PREVALENCE OF VISUAL IMPAIRMENT AND EYE DISEASE IN CAÑETE, PERU

Julie Brûlé OD, MSc, FAAO; **Benoit Tousignant** OD, MSc, MPH, FAAO
Université de Montréal, School of optometry

École d'optométrie
Université de Montréal

INTRODUCTION

- In Peru, few reliable epidemiological data on blindness and visual impairment are available;
- National estimates
  - — prevalence adult of blindness 2% ; main cause = cataracts
  - — moderate visual impairment at 10.2%; main cause = uncorrected refractive error
- IRIS Mundial (IM) is a multidisciplinary, non-governmental organisation (NGO) that collaborates with Peruvian health authorities to develop local eye care infrastructures to reduce preventable blindness and visual impairment in Peru.
- In 2017, Peruvian health authorities partnered with IM to organize a clinical team's visit to the rural Peruvian region of Cañete.

Purpose

- To estimate the prevalence and causes of visual impairment and blindness in the region of Cañete, for use in programme planning.

METHODS

- From January October 21-29 2017, a visiting team from IM joined local Peruvian ophthalmologists and performed ophthalmic examinations in the general population of Cañete, Peru.
- **38 volunteers**
  - — 3 ophthalmologists
  - — 1 medical doctor
  - — 10 optometrists
  - — 2 optometric assistants
  - — 7 opticians
  - — 4 nurses
  - — 3 translators
  - — 8 other
- Data collected included presenting visual acuities, objective and subjective refraction, slit lamp examination, Goldmann tonometry and fundus evaluation

RESULTS

Sample description

- **2101** patients were screened
- Median age: **52** (IQR 31 -65)
- Sex: **63%** female

Female Male

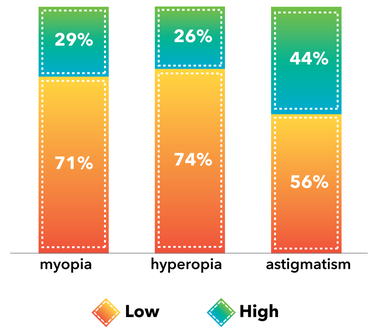
Presenting visual acuity (n=2101)

- **59.3%** of patients had normal vision or mild visual impairment
  - — 20/60 or better in the better eye
- **12.7%** of patients had moderate visual impairment
  - — < 20/60 > 20/200 in the better eye
- **19.5%** had severe visual impairment
  - — < 20/200 in the better eye
- **8.5%** were blind
  - — <20/400 in the better eye

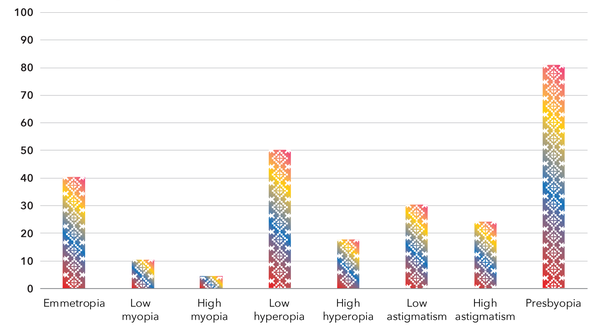
Refractive error

- Low myopia OU: **11%** of patients → ≤ -3.00 D > 0.00 D
- High myopia OU: **4%** of patients → > -3.00 D
- Low hyperopia OU: **50%** of patients → ≤ 2.00 D
- High hyperopia OU: **18%** of patients → > 2.00 D OU
- Low astigmatism OU: **30%** of patients → < 2.00 D
- High astigmatism OU: **24%** of patients → ≥ 2.00 D
- Presbyopia: **81%** → Prescribed add ≥ +1.00

Severity of refractive error by type of ametropia (n=2101)



Proportion of bilateral ametropias (%, n=2101)



Cataracts

- **8.1%** of patients had grade 3 cataracts or worsein both eyes
  - **7%** Grade 1
  - **49%** Grade 2
  - **24%** Grade 3
  - **20%** Grade 4

Severity of cases of binocular cataracts (n=1928)

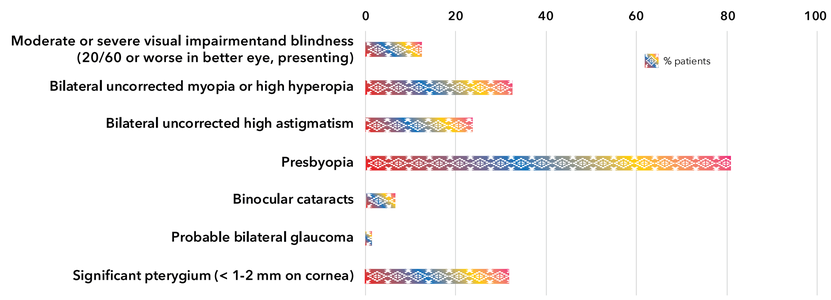
Glaucoma (% of patients)

- **2.8%** Monocular ocular hypertension → IOP ≥ 24mmHg OD or OS
- **0.8%** Binocular ocular hypertension → IOP ≥ 24mmHg OU
- **1.4%** Unilateral elevated C/D ratio → C/D ratio ≥ 0.7 OD or OS
- **1.0%** Bilateral elevated C/D ratio → C/D ratio ≥ 0.7 OU
- **0.1%** Probable binocular glaucoma → C/D ≥ 0.7 and IOP ≥ 24 mmHg OU

Pterygium

- **32%** of patients had a monocular pterygium (1-2 mm on cornea)
- **10.6%** of patients had binocular pterygium (1-2 mm on cornea)
- **only 24 patients (1%)** had a monocular pterygium covering the visual axis

Visual impriment and blindness in Canete, Peru, at-a-glance



DISCUSSION

- Our data give a glimpse of the prevalence of visual impairment and ocular disease in Cañete, Peru
- Prevalence estimates for blindness and visual impairment are higher than national levels
- Prevalence estimates for uncorrected refractive errors are significant, especially for presbyopia and high astigmatism
- Cataracts, glaucoma and pterygium are confirmed as prevalent conditions in this population
- Appropriate interventions need to be planned to tackle the burden of these sight-threatening diseases

Take home message

Prevalence estimates for blindness and visual impairment (12.7% visual impairment, 19.5% severe visual impairment) are higher than national levels

Prevalence estimates for uncorrected refractive errors are significant, especially for presbyopia (81%) and high astigmatism (24%)

Acknowledgements
- IRIS Mundial for their collaboration in collecting and accessing data
- P. Micheline Gloin for her assistance with graphics

Presented at the 2019 annual meeting of the AAO
ACADEMY 2019 ORLANDO