

Research Article

Palatability and preference of Eyestonia™ in age related macular degeneration

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Abstract

Eyestonia™ is a multivitamin that is indicated for the delay of age related macular degeneration (AMD) progression and other retinopathies. Its medicinal ingredients include lutein, zinc, copper, vitamins A, C, and D₃, as well as bilberry extract. We conducted a study to determine Eyestonia's palatability, side effect profile, and taste preferences in 50 patients with retinal eye diseases in Vancouver, Canada. The survey included 8 multiple choice questions which determined patients' preference for Eyestonia™ and its palatability. We used descriptive statistics to compute percentages for responses of each question. We found that overall, Eyestonia™ was superior to patients' current vitamin of choice and it has favorable palatability and was well liked by our patient cohort. Eyestonia™ is thus a competitive vitamin that is marketed in Canada to reduce progression of retinal diseases.

Abbreviations and Symbols: TM = trademark.

Introduction

Eyestonia™ is a multivitamin manufactured by Viva Pharmaceuticals Inc. indicated for the delay of age related macular degeneration (AMD) progression and development of other retinal diseases such as diabetic and hypertensive retinopathies [1]. Its primary medicinal ingredients include lutein (10 mg), vitamin A (1511 mcg), vitamin E (26.8 mg), vitamin D₃ (12.5 mcg), zinc (9 mg), bilberry extract (60 mg), and copper (0.9 mg) [1].

A landmark clinical trial by the Age-Related Eye Disease Study (AREDS) Research Group showed that antioxidant vitamins including vitamin C, vitamin E, beta carotene (vitamin A), and zinc have shown to significantly decrease the risk of developing advanced (neovascular) age-related macular degeneration [2,3]. Studies have also indicated that lutein supplementation can decrease the risk of AMD [4]. Copper and zinc deficiencies in the retinal pigment epithelium (RPE) and the choroid complex have also been associated with AMD, thus supplementation of these essential metals might decrease the progression of AMD [5]. Research has also shown that bilberry extract, an antioxidant, is protective against macular degeneration and other retinopathies [6].

Multivitamins are generally safe but might have minor adverse effects including upset stomach, headaches, and unpleasant taste, all of which can lead to decreased multivitamin adherence [7].

The objective of our study was to examine patient preferences including palatability and taste of Eyestonia™ in a sample of 50 AMD patients the Eye Care Centre, which is a tertiary care center affiliated with the Vancouver General Hospital and University of British Columbia. As palatability and overall preference for a particular vitamin significantly impacts a patient's adherence to it, we deemed it important to investigate.

Methods

The study was conducted at the Eye Care Centre at 2250 Willow Street Vancouver, BC, Canada and approved by the UBC ethics board. A sample of 50 patients with retinal eye diseases were given an 8 question-multiple choice survey to be completed at their ophthalmologist's office at the Eye Care Centre. The questions assessed the patients' dosing preferences, current vitamin use, preference for Eyestonia™, noticeable after effects, and suggestions for Eyestonia™ improvement. The survey questions and respective options were as follows:

- 1) What is your preferred dosing regimen? (Once or twice daily).
- 2) How happy are you with the taste of Eyestonia™? (Very happy, moderately happy, somewhat happy, very unhappy).
- 3) How satisfied are you with Eyestonia™ after ingesting it? (Very happy, moderately happy, somewhat happy, slightly happy, very unhappy).
- 4) Did you feel any noticeable after effects from taking Eyestonia™? (Yes or no).
- 5) 5.1: Do you prefer Eyestonia™ over your current vitamin? (Yes or no).
5.2: Which vitamin are you currently taking? (Vitalux™, Preservision™, iCaps™, VisiVite™, or other).
- 6) 6.1: How they would improve the vitamin? (appearance, dosage, taste, texture, or other).
6.2: Description of "other".

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Key words: Eyestonia, multivitamin, palatability, retina, vision

Received: May 19, 2017; **Accepted:** May 29, 2017; **Published:** May 31, 2017

We used descriptive statistics to compute percentages for the responses for each question.

Results

The first question reported that most patients prefer a once daily regimen compared to twice daily (Table 1). For the second question, most patients reported feeling very happy with Eyestonia's™ palatability (Table 1). In question 3, nearly two thirds of patients reported feeling satisfied after ingesting the vitamin (Table 1). The fourth survey question indicated that almost no patients had after effects following ingestion (Table 1). It is to be noted that the patients who did have after effects had a history of digestive complications. The fifth question of the survey showed that most patients preferred Eyestonia™ over their current vitamin and the majority of patients currently take Vitalux™ as their current multivitamin (Table 1). In terms of suggestions for improvement, most patients would enhance the appearance of the vitamin or selected "other" (Table 1). Of the "other" responses, patients said they would make the pill smaller, lighter in color, and decrease the price. Other patients hoped for a larger bottle that lasts 2 months, to eliminate Eyestonia's™ aftertaste, and have a double strength pill with more vitamins and minerals.

Discussion

Overall, the results of our survey suggest that Eyestonia™ has good palatability and is well liked by AMD patients. Currently in the Canadian market, there are alternative vision protective vitamins such as Vitalux™ and Preservision™. However, Eyestonia™ might be another

viable option for patients especially as it also contains bilberry extract, which is another potent antioxidant that may have an added benefit for the prevention of AMD [6].

Our study poses several limitations. We did not collect demographic data, such as age, gender, and ethnicity. We did not take into account severity of retinal disease or collect information regarding other drugs the patient may be taking, which could alter the vitamin's palatability or contribute to the degree of adverse effects experienced by the patient. Although two patients indicated on survey forms their history of digestive problems, we did not actively collect this information from all patients, and may have influenced our results. We did not look at the effect of whether Eyestonia™ was preferred over a particular vitamin the patient is currently using (such as Vitalux™ or Preservision™). We are reporting results from a self-reported survey and we must note the host of limitations associated with this form of data collection.

Conclusion

Eyestonia™ is new vitamin marketed for AMD prevention in the Canadian market, that has an added advantage of having bilberry as another potent antioxidant, was shown in our survey to have good palatability and over all acceptability by AMD patients.

Authorship and contribution

Mr. Sodhi was involved in data entry and drafting and revising of the manuscript.

Drs Etminan and Maberley were involved in the study design, drafting, and revising of the manuscript.

Funding

Study was funded by the Department of Ophthalmology and Visual Sciences of the University of British Columbia. The Eyestonia™ multivitamins were provided by Viva Pharmaceuticals Inc.

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Table 1. Response percentages for each multiple choice question.

Question	Response	% Response
1	Once Daily	90%
	Twice Daily	10%
2	Very Happy	73%
	Moderately Happy	17%
	Somewhat Happy	10%
	Very Unhappy	0%
3	Very Happy	63%
	Moderately Happy	29%
	Somewhat Happy	8%
	Slightly Happy	0%
	Very Unhappy	0%
4	No	96%
	Yes	4%
5.1	Yes	63%
	No	37%
5.2	Vitalux™	76%
	Preservision™	12%
	Other	12%
	iCaps™	0%
	Visivite™	0%
6	Appearance	39%
	Other	33%
	Dosage	17%
	Taste	11%
	Texture	0%