WE SEE WHAT WE ARE PREPARED TO SEE

PRESENTATION BY,
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APOLLO CHILDREN'S HOSPITALS.
GUIDE:
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Apollo Children's HOSPITALS
Touching little lives.

PRESENTATION

- 3 year old girl child presented to the Emergency Room with history of

Cough and cold for 10 days

Fever for 4 days

Breathlessness since the previous night

INITIAL IMPRESSION

- APPEARANCE – Lethargic, brought on a stretcher
- BREATHING – Respiratory distress +
- CIRCULATION – No pallor/ cyanosis/ mottling visible.

PRIMARY ASSESSMENT

Appearance

Lethargic, Tone & posture abnormal, DEM +, **Pupils 3mm BPERL**

Breathing

Airway clear, **RR 60/min,** Stridor/grunts -nil

WOB- **subcostal/Intercostal retractions +,** BAE +; **Creps/wheeze +**, SpO2 – 88% in room air

Circulation

HR 180/min, peripheries cool, pulses +++/+, CRT >3 sec, Liver span 7.5 cm, BP 90/48 mm Hg, CBG 112mg/dl

Disability CBG – 112 mg/dl, irritable.

Exposure Fever +, No rashes/ erythema over extremities. No external injuries noted.

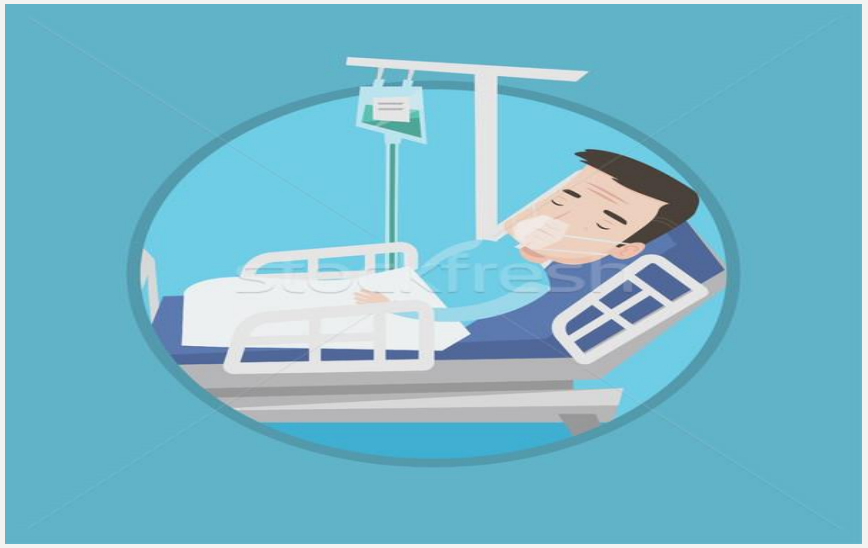
HISTORY

- No known allergies so far
- Medications paracetamol; oral antibiotic
- No significant past history
- Last meal ~12 hrs
- Events : Child was found on the bed with significant breathing difficulty hence brought to the hospital.

