Near Death Asthma: Forced to Act/Crash Airway

Scene Assessment →
- PPE
- Scene Safety
- Mechanism of injury or illness
- Number of patients
- Need for additional resources
- Consider C-Spine precautions

LOC → Altered: Indicator for near death asthma

Delegate basic vitals →
- RR
- SPO2
- ETCO2
- BP
- HR/ 5 lead

Airway →
- Suction airway
- Head tilt
- OPA/NPA
- Elevated to 30

Breathing →
- BVM
- Try 2 person BVM
- Hi flow nasal cannula
- Switch back to one person instruct to rate of 10

Still inadequate? → Consider possible causes → • Mask Seal → • Upper airway obscstruction → • Severe bronchospasm

Severe bronchospasm identified

Call for assistance

Confirm history of asthma

Manual pressure on chest

Bronchodilators →
- Quick contraindications
- Recruit assistance to adminsiter

→ Ventolin
- Adult: 100mcg x 30 MDI
- Contra: Hypersensitivity, Tachydysrhythmias

→ Atrovent
- Adult: 20mcg x 15 q 30 mcg MDI
- Contra: Hypersensitvity

IM Epi → • Quick contraindications → Epi (1mg/ml)
- Adult: 0.3mg IM q 20 x 3
- Contra: None

→ • Set timer for 20 mins

Start IV

Open Fluid Blus →
- 500cc
- Set timer for 5 mins

Reassess lung sounds → Contiuned wheezes or silent

Consider extraglottic →
- Likely unsuccessful in NDA due to high airway pressure

Recognize FORCED TO ACT/ Crash AIRWAY →
- Current or rapidly impending airway obstruction or **failure of oxygenation** (Inadequate MV, SPO2 <85% with ALOC) despite interventions
- ** Key for near death asthma is current or impending respiratory failure (Cahill, 2024)

Confirm intubation is not delaying approprirate treatments

Ventilate and Preoxygenate →
- Connect continuous waveform capnography to BVM
- Apply nasal cannula at 15 LPM for apneic oxygenation

Can you proceed without sedation/paralysis?

Yes → FORCED TO ACT

No → CRASH AIRWAY →
- Recognize in near death asmtha ketamine is a bronchodilator and should be used in induction when possible (Cahill, 2024)

Confirm no contraindications to airway medications → Ketamine
- Hypersensitivity
- Relative: Conditions where a significant elevation of BP is hazardous (uncontrolled HTN, aneurysm, acute heart failure, angina, recent MI)

AND → Succinocholine
- Hypersensitivity
- Known of suspected Hyper K (acute or chronic renal failure, glomerular nephritis, lupus nephritis)
- Familiy Hx of malignant hyperthermia or plasma pseuchocholinesterase deficiency
- Myopthathies associated with elevated CK

Administer induction agent → Ketamine
- Adult: 1.5mg/kg IV over 1-2 min

Administer paralytic → Succinylcholine
- Adult: 1.5mg/kg max 150mg V

Prep equipment →
- Minimum kit required for one attempt
- Suction
- Stethoscope
- Tube
- Laryngoscope/ Blade
- Bougie/ Stylet
- Syringe
- Tube holder
- Eyes on surgical airway

→ • Consider prepping push pressor here

Wait for fasiculations and apnea

Suction then intubate → • Unsuccessful → • Surgical airway

Post advanced airway management →
- Confirm depth
- Inflate cuff
- Confirm placement
- Assign parameters
- Secure
- Elevate head

Reassess vitals

Prepare to address post intubation hypotension →
- Consider intrathoracic pressure (slow vent rate or < PEEP)

→ Epinephrine Push
- Adult: 100mcg in 10cc flush (10mcg/ml)
- 10mcg over one min (max 50mcg)

Prepare to address post-intubation sedation → Ketamine
- Adult: 1mg/kg (50mg/ml)
- Contra: Hypersensitivity, Relative: Conditions where a significant elevation of BP is hazardous (uncontrolled HTN, aneurysm, acute heart failure, angina, recent MI)

Prepare to address issues with DOPES → DOPES:
- D: Dislodgement (Esophageal = EDD & CO2, Maintstem = auscultation & depth at teeth)
- O: Obstruction (Poor compliance or secretions = saline and deep suction, poor sedation and bite block = increase sedation)
- P: Pneumothorax (Hypotension, JVD & decreased breath sounds = needle decompression assured not R or L mainstem)
- E: Equipment failure: O2 resevoir bag full, BVM able to make positive pressure with no leaks, ETT tube inflated
- S: Stacking (Auto Peep = slow ventilations)

