

**2018 ACMT Annual Scientific Meeting  
FIT MedTox Shark Tank Research Forum**

**Presentation 7**

**Investigators:** Stephen A Harding, MD; Rana Biary, MD; Robert S Hoffman, MD; Mark K Su, MD MPH

**Title: TIC: Telemedicine Investigation of Caustics**

**Background:** The landmark 1990 study by Previtera et al. describes 10 years of endoscopy (EGD) data in children with suspected caustic ingestions. In this study, the authors assessed the association of lesions to the cheeks, lips, and oropharynx (CLO) to the presence or absence of burns in the GI tract. They concluded that the absence of CLO burns does not exclude significant esophageal injury and that the presence of CLO burns had a high predictive value in predicting significant esophageal injury. Caustic ingestions continue to be a source of debate and misunderstanding among many clinicians, even after consultation with poison control centers. The concepts of telemedicine and teleconsultation have recently become more feasible, with remote patient evaluation and management increasingly used. The two concepts of “tele-toxicology” consultation and physical examination evaluation of caustic injuries could provide valuable information in the assessment of patients with caustic injuries.

**Aims:**

- To determine if remote photo/video physical exam findings can be used in lieu of bedside physical exam to risk stratify caustic ingestions in consultation with a clinical toxicologist.
- To evaluate how well physical findings described by consulting toxicologists correlate with EGD findings.

To develop a HIPAA-compliant mechanism for transmitting and collecting photos/videos for use in consultation.

**Methods:**

- Prospective, observational study
- Identify patients who present with suspected caustic ingestions
- Obtain photo/video evidence of patient’s face/oropharynx which are to be securely transmitted to the investigators
- Record whether EGD was performed or not
- If EGD was performed, have results transmitted to investigators
- Blinded toxicologists evaluate presence of CLO burns as determined by photo/video evidence
- Blinded toxicologists will also evaluate quality of the photo/video (poor, good, excellent)
- ED physical exam documentation and toxicologist evaluation of photo/video for CLO burns are then compared with severity of injury on EGD (grade I, IIa, IIb, III)

- Patients who presented with caustic injury but did not undergo endoscopy will be followed outpatient Interrater reliability will be assessed between the blinded toxicologist viewing the photo/video

**Major Limitations/Questions:**

- Finding a mechanism for transmitting sensitive photos/videos securely
- Finding enough caustic patients - how many hospitals can this feasibly encompass?
- Potential of loss to follow-up of patients who did not get endoscopy