SUMMARY

RESPIRATORY DISTRESS → O2 Via NRM started

COMPENSATED SHOCK → Fluid bolus
Started on IV antibiotic

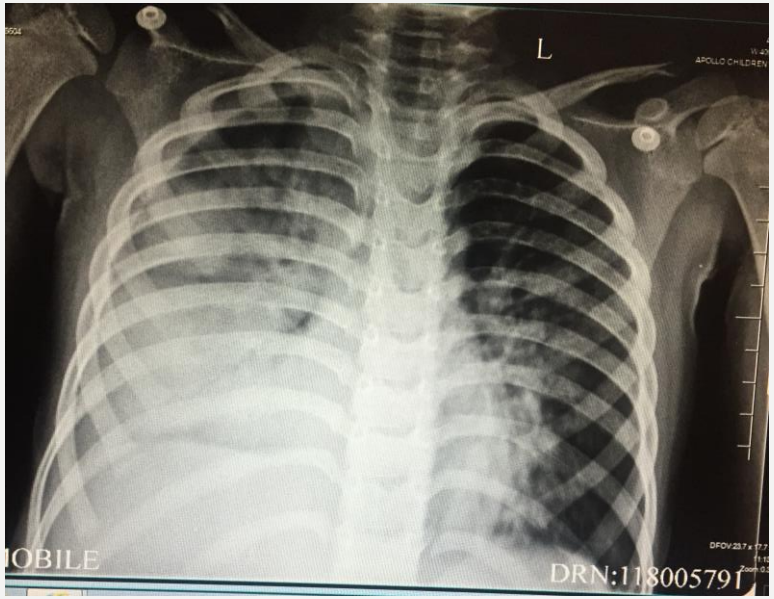


INITIAL WORK UP

INITIAL ABG

pH	7.004
PO2	37
PCO2	58
Base excess	- 17
Lactate	6
HCO3	14

CHEST XRAY

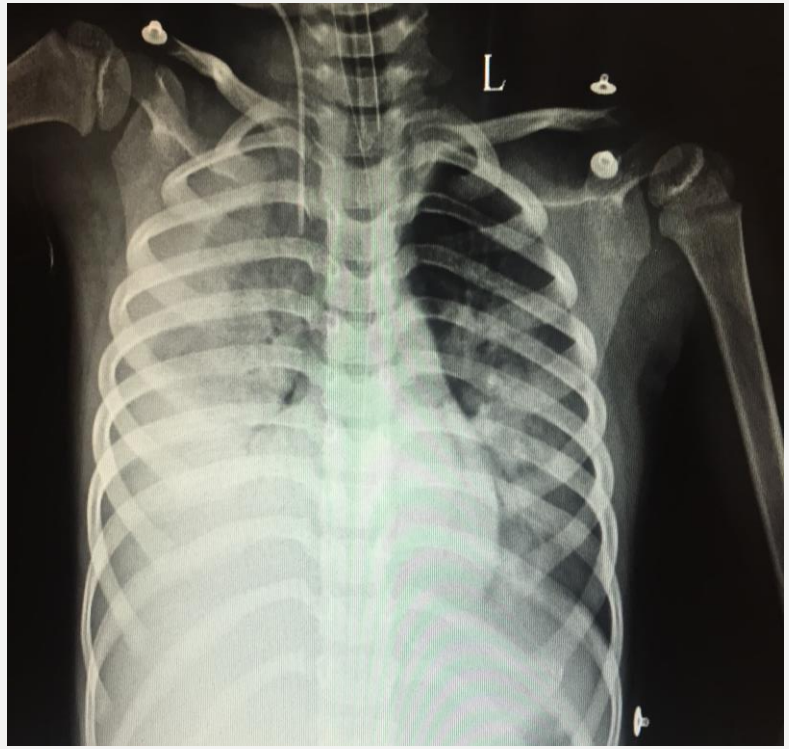


As she required intensive management, she was shifted to PICU.

IN PICU

INTUBATION

pH	7.178	7.18
PO2	57	47.2
PCO2	38	46.5
BE	-13	-10.6
HCO3	13.8	17.2
Lactate	9	11.7



REFRACTORY SHOCK, ACIDOSIS, HYPOXEMIA……

What next?

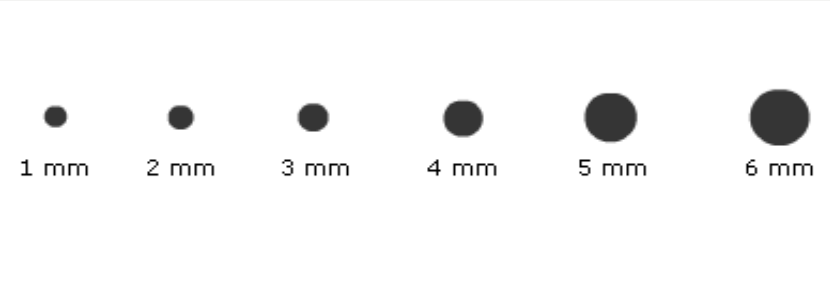
- ECMO team was informed
- Discussions with parents regarding ECMO started by a member of the team

