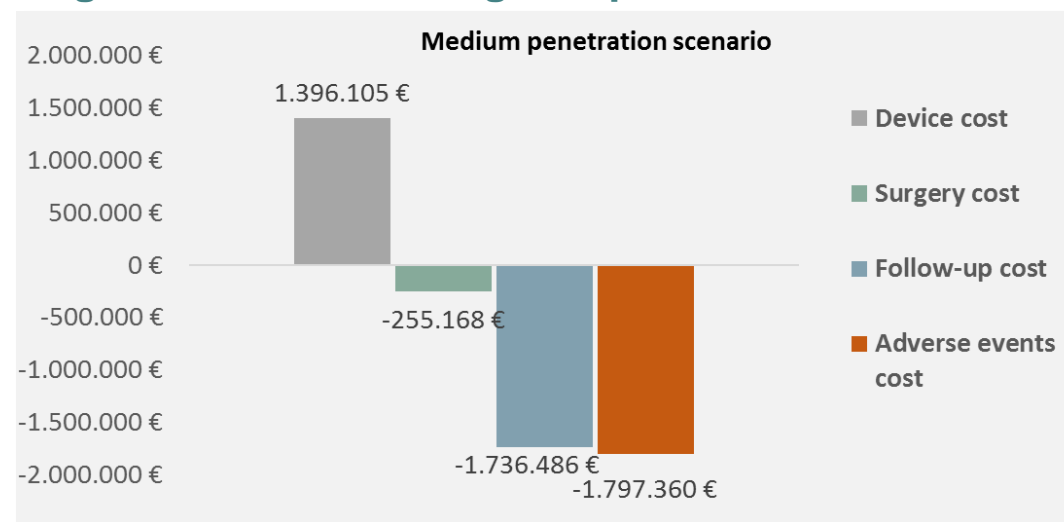


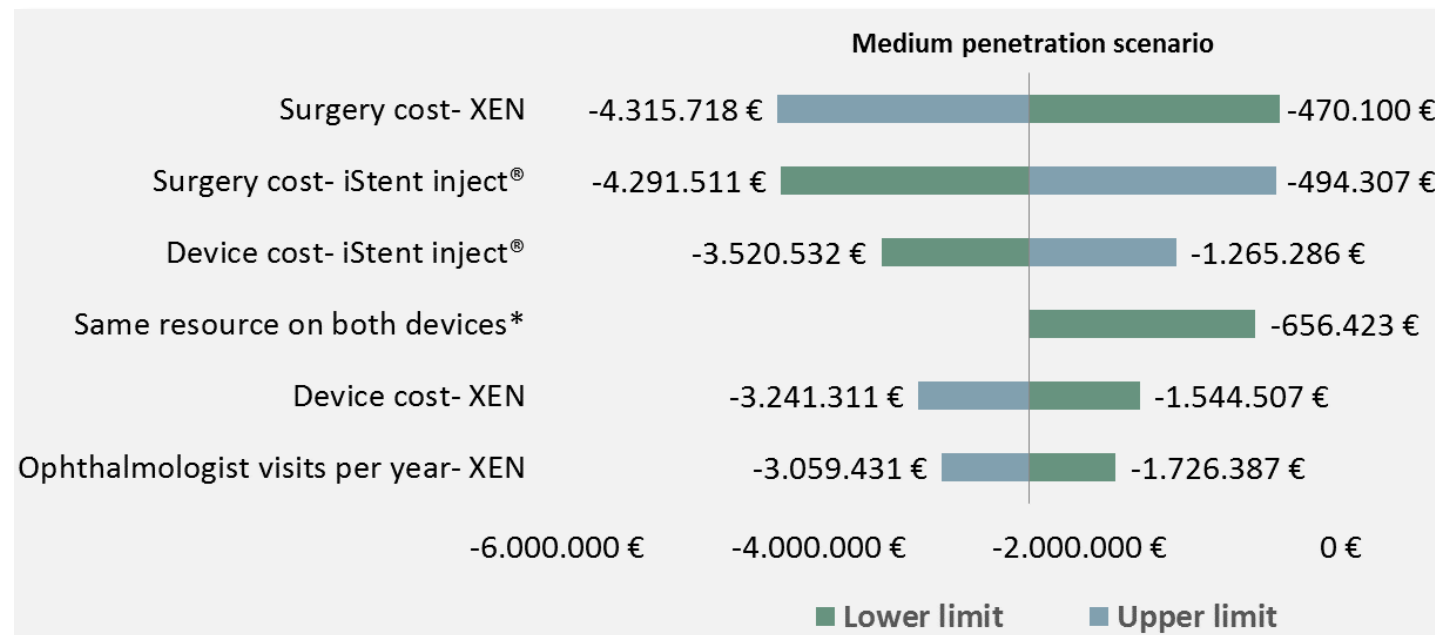
Figure 4. Detail of budget impact results



# RESULTS

- In all scenarios evaluated, the **sensitivity analyses** indicated that iStent *inject* would continue to produce savings under parameter variations, confirming that the results are robust (Results are shown for medium penetration scenario in Figure 5).

Figure 5. Sensitivity analysis for the medium penetration scenario



\* Scenario analysis: it is assumed that patient follow-up is the same after implantation of both devices

# CONCLUSIONS

- The results of the analysis indicate that, compared to the current scenario (use of XEN®), the introduction of iStent *inject* for combined glaucoma-cataract surgery, in mild-to-moderate OAG, would deliver substantial savings for the Spanish NHS.