Esophageal Atresia +/- Tracheoesophageal Fistula
Perioperative Management

Pre-operative

- **Initial**:

-IV access (PICC if able)
-Replogle placement (continuous low suction, flush 2ml Q2h to keep patent)
-Evaluate VACTERL anomalies

- **Respiratory**:

-Avoid PPV in EA/TEF with connection between trachea & stomach (avoid gastric distension)
-Prefer nasal cannula or intubation by most experienced provider
-If mechanical ventilation required attempt lowest possible MAP
-Consider ENT pre-op bedside vocal cord eval

- **Imaging**:

-CXR/AXR: estimate EA gap & distal bowel gas
–Prioritize early Cardiac ECHO (anomalies; side of aortic arch)
-If time allows, otherwise obtain post-op:
Renal US
Spine US

- **Measure EA gap**: Air +/- intra-op if long gap (vert body & cm)
- **Laboratory**:

-CBC, BMP, T&S, PRBC on hold for OR (1 unit, OR to return unused blood to bank)

Intra-operative

- Maintain normothermia
- Ensure PICC or CVL for TPN
- Rigid Bronchoscopy(unparalyzed)
  - -Evaluate double fistula, degree trachomalacia, significant cleft, vocal cords
  - –Flexible bronchoscopy available
- **Op Note**:
  - -Gross Type of EA/TEF
  - -Bronch & photos
  - -ETT size +/-air leak
  - -Gap length (vert body & cm)
- Avoid transanastomotic tube at conclusion of repair (surgeon discretion)[1]

Post-operative

- **Bedside handoff:** Neonatology, surgeon and anesthesiology review intra-op findings & airway management, secure ETT
- **Imaging**:
  - -Obtain CXR upon arrival to NICU (confirm ETT placement)
  - -Follow-up complete VACTERL work-up
  - -Esophagram POD#5-7[1] (coordinate surgeon & radiology)
- **Respiratory**:
  - -Wean ventilator support
  - -Confirm ETT securement method with anesthesia & NICU
  - -If ETT needs repositioning/manipulation please discuss with surgery +/- anesthesia
  - -Extubation timing based on team discussion (NICU & Surgery) with plan & criteria for re-intubation
- **Tubes**:
  - -Chest tube: Keep in place until contrast study without leak (water seal preferred when able)
  - -No ETT suctioning past ***cm (sign, measure of ETT at lip)
  - -If nasogastric tube: do not manipulate (surgeon will manage). Continuous low suction, flush 2ml Q2h to keep patent
  - -Sign at bedside “Do Not manipulate NG tube”
  - -If foley catheter: discontinue when patient hemodynamically stable, not requiring resuscitation with adequate UOP
- **FEN**:
  - –Maintain near zero fluid balance (limit unnecessary fluid)
  - -NPO & TPN for nutrition (if feeding tube in place, feeds per surgeon)
  - -Encourage oral stimulation & SLP evaluation
  - -Initiate PO feeds after negative esophagram (per surgeon)
  - -Discontinue IVF once tolerating adequate feeds
- **ID**:
  - -Prophylactic antibiotics (Ancef q8h or based on NICU) for 24 hours[1]
- **Medications**:
  - -Initiate antacid (1mg/kg/day for 1 year, PPI[2,3])
  - -Scheduled Tylenol IV/PR/tube (minimize narcotics)
  - -Judicious use of sedation/narcotics to allow early extubation if clinically appropriate
- **Consult**:
  - -EA team (Surgery, GI, ENT, Pulmonary, SLP, nutrition) +/- aerodigestive & surgery nurse coordinator, GI SW
- **Disposition**:
  - -Patient to remain in NICU for post-op management (pending discussion with primary surgeon)

Discharge Planning

- Continue antacid (PPI) at discharge for 1 year[2,3]
- Social worker engaged
- Establish SLP plan: feeding and what to expect for solid foods
- Outpatient follow-up with operative surgeon (1-6 weeks)
- Outpatient follow-up with EA team at 3, 6, 9, 12 months, q6mo for 2nd year, then annually (to be scheduled at discharge) e.g., Surgery, GI, Nutrition, SLP, if airway pathology ENT & pulmonary.

Activate Epic MyChart

- Provide family with educational packet
  - -List multi-disciplinary providers consulted while inpatient & follow-up
  - -Education regarding living with EA including signs/symptoms to monitor
  - -Short & long-term follow-up visits
  - -Surveillance recommendations
  - -Parent/patient support groups

1) Bence CM, et al. Clinical outcomes following implementation of a management bundle for esophageal atresia with distal tracheoesophageal fistula. Journal of Pediatric Surgery. 2021;56: 47-54. 2) Krishnan U, et al. ESPGHAN-NASPGHAN Guidelines for the evaluation and treatment of gastrointestinal and nutritional complications in children with esophageal atresia-tracheoesophageal fistula. Journal of Pediatric Gastroenterology & Nutrition. 2016;63(5):550-570. 3) Dingemann C, et al. ERNICA consensus conference on the management of patients with esophageal atresia and tracheoesophageal fistula: follow-up and framework Created by J. Leslie Knod, MD, FAAP in conjunction with CT Children's multi-disciplinary EA collaborative. Updated: 6/7/2023