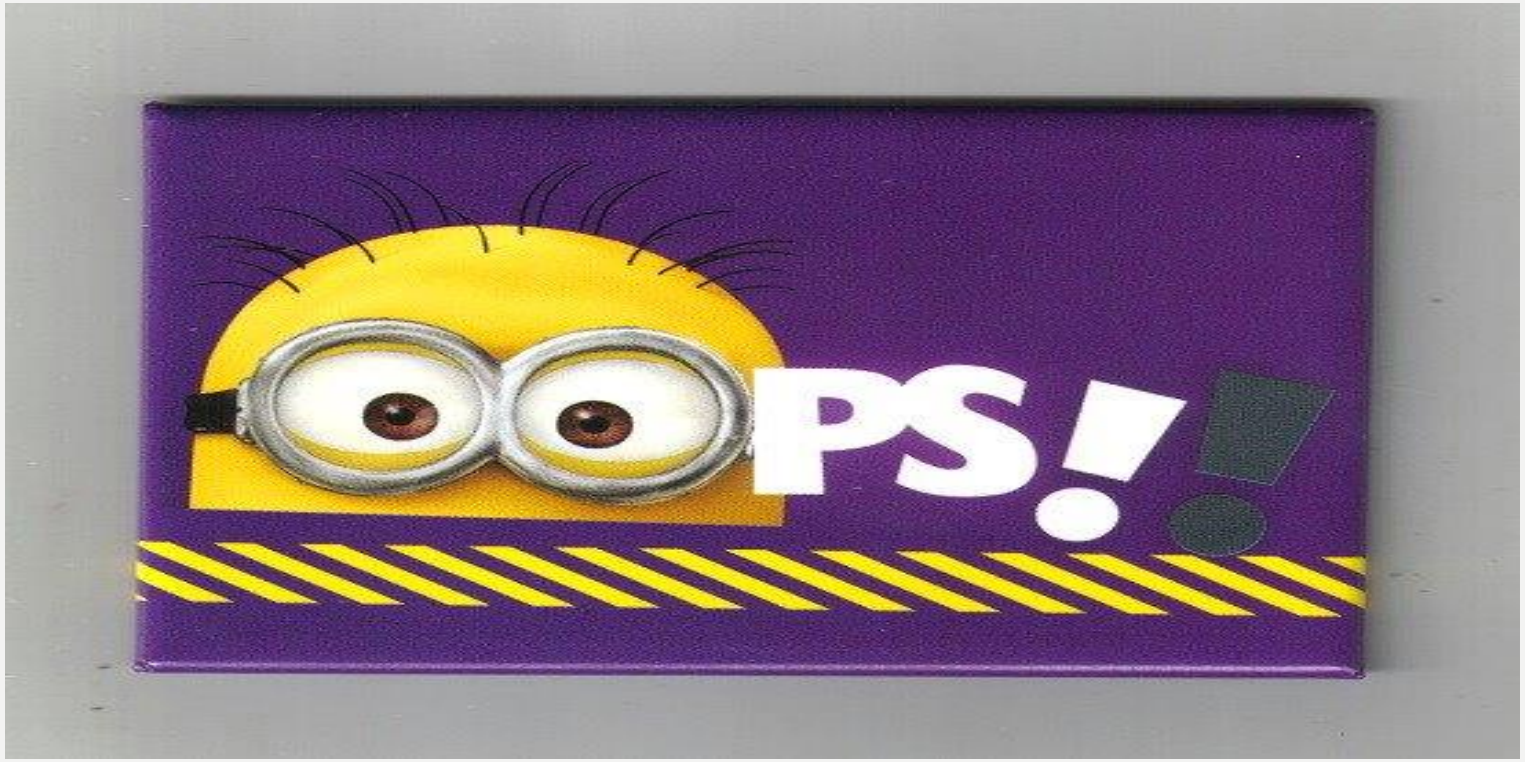
TURNING POINT

- Nurse calls saying……

RIGHT EYE	LEFT EYE
8 mm	3mm

Unequal pupils!!!!!!!!!!!!!!!!!!