Administer Mag Sulfate → Magnesium Sulfate
- Adult: 2g in 100cc over 10 mins (100gtts)
- Contra: Heart Block, Renal Failure

Call OLMC for Epi Infusion → Epi Infsusion
- 4mg in 250 (conc 16mcg/ml)
- 0.1mcg/kg/min
- Contra: None

→ • Utilize when MDI bronchodilators are still unable to enter lungs (Cahill, 2024)

Continue treatment plan → Ventolin
- Adult: 100mcg x 30 MDI
- Contra: Hypersensitivity, Tachydysrhythmias

→ Atrovent
- Adult: 20mcg x 15 q 30 mcg MDI
- Contra: Hypersensitvity

→ IV
- 500cc bolus
- 250cc drip

Reassess

Breathing Improved?

No → Rapid Transport → Continue aggressive Tx → Consider differentials

Complete Head to toe → Quick Medical Hx → Complete outstanding vitals → Consider differentials → Further stabilize and transport

epINEPHrine

Concentration: 4 mg (of a 1 mg/mL concentration) in 250 mL of D5W or normal saline = 16 mcg/mL

Dose (mcg/kg/min)	40 kg	45 kg	50 kg	55 kg	60 kg	65 kg	70 kg	75 kg	80 kg	85 kg	90 kg	100 kg	110 kg	120 kg
0.1	15	16.9	18.8	20.6	23	24.4	26.3	28.1	30	31.9	33.8	37.5	41.3	45
0.15	22.5	25.3	28.1	30.9	34	36.6	39.4	42.2	45	47.8	50.6	56.3	61.9	67.5
0.2	30	33.8	37.5	41.3	45	48.8	52.5	56.3	60	63.8	67.5	75	82.5	90
0.25	37.5	42.2	46.9	51.6	56	60.9	65.6	70.3	75	79.7	84.4	93.8	103.1	112.5
0.3	45	50.6	56.3	61.9	68	73.1	78.8	84.4	90	95.6	101.3	112.5	123.8	135
0.35	52.5	59.1	65.6	72.2	79	85.3	91.9	98.4	105	111.6	118.1	131.3	144.4	157.5
0.4	60	67.5	75	82.5	90	97.5	105	112.5	120	127.5	135	150	165	180
0.45	67.5	75.9	84.4	92.8	101	109.7	118.1	126.6	135	143.4	151.9	168.8	185.6	202.5
0.5	75	84.4	93.8	103.1	113	121.9	131.3	140.6	150	159.4	168.8	187.5	206.3	225
0.55	82.5	92.8	103.1	113.4	124	134.1	144.4	154.7	165	175.3	185.6	206.3	226.9	247.5
0.6	90	101.3	112.5	123.8	135	146.3	157.5	168.8	180	191.3	202.5	225	247.5	270
0.65	97.5	109.7	121.9	134.1	146	158.4	170.6	182.8	195	207.2	219.4	243.8	268.1	292.5
0.7	105	118.1	131.3	144.4	158	170.6	183.8	196.9	210	223.1	236.3	262.5	288.8	315
0.75	112.5	126.6	140.6	154.7	169	182.8	196.9	210.9	225	239.1	253.1	281.3	309.4	337.5
0.8	120	135	150	165	180	195	210	225	240	255	270	300	330	360
0.85	127.5	143.4	159.4	175.3	191	207.2	223.1	239.1	255	270.9	286.9	318.8	350.6	382.5
0.9	135	151.9	168.8	185.6	203	219.4	236.3	253.1	270	286.9	303.8	337.5	371.3	405
0.95	142.5	160.3	178.1	195.9	214	231.6	249.4	267.2	285	302.8	320.6	356.3	391.9	427.5
1	150	168.8	187.5	206.3	225	243.8	262.5	281.3	300	300	337.5	375	412.5	450

Weight (kg); Rate (mL/hr)

(AHS protocols, 2024)

References

1) AHS protocols. (2024, August 8). https://www.ahsems.com/public/protocols/templates/desktop/#home
2) Cahill, Katherine N. (2024, November 5). *Acute exacerbations of asthma in adults: Emergency department and inpatient manage* UpToDate. https://www.uptodate.com/contents/acute-exacerbations-of-asthma-in-adults-emergency-department-and-inpatient-man
3) MacLeod , M. H. (2024b). Forced to Act - Checklist .