Seminário
Grupo de Probabilidades e Estatística

24 de fevereiro de 2021   15:00   Zoom meeting

Double-organ Bias in Vision Research: An Age-related Macular Degeneration (AMD) example

Rita Coimbra[1], PhD
Association for Innovation and Biomedical Research on Light and Image (AIBILI), Coimbra, Portugal

1: Joint work with **Cláudia Farinha, MD**, from AIBILI, Ophthalmology Department, Centro Hospitalar e Universitário de Coimbra (CHUC), Coimbra, Portugal, and Faculty of Medicine – University of Coimbra (FMUC), Coimbra, Portugal

Abstract

In ophtalmological clinical trials, data can be collected from either one or both eyes of a subject. Most of the statistical tests used assume that observations in a sample are independent, but measurements obtained from right and left eyes are usually correlated (double-organ bias).

Depending on the study hypothesis and clinical relevance, data can be selected from one eye or both eyes. We review the systematic selection process of just one eye, when subject is the unit analysis (one eye per individual) and the statistical methodologies to address the problem using eye as unit analysis (two eyes per individual). When data from both eyes are available, rejecting data from the fellow eye, reduces the potential power of the study, increases the number of subjects to be recruited and rejects valid data that will not be analysed. Even in high-impact-factor journals, statistical analysis are performed with only one, reducing the power of the study or with both eyes but without take into account the correlation between eyes. So this problematic should be clarified and addressed in ophthalmology.

Seminário
Grupo de Probabilidades e Estatística

24 de fevereiro de 2021   15:00   Zoom meeting

We overview the various methodologies used in clinical trials at AIBILI (Association for Innovation and Biomedical Research on Light and Image), a research technology organization dedicated to the development and clinical research of health technologies. We focus on the Coimbra Eye Study (CES), an epidemiologic population-based study on the prevalence and incidence of Age-related Macular Degeneration (AMD) in a Portuguese population (NCT01298674, NCT02748824).

We analyzed the retinal layers and choroidal thickness in a large set of eyes 346 eyes (233 patients) in early stages of AMD, in order to detect differences by stage suggestive of early neurodegeneration, even in the inner retina, suggesting neuronal retinal layer thicknesses as quantitative biomarkers of disease progression in early AMD. Estimates for each layer thickness were calculated with linear mixed-models and tested for pairwise differences between stages.

Link para aceder ao Meeting via Zoom:
https://videoconf-colibri.zoom.us/j/85604639823?pwd=ejVoeFozV3QvOHpuNm1BVTQzcTNSQT09

ID da reunião: 856 0463 9823

Senha da reunião: **522593**

FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

REPÚBLICA PORTUGUESA