PS!

NEUROIMAGING

- CT brain Plain – Normal, EEG – diffuse slowing, no seizure activity.
- Team Still in dilemma whether to go for ECMO as we didn't have an explanation for the unequal pupils
- ECMO TEAM consensus: MRI with Angiogram
- Risk of transport was extremely high ; Parents consented for transport to MRI despite explaining risk of Death enroute

MRI BRAIN WITH ANGIOGRAPHY

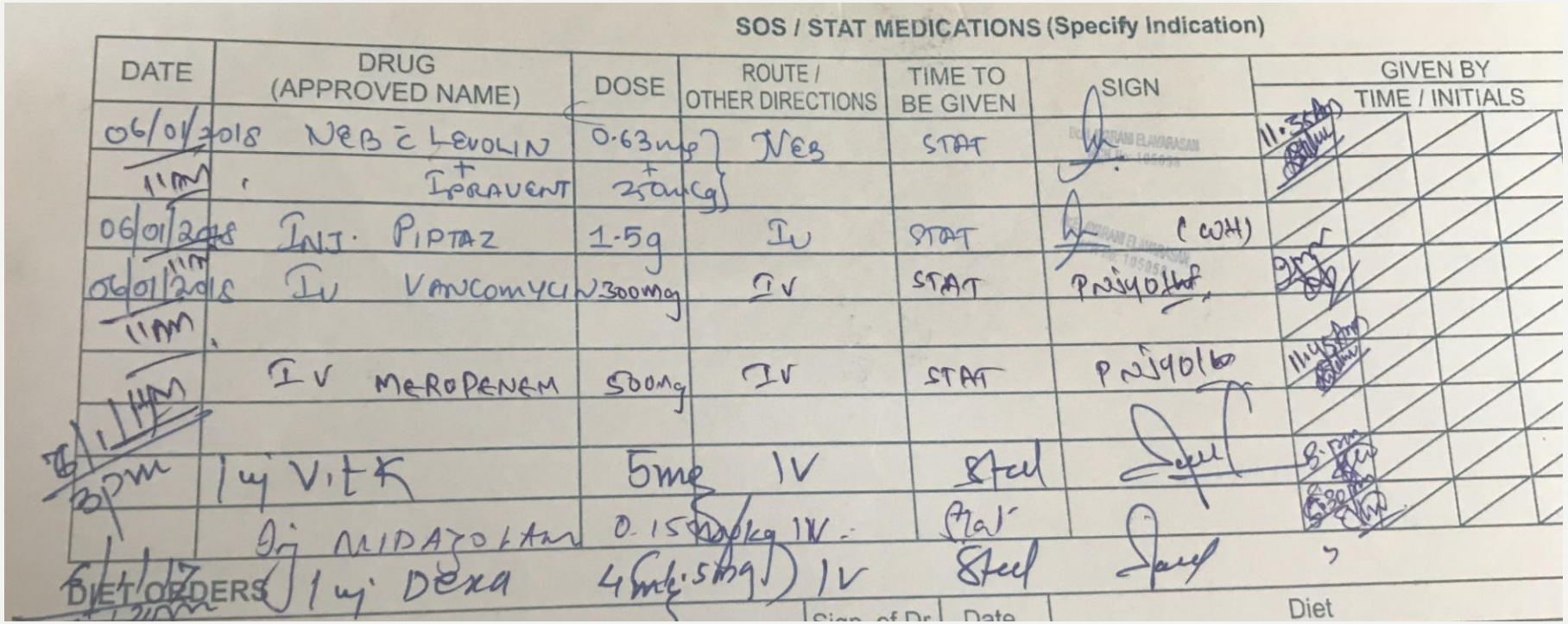
Normal!!!!!!!!!!

