Real-World Utilization and Treatment Adherence of Brand and Generic Cyclosporine Ophthalmic Emulsion in Dry Eye Disease

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Poster #: 5129

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BACKGROUND

- Dry eye disease (DED) is a chronic ocular condition associated with substantial burden on quality of life and healthcare utilization.
- Cyclosporine ophthalmic therapy is a key anti-inflammatory treatment, requiring consistent, long-term use for clinical benefit.
- Real-world adherence remains suboptimal, influenced by the delayed onset of effect and treatment-related barriers
- A generic cyclosporine formulation was introduced in 2022, but real-world evidence on utilization, switching, and adherence remains limited.

OBJECTIVE

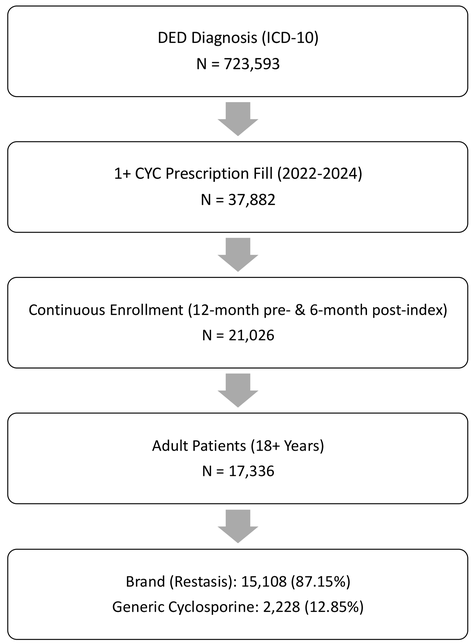
To compare real-world utilization, treatment adherence, switching, and discontinuation between brand and generic cyclosporine ophthalmic therapy among patients with dry eye disease

METHODS

- **Study Design & Data Source:**
  - Retrospective cohort study using 2022–2024 Merative™ MarketScan® Commercial Claims data
- **Population:**
  - Adults (≥18 years) with DED and an incident cyclosporine prescription fill (Feb 2022–Dec 2023) with ≥12 months continuous enrollment pre- and post-initiation
- **Exposure:**
  - Initiation of brand (Restasis®) vs generic cyclosporine ophthalmic therapy
- **Outcomes:**
  - Adherence (PDC), treatment switching, and discontinuation (≥60-day gap)
- **Analysis:**
  - Kaplan–Meier methods assessed time to switching/discontinuation
  - Cox proportional hazards models estimated adjusted risks of switching and discontinuation, controlling for demographic, clinical, and utilization-related factors

RESULTS

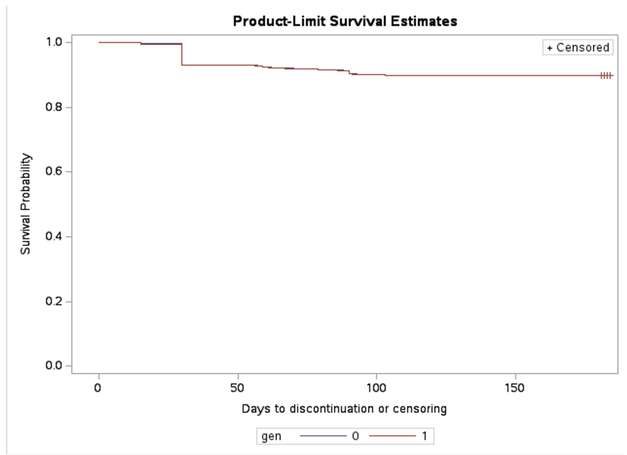
Figure 1. Study Cohort Attrition



Study Cohort Overview

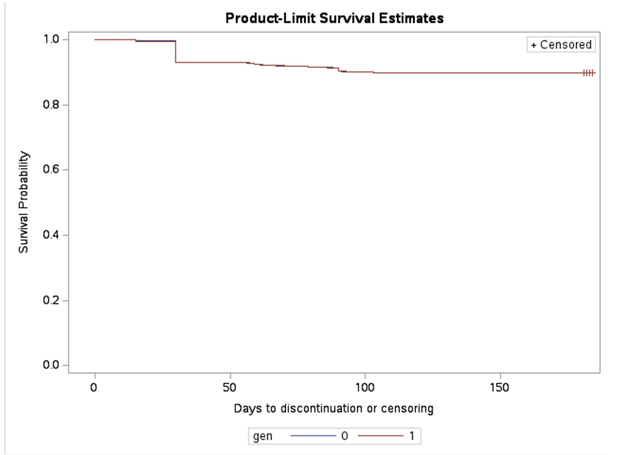
- Final cohort included **17,336 adult DED patients** initiating cyclosporine therapy
- Mean age was **51.5 ± 10.2 years**, and **81.1% were female**
- Most patients initiated **brand Restasis (87.2%)** versus generic cyclosporine (12.9%)
- Common comorbidities included **dyslipidemia (39.3%)**, **hypertension (31.4%)**, and **depression (16.0%)**
- Indicators of DED severity included **primary DED diagnosis (38.3%)**, **drug-induced dryness (18.5%)**, and **Sjogren's syndrome (6.6%)**

Figure 3. Kaplan-Meier - Time to Switch



Brand cyclosporine users demonstrated a 1.72x higher risk of discontinuation compared with generic users

Figure 4. Kaplan-Meier - Time to Discontinuation (60+ days)



Brand users were 12.46x more likely to switch therapy, transitioning from brand to generic cyclosporine

Table 1. Adherence: Brand vs Generic

PDC	N	Mean	SD
Brand	15,108	0.39	0.27
Generic	2,228	0.32	0.25
Total	17,336	0.38	0.27

PDC: proportion days covered; SD: standard deviation

Table 2. Adherence: Brand vs Generic

Variable	aHR	95% CI LL	95% CI UL
Discontinuation	1.72	1.65	1.78
Switch	12.46	7.35	21.1

aHR: adjusted hazard ratio; CI LL: confidence interval lower limit; CI UL: confidence interval upper limit

CONCLUSIONS

- Adherence to cyclosporine ophthalmic therapy in DED was **consistently low** in real-world settings
- Brand initiators demonstrated **higher risks of switching and discontinuation** compared with generic users
- Early drop-offs in persistence suggest **critical adherence challenges within the first three months of therapy**
- **Key takeaway:** Addressing cost, tolerability, and early treatment barriers is essential to improve long-term adherence and outcomes in DED

LIMITATIONS

- Claims data measured **dispensing, not actual medication use**, potentially overestimating adherence
- Lack of **clinical detail** (disease severity, symptom burden, tolerability) limits interpretation of adherence drivers
- **Provider attribution and prescribing context** cannot be fully captured in claims data
- Results may have **limited generalizability** beyond commercially insured populations

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