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**International Globe and Adnexal
Trauma Epidemiology Study**

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The International Globe and Adnexal Trauma Epidemiology Study (IGATES) is a collaborative effort by the Asia Pacific Ophthalmic Trauma Society (APOTS), International Society of Ocular Trauma (ISOT), Chinese Ocular Trauma Society (COTS), and Ocular Trauma Society of India (OTSI)

Why IGATES?

Traumatic eye and facial injuries encompass a significant proportion of all patients presenting to emergency departments. Ocular trauma is associated with considerable morbidity and healthcare-associated costs. The ability to predict and anticipate outcomes in patients with ocular trauma is critical to developing eye injury prevention strategies and appropriate treatment plans, as well as to advise and counsel patients.

The Birmingham Eye Trauma Terminology System (BETTS) and Ocular Trauma Score (OTS) have been widely adopted internationally since they were published and remain the benchmark for classification of ocular trauma. Whilst the current OTS has significantly contributed in reducing the ambiguity about classification and assisted the prediction of outcomes for most open globe trauma, there remain some limitations and controversies.

This includes the exclusion of adnexal injuries from the score. Further examples include whether the significance accorded to presenting VA is justifiable, and whether RAPD is an absolute biomarker for the patient's final visual outcome. First developed in early nineties, it is not known if BETTS and OTS accurately reflect current state of art trauma practice and outcome. In clinical practice, the BETTS and OTS classifications can be difficult as not all data is collected. We aim to build on the valuable aspects of the existing BETTS and OTS. Using big data analytics, cloud computing and machine learning, we aim to propose robust model incorporating a wider range of relevant markers relating to the outcome.

Objectives

- 1) Identify the factors affecting the outcome of open globe and adnexal injury (ophthalmic trauma)
- 2) Develop a prognostic classification system for ophthalmic trauma
- 3) Conduct a large multicenter retrospective review of ophthalmic trauma utilizing the revised "Ophthalmic Trauma Score" (OTS-2)

IGATES-1 and IGATES-2

The IGATES study will have two distinct phases in the study of patients with globe and adnexal trauma. IGATES-1 is a retrospective cohort study and IGATES-2 a prospective study. IGATES-1 will commence in July 2018 with data collection undertaken over a 6-month period of patients presenting with ocular trauma between 2006-2015 at participating centers. Data analysis will be conducted in the following 6 months, with findings used to design the key elements for study and a clinical risk score for validation in the prospective study IGATES-2. IGATES-2 is anticipated to commence in June 2019 with data collection continuing for a 5 year period.

The primary outcome measures for BETTS were the final visual outcome and anatomical outcome. In IGATES, we will also study the incidence of ocular complications related to ocular trauma, the significance of eyelid and/or adnexal trauma, and extra-ocular complications such as intracranial injury. Potential risk factors for outcomes will also be assessed.

This study will provide extensive data relating to the factors affecting the outcome of open globe injury and repair. The study is also anticipated to provide the largest data set of outcomes from globe and adnexal trauma to date.



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