To determine the extent by which the price ratio between topical glaucoma medications, laser trabeculoplasty, and trabeculectomy surgery on a single eye for countries throughout the world.

Availability, accessibility, and cost of these different procedures or incisional surgery could be more cost-effective interventions in countries where topical medications are very expensive or difficult for patients to get. These data were used to determine the percent of median annual household income (MHI) price associated with treatment.

The United States has some of the highest prices for glaucoma treatments and the highest price ratio of brand name to generic latanoprost.

Overall, glaucoma therapies may be more expensive for the average resident of a developed country than for the average resident of a developed country.

Projected to affect 110 million people worldwide by 2040.

Glaucoma is one of the leading causes of blindness.

Data Collection

- Collected data on the retail prices for all classes of topical glaucoma medications and prices for a patient to undergo laser trabeculoplasty and trabeculectomy surgery on a single eye for countries throughout the world.

- Pricing data for each country was obtained from medication pricing lists and fee schedules published on government websites, drug pricing databases, academic publications, and/or personal communications with ophthalmologists practicing in the country of interest.

- If different prices were obtained from multiple sources in a country, prices were averaged and reported as mean values.

- Prices were divided by median annual household income of each country (obtained from published Gallup, Inc. polling data) to calculate the price percentage relative to annual median household income (MHI).

- Prices were multiplied to obtain a yearly drug cost to treat both eyes, assuming that a 2.5 mL bottle lasts 1 month with once-daily dosing, 5 mL bottle lasts 1 month with twice-daily dosing, etc.

METHODS

Data Collection

- Collected data on the retail prices for all classes of topical glaucoma medications and laser trabeculoplasty, and trabeculectomy for countries worldwide.

- To compare costs of different glaucoma treatment options between countries relative to the median annual household income in each country.

- To determine the extent by which the price ratio between a brand name and generic formulation of latanoprost vary among countries worldwide.

RESULTS

Price Ratio of Brand Name Xalatan to Generic Latanoprost

<table>
<thead>
<tr>
<th>Country</th>
<th>Price Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>3.5</td>
</tr>
<tr>
<td>Canada</td>
<td>2.5</td>
</tr>
<tr>
<td>Australia</td>
<td>2.1</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1.8</td>
</tr>
<tr>
<td>Japan</td>
<td>1.6</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.0</td>
</tr>
<tr>
<td>China</td>
<td>1.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.0</td>
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<tr>
<td>India</td>
<td>1.0</td>
</tr>
<tr>
<td>France</td>
<td>1.0</td>
</tr>
<tr>
<td>UK</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Price of 1 Year Supply of Eye Drops Relative to Median Annual Household Income (MHI)

- Prices adjusted for inflation and purchasing power parity exchange rates (example: The Economist’s “Big Mac Index”)

- Prices were divided by median annual household income of each country (obtained from published Gallup, Inc. polling data) to calculate the price percentage relative to annual median household income (MHI).

Price of Laser Trabeculoplasty Relative to MHI

- Prices were multiplied by Assumed a bottle of eye drops contained same number of drops; may be differences based on manufacturer

Price of Trabeculectomy Relative to MHI

- The United States has some of the highest prices for glaucoma treatments and the highest price ratio of brand name to generic latanoprost.

- Overall, glaucoma therapies may be more expensive for the average resident of a developed country than for the average resident of a developed country.

Key Findings:

- There is considerable country-to-country variation in the prices of topical medications, laser trabeculoplasty, and trabeculectomy.

- Generic timolol was the cheapest topical glaucoma medication in all studied countries, but in 7 countries, it costs ≥ 1% of median annual household income.

- The United States has some of the highest prices for glaucoma treatments and the highest price ratio of brand name to generic latanoprost.

- Overall, glaucoma therapies may be more expensive for the average resident of a developed country than for the average resident of a developed country.

Questions? Please contact Peter Zhao, MD (zhaope@med.umich.edu)

Study Strengths:

- Used combination of data sources to obtain local prices of glaucoma treatment in over 20 countries.

- Compared exchange-rate-adjusted prices across different countries and used median annual household income to estimate financial burden of treatment.

Study Limitations:

- No universal, reliable, and open data source exists for comparing local pricing information.

- Prices may vary significantly between different regions within each country and government pricing data may not reflect market pricing.

- Study does not address the availability of eye drops, ophthalmic lasers, or surgical equipment, or availability of surgeons for laser treatment or surgery.

- Varying availability of health insurance to cover cost of these different interventions in different countries.

- Assumed a bottle of eye drops contained same number of drops; may be differences based on manufacturer.

Conclusions and Implications:

- More worldwide monitoring of glaucoma drug pricing is needed in order to determine where patients may be at increased risk of vision loss due to prohibitively high costs associated with treatment.

- More research is needed to examine whether laser procedures or incisional surgery could be more cost-effective interventions in countries where topical medications are very expensive or difficult for patients to get access to them.

REFERENCES