- ECMO initiated finally though we didn't have an answer for anisocoria

CULPRIT WAS……??

- In retrospect, as we analysed the medications given since the admission, we discovered the child was nebulised with

IPRATROPIUM BROMIDE!!!!!



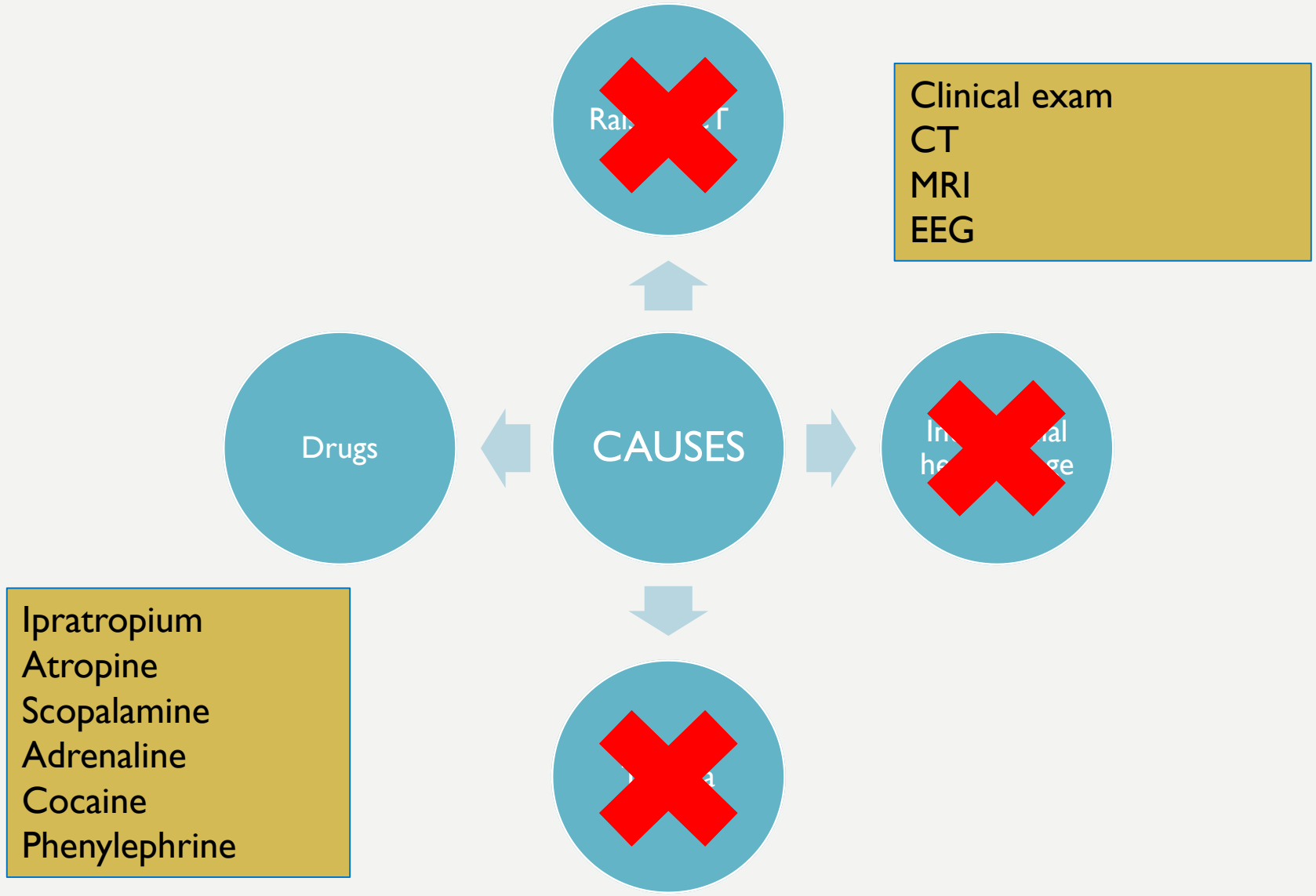
SOS / STAT MEDICATIONS (Specify Indication)

