

Cost Trends of Hydroquinone and Other Dyschromia Treatments in the United States

Eric J. Yang MD,^{a,*} Shari R. Lipner MD PhD^b

^aDepartment of Dermatology, Warren Alpert Medical School, Brown University, Providence, RI

^bWeill Cornell Medicine, Department of Dermatology, New York City, NY

*Corresponding author

INTRODUCTION

Skin dyspigmentation is a common dermatologic concern, particularly in patients with skin of color.¹ Hydroquinone is often used as a first-line therapy for dyschromia, and is approved for treatment of melasma, chloasma, freckles, senile lentigines, and hyperpigmentation.² Hydroquinone 4% cream is available only by prescription in the United States (US). Hydroquinone formulations with concentrations less than 4% were previously available over-the-counter (OTC), however sales were prohibited by the US Food and Drug Administration (FDA) as of September 25, 2020. Per the Coronavirus Aid, Relief, and Economic Security (CARES) Act and Over-the-Counter Drug Monograph Reform, hydroquinone is now recognized as Category II or not generally recognized as safe and effective.^{3,4} Given the high prevalence of dyschromia in the US population, our objectives were to investigate the cost trends of prescription hydroquinone, as well as other second-line alternatives for dyschromia, to evaluate affordability for patients.

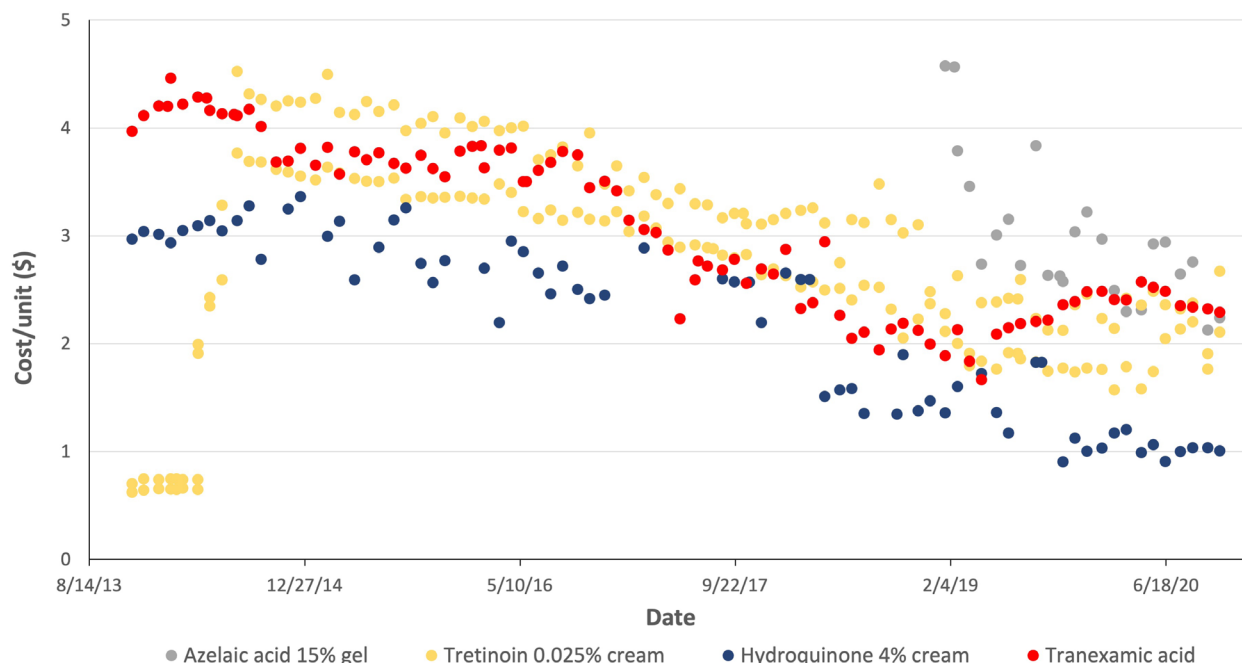
METHODS

National Average Drug Acquisition Cost (NADAC) data from the Centers for Medicare & Medicaid Services from November 21, 2013 to October 21, 2020 were analyzed for this study. The costs of hydroquinone 4% cream, tretinoin 0.025% cream, and azelaic acid 15% gel per gram (g) and tranexamic acid per 650 g tablet were calculated. Costs were adjusted for inflation to 2020 dollars by the Consumer Price Index for All Urban Consumers (CPI-AUCSL) to allow for comparisons.

