Clinical Review (continued)

- Differences were observed in the baseline average visual field defect mean deviation between the two populations: -3.77, -3.80, and -1.5 dB in the TB + C, TB + S, and SC + C groups, respectively.
- Baseline VF defect has not been reported in the SC group.
- 50% of patients in all treatment groups had IOP under control at 12 months (Table 1).
- Reduction in IOP by 3.20% was observed in 66%, 90.2%, and 55.6% of unmedicated patients in the TB + C, TB + S, and SC + C groups, respectively. An estimated 76.3% of patients in the SC + C group experienced 22.9% reduction in IOP while consuming some or fewer medications compared to baseline. Reduction in mean medication use at 12 months was 1.4, 1.2, 1.8, and 1.9, respectively.
- No patients in the standalone TB group had uncontrolled IOP (>21 mmHg) or experienced an AE with a cost consequence for hospitals at 12 months (Table 1).
- 24.6% of patients implanted with SC experienced hypotony (Table 1).

Economic Analysis

- Annual costs for TB + C, TB + S, SC + C, and SC were €2,886, €2,439, €3,189, €4,077, and €2,886, respectively (Table 2).
- Surgery was a major driver of total costs across all MIGS (59.8% of total costs).
- Costs from AEs were higher in the refractory population than in patients with mild-to-moderate glaucoma due to a higher need for explanation of the implant.
- Number of ophthalmologist visits per year for patients with controlled IOP was 4, 6, and 4 in patients implanted by TB, S, and SC, respectively. Patients with hypotony or uncontrolled IOP utilized 4 additional visits, with each visit costing €33.
- Ophthalmologist visits costs were €549, €468, €731, €1,005, and €338 in the TB + C, TB + S, SC + C, and SC groups, respectively.
- 1-way sensitivity analyses showed that total costs are sensitive to uncertainty in cost of stem, explant, ophthalmologist visits, and AEs such as cyclodialysis cleft, choroidal effusion and stent dislodgement (Figure 1).
- Probabilistic analysis showed that total costs may vary by 21-40% due to uncertainty in efficacy, risk of AEs, unit costs and resource utilization (Figure 2).

DISCUSSION

- Both mild-to-moderate and refractory glaucoma patients experienced a reduction in IOP and medication use over 12 months, regardless of the type of MIGS.
- The efficacy and safety of SC stem procedure has been examined in patients with severe glaucoma who failed all previous treatment modalities as opposed to TB and S stem surgeries that have shown to reduce IOP in the mild-to-moderate glaucoma population.
- According to the National Institute for Health and Care Excellence (Interventional procedures guidance 57; February 2017), the evidence for the use of TB stem is adequate in quality and quantity. No major safety concerns have been raised for the TB stem. Other stems such as SC are currently undergoing review by NICE.
- Significant differences exist between the trials in the mild-to-moderate population that prevents meaningful comparative inferences.

CONCLUSION

- In the mild-to-moderate population, follow-up visits required for the surveillance of AEs such as hypotony was a key driver of differences in annual treatment cost between TB and S type of stems.
- In the refractory population, annual treatment costs were higher in the SC + C group compared to the SC group, in part due to the cost of cataract surgery, ophthalmologist visits, and AEs.
- When considering costs of MIGS, one must consider the population of interest, whether cataract surgery is performed, subsequent ophthalmologist visits, and the risk of AEs, in addition to the price of stems.

REFERENCES