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Application of Clustering Methods to Analyse Clinical Topographic Data from the Anterior Eye

The application of clustering and separability statistics on topographic data from the anterior eye assists in the classification of corneal disease or the identification of those at risk of angle-closure glaucoma. Imaging data from routinely available clinical instruments may be used and thus the method is transferable across existing imaging platforms.

Competitive advantage

- Uses the application of clustering, followed by separability testing, to generate 'isocontours' of anterior topographic clinical data from routinely available clinical instruments. Advantages include:
 - Identifying corneal changes and the risk for corneal disease progression
 - Identifying anterior chamber morphology changes to identify and phenotype different types of glaucoma
 - Instrument agnostic and includes advantages such as: being non-invasive, easy and quick to acquire, and readily interpretable
 - Quick and easy to implement using techniques that currently exist in clinical practice and so will be highly accessible to clinicians
- Is accurate; it detects features that are not obvious to the naked eye and therefore not subject to human biases, fatigue, inexperience, education etc
- Is cost effective as it saves time. There are fewer images for clinicians to assess - the technology produces one simple, composite image from multiple images and has the potential to automate comparisons in follow up visits

Impact

- Simplifying the detection of corneal ectatic disease in at-risk individuals
- Assisting in screening and predicting dev

More Information

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