A multicenter analysis from the PeDI registry of two intubation methods in syndromic infants with difficult tracheal intubation.

Background:
- Multiple tracheal intubation attempts and patient weight <10kg are associated with higher rates of airway-related complications in children.1,2
- Fiberoptic intubation through a supraglottic airway (FOI-SGA) may be particularly useful in patients with upper airway obstructive anomalies.3
- The purpose of this study was to compare the efficacy of FOI-SGA with video laryngoscopy (VL) in children less than and greater than 10kg, as well as those with commonly encountered craniofacial anomalies (Pierre Robin and Goldenhar).

Methods:
- The Pediatric Difficult Intubation (PeDI) Registry contains data from 14 study sites detailing management of difficult pediatric airways, defined as the following: failure to visualize vocal cords on direct laryngoscopy (DL), impossible DL due to limited mouth opening, failed DL within six months, or suspected difficult DL based on history or physical exam.
- Per-attempt intubation success rates were calculated for FOI-SGA and VL techniques in patient subgroups defined as <10kg, ≥10kg, Pierre Robin Sequence, and Goldenhar Syndrome.

Results:
- 4222 intubation attempts in 1506 patients were analyzed.
- <10kg: FOI-SGA successful in 57.3% (67/117) of attempts, VL successful in 43.3% (185/427) of attempts (p=0.009).
- ≥10kg: FOI-SGA successful in 60.4% (81/134) of attempts, VL successful in 64.4% (381/592) of attempts (p=0.426) (Figure 1).
- Pierre Robin Sequence: FOI-SGA successful in 60.8% (76/125) of attempts, VL successful in 49.0% (237/484) of attempts (p=0.021).
- Goldenhar Syndrome: FOI-SGA successful in 55.9% (52/93) of attempts, VL successful in 56.1% (184/328) of attempts (p=1.0) (Figure 2).

Conclusions:
- In children weighing less than 10kg, and those with Pierre Robin Sequence, FOI-SGA is associated with higher tracheal intubation success rates than VL.
- In children weighing greater than 10kg and those with Goldenhar Syndrome, there is no difference in success rates between FOI-SGA and VL intubation techniques.

References: