REAL-WORLD PATIENT PERSISTENCE: A COMPARISON OF PROSTAGLANDIN ANALOGS USED FOR THE TREATMNENT OF OPEN-ANGLE GLAUCOMA OR OCULAR HYPERTENSION

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BACKGROUND

- Glaucoma is one of the leading causes of irreversible vision loss and blindness in Canada. The most common form of glaucoma is primary open-angle glaucoma and is associated with elevated pressure in the eye. Prostaglandin analogs (PGAs) are recommended as initial therapy to lower intraocular pressure in glaucoma patients[1].
- Medication adherence is crucial for effective glaucoma control and delaying disease progression. Patients with glaucoma who have lower rates of compliance and persistence are presumed to be at greater risk of developing progressive visual loss[2].
- Real world data comparing patient persistence on PGAs in Canada is limited.

OBJECTIVE

- This study aims to compare persistence and compliance on latanoprostene bunod, latanoprost, latanoprost generic and bimatoprost, within a 12-month analysis period.

METHODS

Data Source:

- Data were obtained from the IQVIA Ontario Drug Benefit (ODB) database, which tracks reimbursed drug transactions for anonymized patients. This data was obtained for all patients making a claim for a PGA between July 1st 2019 and June 30th 2020.
- Ontario Drug Benefit (ODB) program:
  - Longitudinal prescription drug claims
  - Patient-level data captured from active claimants, comprising 100% of the Ontario public market through ODB

Study Design – Overview:

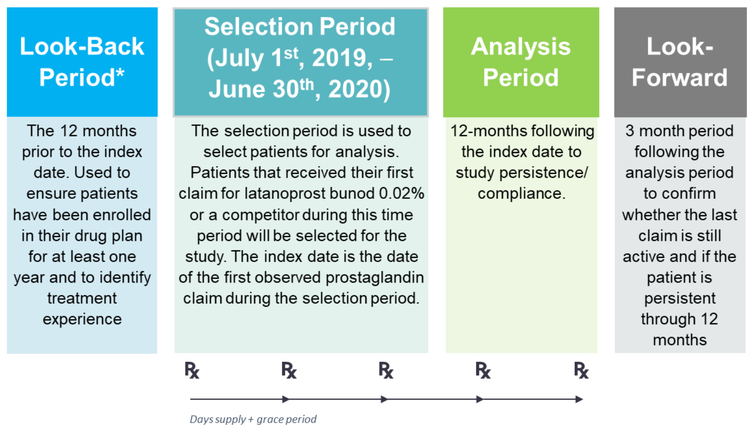
- In this retrospective cohort stud patients were indexed on the date of first claim for latanoprost, latanoprost generic, latanoprostene bunod 0.02% and bimatoprost 0.1%, and followed for 12 months to measure persistence. Persistence refers to the continuity of treatment, which may be measured by the number of prescription refills over a period of time. Patient persistence was measured over a 365-day time period. Patient compliance was measured for a 12-month analysis period, or until the patient was no longer persistent
- Patients were required to be active during the lookback period (12 months prior to index date) and the look-forward period (3-months following 12-month analysis period). Active patients are those that had at least 1 claim during the periods, either within or outside of the observed market. This was used to determine treatment experience and ensure that patients had valid claims activity for the duration of the study period. (Figure 1)
- The analysis leveraged the following variables from each of the longitudinal databases:
  - Claim Date
  - Product Name and Strength
  - Quantity dispensed (units)
  - Number of days supplied

Study Design – Days Supply Standardization:

- To ensure the number of days supplied for each claim was consistent, a standardization algorithm was applied to all claims. In the ODB dataset, units are not entered with consistent quality. Therefore, by comparing the cost of the claim to the published price per mL, the number of units was calculated. Using this standardized number of units, the number of days supplied was calculated using the days

METHODS

Figure 1: Study Design



Analysis – Persistence:

- Persistence was measured from index to first observed significant gap in therapy (days supplied of claim with an allowable grace period of 90 days).
- Patients were required to have valid persistence measures to be included (i.e. persistence >0 days)

Analysis – Compliance

- Compliance was measured as a Medication Possession Ratio (MPR) using a fixed denominator (365 days).
- Patients required at least 2 subsequent persistent claims to evaluate compliance.

