

BACKGROUND: Advanced airway management is composed of a set of vital yet potentially difficult skills for the prehospital provider, with widely different clinical guidelines. In the military setting, there are few data available to inform guideline development. We reevaluated our advanced airway protocol in light of our registry data to determine if there were a preferred maximum number of endotracheal intubation (ETI) attempts; our success with cricothyroidotomy (CRIC) as a backup procedure; and whether there were cases where advanced airway interventions should possibly be avoided.

METHODS: This is a descriptive, registry-based study conducted using records of the Israel Defense Forces Trauma Registry at the research section of the Trauma and Combat Medicine Branch, Surgeon General's Headquarters. We included all casualties for whom ETI was the initial advanced airway maneuver, and the number of ETI attempts was known. Descriptive statistics were used.

RESULTS: Of 5,553 casualties in the Israel Defense Forces Trauma Registry, 406 (7.3%) met the inclusion criteria. Successful ETI was performed in 317 casualties (78%) after any number of ETI attempts; an additional 46 (11%) underwent CRIC, and 43 (11%) had advanced airway efforts discontinued. ETI was successful in 45%, 36%, and 31% of the first, second, and third attempts, respectively, with an average of 28% success over all subsequent attempts. CRIC was successful in 43 (93%) of 46 casualties in whom it was attempted. Of the 43 casualties in whom advanced airway efforts were discontinued, 29 (67%) survived to hospital discharge.

CONCLUSION: After the first ETI attempt, success with subsequent attempts tended to fall, with minimal improvement in overall ETI success seen after the third attempt. Because CRIC exhibited excellent success as a backup airway modality, we advocate controlling the airway with CRIC if ETI efforts have failed after two or three attempts. We recommend that providers reevaluate whether definitive airway control is truly necessary before each attempt to control the airway.