RESULTS

The cost of topical 4% hydroquinone was \$1.01/g in October 2020, as compared to an inflation-adjusted cost of \$2.97/g in 2013, representing an annual cost decrease of 14.5%. Comparatively, costs of topical azelaic acid 15% gel, tretinoin 0.025% cream, and oral tranexamic acid were \$2.24/g, \$2.39/g, and \$2.29/650 g tablet, respectively, in October 2020 (Figure 1). The costs of

FIGURE 1. Trends in the per-unit costs of medications for treatments for dyschromia from November 21, 2013 to October 21, 2020. All costs are adjusted to 2020 dollars using the Consumer Price Index (CPI). One unit of azelaic 15% gel, tretinoin 0.025% cream, and hydroquinone 4% cream was 1 gram (g). One unit of tranexamic acid was a 650 mg tablet.



topical azelaic acid and oral tranexamic acid decreased at annual rates of 33.6% and 7.6%, respectively. The cost of tretinoin cream increased significantly from \$0.70/g in 2013 to \$4.14/g in 2014, and then decreased gradually at a rate of 8.5% annually.

DISCUSSION

Overall, hydroquinone costs have decreased substantially over the past 7 years. Downward cost trends were also observed for off-label dyschromia therapies. Nevertheless, prescription-strength hydroquinone is the most effective treatment for melasma, comparable to triple combination cream (hydroquinone, tretinoin, and corticosteroid), and has remained the most affordable prescription treatment option.⁵

One limitation of our study is that NADAC is calculated only for medications covered by Medicaid and sufficient cost data submitted by retail pharmacies. Prescription tranexamic acid is not available in the US at doses used to treat dyschromia. For many patients for whom treatment of dyschromia is not covered by their insurance, out-of-pocket costs can be prohibitive.

The elimination of OTC sales of topical hydroquinone removes the most accessible treatment option for dyschromia patients, many of whom are not managed by prescription therapies. With decreased market competition from a lack of OTC alternatives moving forward, costs of dyschromia treatments should continue to be monitored to ensure that patients have affordable options to manage this often difficult-to-treat condition.

DISCLOSURES

The authors have no conflicts.

Data availability statement: The data that support the findings of this study are available in the Medicaid Pharmacy Pricing database at <https://www.medicaid.gov/medicaid/prescription-drugs/pharmacy-pricing/index.html>

REFERENCES

1. Alexis AF, Sergay AB, Taylor SC. Common dermatologic disorders in skin of color: a comparative practice survey. *Cutis*. Nov 2007;80(5):387-94.
2. Hydroquinone 4% cream [package insert]. Preferred Pharmaceuticals Inc; 2020.
3. H.R.748 - CARES Act. legislation. 116th Congress Public Law 136. Updated 03/27/2020. Accessed November 15, 2020, <https://www.congress.gov/bills/116/congress/house-bill/748/text?fbclid=IwAR3ZxGP6AKUI6ce-dIWSU6D5MfCLD576nWNBV5YTE7R2a0ldLY4Usw4oOv4>
4. Congress Enacts OTC Monograph Reform. JD Supra. Accessed November 15, 2020, <https://www.jdsupra.com/legalnews/congress-enacts-otc-monograph-reform-96907/>
5. McKesey J, Tovar-Garza A, Pandya A. Melasma treatment: An Evidence-based review. *Am J Clin Dermatol*. 2020 Apr 2020;21(2):doi:10.1007/s40257-019-00488-w

AUTHOR CORRESPONDENCE

Eric J. Yang MD

E-mail:..... ericjyang@outlook.com