Statistical Analyses:

- Persistence between latanoprost, latanoprost generic, latanoprostene bunod 0.02% and bimatoprost 0.1% was described using Kaplan-Meier curves and compared using log-rank tests. The distribution of patients on latanoprost, latanoprost generic, latanoprostene bunod 0.02% and bimatoprost 0.1% was compared based on chi-square tests.
- Compliance between latanoprost, latanoprost generic, latanoprostene bunod 0.02% and bimatoprost 0.1% was compared using Fisher's exact test to compare the proportion of patients with >80% and <80% compliance.
- Statistical comparisons were compared for the same patient cohorts at 365 days

RESULTS

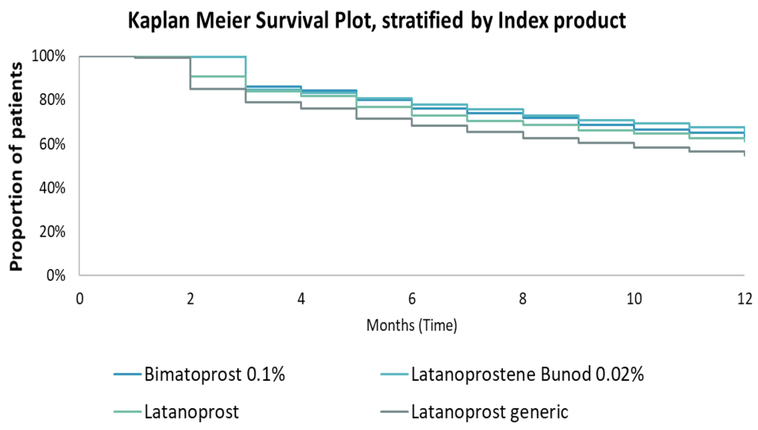
Study Populations:

- 13,262 patients were included in the persistence analyses. 1,041 patients indexed on latanoprost; 4,811 patients indexed on latanoprost generic; 662 patients indexed on latanoprostene bunod 0.02%; and 6,748 patients indexed on bimatoprost 0.1%.

Analysis– Persistence:

- 13,262 patients had valid persistence and were included in the persistence analysis. (Figure 2)
- Patients who indexed on latanoprostene bunod demonstrate significantly higher persistence at 12 months (65.11%, p<0.001) compared to latanoprost generic (54.73%). 12-month persistence among patients initiating on latanoprostene bunod (65.11%) is similar to those initiating on latanoprost (61.19%, p=0.055), and bimatoprost (63.17%, p=0.268).

Figure 2: Proportion of patients persistent

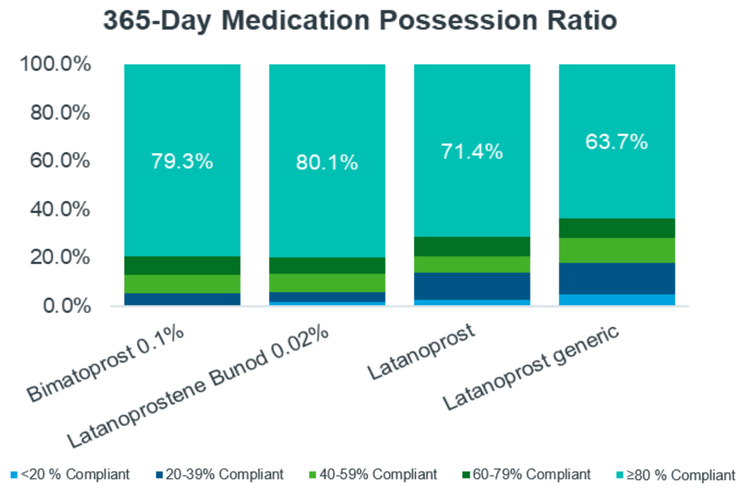


RESULTS

Analysis – Compliance

Latanoprostene bunod had a significantly higher proportion of patients with an MPR of ≥80% at 12 months (80.1%) compared to latanoprost (71.4%, p=0.005) and latanoprost generic (63.7%, p=<0.001). 12-month compliance among patients initiating on latanoprostene bunod (80.1%) is similar to those initiating bimatoprost (79.3, p=0.568).

Figure 3: Proportion of compliant patients



LIMITATIONS

- Diagnosis information is not available in the database; overall glaucoma is assumed with a claim for a PGA.
- Reasons for discontinuation were not documented in the longitudinal claims database.
- Monoprost has been excluded from the latanoprost group due to non-comparable single-use packaging.

CONCLUSIONS

After 1 year of therapy:

- More patients were persistent on latanoprostene bunod 0.02% than bimatoprost 0.01%, latanoprost and latanoprost generic (65.11% vs 63.17%, 61.19% and 54.73%, log-rank p=0.268, p=0.055, and p<0.001).
- Patients demonstrated greater compliance on latanoprostene bunod 0.01% than bimatoprost 0.01%, latanoprost, latanoprost generic (80.1% vs 79.3%, 71.4%, 63.7%, log-rank p=0.568, p=0.005, p<0.001)

Overall, the results demonstrated that persistence and compliance to PGAs is strong. Greater than half of the patients initiating on latanoprostene bunod 0.02%, bimatoprost 0.01%, latanoprost and latanoprost generic remain persistent after 365 days. Greater than three quarters of patients on latanoprostene bunod 0.02% and bimatoprost 0.01% were over 80% compliant. However, further understanding of patient outcomes and clinical endpoints is required to improve persistence within the PGA class and prevent vision loss among patients with open-angle glaucoma or ocular hypertension.

REFERENCES

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ACKNOWLEDGEMENTS

The authors thank Marta Mella of IQVIA Canada for providing analytical and statistical support through the development of this study.

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