



ORIGINAL ARTICLE

Prevalence of asymptomatic ocular conditions in subjects with refractive-based symptoms

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KEYWORDS

Refraction;
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Ocular health screening;
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Retinal diseases

Abstract

Background: This study aims to determine the overall prevalence of ocular conditions in a population from 19 to 64 years old, presenting with refractive-based symptoms only. Results could impact clinical standard of eye care on a similar population.

Methods: This is a retrospective study on patients seen for an eye examination at the Clinique Universitaire de la Vision (CUV), between January 2007 and 2009. Files of individuals who presented with refractive symptoms were only selected and classified by file number. Then, every third file from the beginning was kept and reviewed by a reader. A second reader did the same with every third file from the end. Both readers were trained to use the same analysis grid to classify the diagnosed ocular conditions. In the case of multiple findings, the most severe condition was considered. The overall prevalence of ocular conditions was determined by calculating their occurrence divided by the number of files analyzed.

Results: A total of 860 charts were analyzed. In 26.1% of the cases an ocular condition was diagnosed. This work establishes a higher prevalence of ocular conditions compared to another study conducted in Canada in the past. This difference can be explained by a different analytical methodology and by the fact that all examinations, in this study, were made under pupillary dilation.

Conclusion: The presence of ocular conditions in 26% of asymptomatic patients supports the need to assess ocular health under pupil dilation as part of any eye examination. However, further cost-to-benefit analysis is required before establishing such a recommendation.

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PALABRAS CLAVE

Refracción;
Pacientes
asintomáticos;

Prevalencia de condiciones patológicas oculares asintomáticas en pacientes con síntomas refractivos

Resumen

Antecedentes: Este estudio trata de determinar la prevalencia general de las condiciones patológicas oculares en una población de pacientes de 19 a 64 años de edad, que

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presentaron únicamente síntomas refractivos. Los resultados podrían suponer un impacto para los estándares clínicos de cuidado ocular en poblaciones similares.

Métodos: Este es un estudio retrospectivo sobre pacientes examinados en la Clinique Universitaire de la Vision (CUV), entre Enero de 2007 y 2009. Se seleccionaron y clasificaron por número de archivo aquellas historias de pacientes con síntomas refractivos únicamente. A continuación se seleccionó cada tercer archivo contando desde el inicio, el cual fue revisado por un mismo lector. Un segundo lector realizó la misma operación con cada tercer archivo contado desde el final. Ambos lectores fueron formados para utilizar la misma cuadrícula analítica para clasificar las condiciones oculares diagnosticadas. En caso de múltiples hallazgos se consideró la situación más severa. Se determinó la prevalencia general de las condiciones oculares mediante el cálculo de su ocurrencia, dividida por el número de archivos analizados.

Resultados: Se analizó un total de 860 historias. En el 26,1% de los casos se diagnosticó una condición patológica ocular. Este trabajo establece una mayor prevalencia de las condiciones patológicas oculares en comparación a otro estudio realizado en Canadá en el pasado. Esta diferencia puede explicarse por el uso de una metodología analítica diferente y por el hecho de que todos los exámenes de este estudio se realizaron en condiciones de dilatación de la pupila.

Conclusión: La presencia de condiciones patológicas oculares en el 26% de los pacientes asintomáticos apoya la necesidad de evaluar la salud ocular como parte de cualquier examen ocular. Sin embargo, se hace necesario un análisis adicional coste-beneficio antes de establecer dicha recomendación.

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The prevalence of common specific diseases and disorders is well known,¹ at least in developed countries where public health data are collected. First, this knowledge may help practitioners to consider who is at risk among their patients and to better diagnose any pathological condition.² For example, patients over 50 years old are routinely screened for glaucoma on this basis. Second, it helps politicians and bureaucrats to shape public health policies and to estimate for the cost associated with the management of specific diseases. Third, prevalence analysis can help universities and colleges to plan the number of human resources to train. Fourth, in some cases, a higher prevalence of a specific disease can encourage healthcare system administrators to put a better screening program in place, or to adopt a new treatment strategy, to reduce morbidity and disease-associated costs.³ Systematic screening programs for diabetic eye disease have been developed in many countries and represent a good example of such policies. They can also help to plan targeted educational campaigns to raise public awareness in order to modify their behavior.⁴ For example, large-scale surveys in the U.S. have shown that only 11% of people are aware that diabetic retinopathy comes with no initial warning symptoms and as little as 8% for open angle glaucoma.⁵ Similarly, clinical research on rhegmatogenous retinal detachments has shown that approximately 1 patient out of 3 (31.3%) has at least one asymptomatic retinal finding predisposing to retinal detachment.⁶ In such cases, educating patients at risk may prompt early detection, which helps limit the costs and negative impact of the disease.

To this point, a recent study⁷ proved that a substantial burden results from vision loss and eye disorders in the U.S. Estimates for the population younger than 40 years of age are \$14.5 billion US in direct costs and \$12.2 billion US in lost productivity. In addition, vision loss costs society 215,000

quality-adjusted life years (QALYs). This adds another \$10.8 billion US, bringing the total cost of vision loss and eye disorders to \$37.5 billion US\$ or \$17,400 US per patient.

On the other hand, some health policies are apparently not defined on the basis of cost-effectiveness analysis. For example, in 2010 British Columbia (BC) became the first and still the only jurisdiction in North America to deregulate its optical market in response to the industry's lobbying efforts, with no evidence of any public health benefit. This decision was supposedly made to lower the cost of goods, but without evaluating the potential impact of such a decision on eye health. Since then, individuals aged 19–64 years old can purchase their glasses and contact lenses based on electronic refraction data (sight testing) gathered by any lay person selling ophthalmic lenses, not validated as a prescription by an eye care professional. This deregulation implies that, in this jurisdiction, a complete eye exam, including ocular disease screening, is no longer required to obtain new glasses or contact lenses.

It is hard to estimate the immediate and long term impact of this decision because, contrary to confirmed ocular pathology, there is very limited data available about the prevalence of missed pathologies among a population consulting for sight testing, with no symptoms other than those refractive in nature.

However, we can estimate that this prevalence increases with time and aging of the population. In fact, it is known that significant fundus findings in patients presenting with no symptoms increase with age.⁸ On the other hand, there is no strong evidence that dilated fundus examinations, systematically performed, in asymptomatic younger patients yield a high level of pathology findings.⁹ This is the reason why the recommended eye examination schedule becomes more frequent for older people, although no one knows the actual prevalence of ocular abnormalities in asymptomatic patients.

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