Budget Impact Analysis (BIA) of Introduction of the TearCare® System for the Treatment of Meibomian Gland Dysfunction (MGD)-Associated Dry Eye Disease (DED) in the United States (US)

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BACKGROUND

Current treatment of DED due to MGD involves prescription eye drops, offering symptomatic relief but with limitations such as delayed onset of action, tolerability issues, and the failure to target the root cause of MGD.[1,2] TearCare, an FDA-cleared device indicated for DED due to MGD provides a promising treatment alternative to improve patient symptoms and address an unmet need in this ocular space.[3]

TearCare is intended for the application of localized heat therapy for adult patients with evaporative DED due to MGD, when used in conjunction with manual expression of the meibomian glands.[4]

A BIA was developed using Microsoft Excel to assess the financial impact of increasing the TearCare market share in treating MGD-associated DED in patients aged ≥18 years, from a US healthcare payor perspective.

OBJECTIVE

To assess the budget impact of increasing the TearCare market share against prescription drops in individuals aged ≥18 years with MGD-associated DED from a US healthcare payor perspective.

METHODS

The BIA assumed a hypothetical Medicare health plan with 1 million lives, and the patient flow was based on anticipated number of eligible patients over 2 years (Table 1).[5-8]

Model inputs included population characteristics, treatment allocation, market share, and treatment persistence.[9] Prescription eye drops (cyclosporine 0.05%, lifitegrast 5%, cyclosporine 0.09%) were used as comparators in the model.

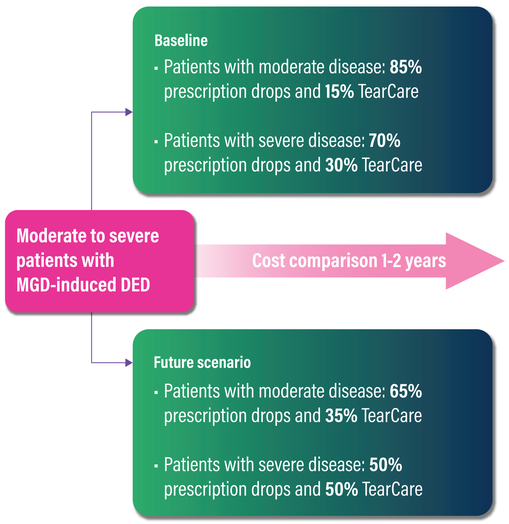
The model assumed a 20% increase in TearCare market share and incorporated treatment costs and healthcare resource use to calculate total per member per year (PMPY) costs over 2 years.[10]

Table 1: Eligible population

Model Parameters	Default Value	Number of Patients
Total plan size		1,000,000
Overall, aged 18-49 years[8]	42%	
Overall, aged 50-64 years[8]	19%	783,000[a]
Overall, aged ≥65 years[8]	17%	
Incidence DED 18-49 years[7]	3%	
Incidence DED 50-64 years[7]	8%	57,150[b]
Incidence DED +65 years[7]	16%	
Incidence moderate to severe DED[6]	56%	24,003[c]
% DED due to MGD[5,6,7]	75%	
Moderate DED[6]	71%	17,042[d]
Severe DED[6]	29%	6,961[e]

a.Total number of adults in the US; b. Number of adults living with DED; c. Number of patients with moderate to severe DED due to MGS; d. Number of patients with moderate DED; e. Number of patients with severe DED

Figure 1: Model Structure



RESULTS

Over a 2-year time horizon, a 20% market share increase for TearCare showed cost savings in the total estimated plan with a $36.86 PMPY difference for TearCare and prescription drops, respectively (Figure 2).

Sensitivity analysis, adjusting parameters by ±20%, indicated sensitivity to the proportion of patients with moderate DED using prescription eye drops, incidence of moderate to severe DED, and cyclosporine 0.05% drop costs (Figure 3).

In a scenario where 10% of patients discontinued drops and did not switch to TearCare, the model resulted in cost savings with a $33.49 PMPY difference over 2 years (Figure 4).

Figure 2: Cost per member over 2 years

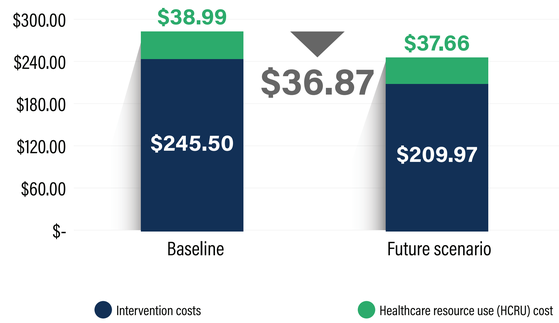


Figure 3: One-Way Sensitivity Analysis, PMPY results (all values varied ± 20%)

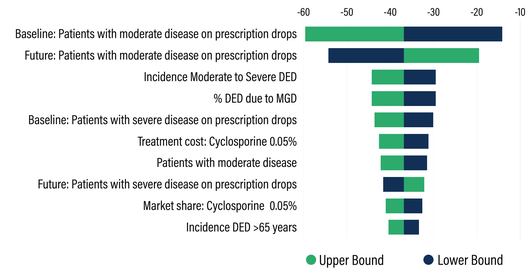
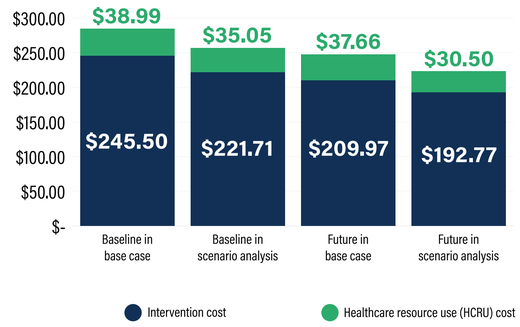


Figure 4: Scenario Analysis, assuming 10% of patients who discontinue prescription drops at each time point will not switch to TearCare, PMPY



DISCUSSION

Our findings not only underscore the tangible benefits of TearCare but also highlight the imperative for further economic analyses spanning diverse therapies and interventions over extended durations. This study advocates for future research in the cost-effectiveness of TearCare for its value demonstration in healthcare settings.

LIMITATIONS

Limited literature exists on assessing the budget impact of therapies for DED. Individual health plan expenses may vary due to factors like co-pay and drug acquisition costs, while manufacturer discounts and rebates were not considered due to their variability. Adverse events were omitted given their low incidence and mild nature in patients receiving TearCare.

CONCLUSION

The results of this BIA demonstrate that increasing the market share of TearCare may be budgetarily efficient from a US payor perspective. An increase in the TearCare market share of 20% was cost-savings overall when compared to prescription drops for patients with moderate to severe DED due to MGD. Adoption of TearCare for patients with DED due to MGD is estimated to result in meaningful cost savings (PMPY: $36.87).

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