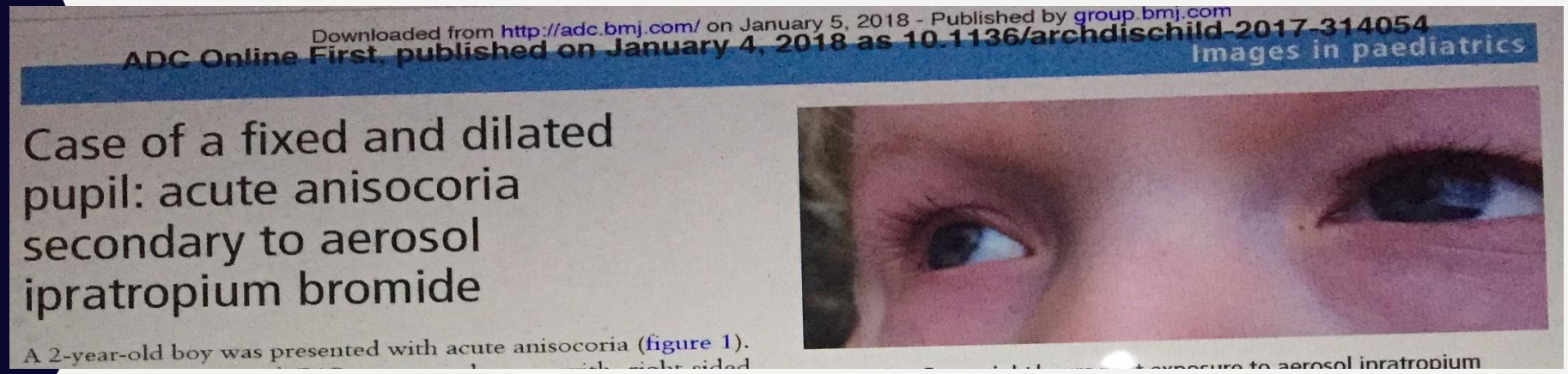
DATE	DRUG (APPROVED NAME)	DOSE	ROUTE / OTHER DIRECTIONS	TIME TO BE GIVEN	SIGN	GIVEN BY TIME / INITIALS
06/01/2018 11AM	NEB C LEVOLIN + IPRAVENT	0.63mg + 250mcg	NEB	STAT		11.35AM
06/01/2018 11AM	INJ. PIPTAZ	1.5g	IV	STAT	(WH)	
06/01/2018 11AM	IV VANCOMYCIN	300mg	IV	STAT	PNJ40Hf	
11AM	IV MEROPENEM	500mg	IV	STAT	PNJ40Hf	11.45AM
6/1/18 2PM	1 inj Vit K	5mg	IV	Stat		8.PM
	1 inj MIDAZOLAM	0.15mg/kg	IV	Stat		
6/1/18	1 inj DEXA	4mg(1.5mg)	IV	Stat		

DIET ORDERS

Sign of Dr	Date	Diet

ANISOCORIA IN A CRITICALLY ILL CHILD





ADC Online First, published on January 4, 2018 as 10.1136/archdischild-2017-314054

Case of a fixed and dilated pupil: acute anisocoria secondary to aerosol ipratropium bromide

A 2-year-old boy was presented with acute anisocoria (figure 1).

exposure to aerosol ipratropium

Case of a fixed and dilated pupil: acute anisocoria secondary to aerosol ipratropium bromide

Laura Royce, Chris Schulz, Nick Brown

http://dx.doi.org/10.1136/archdischild-2017-314054

Ipratropium bromide is a quaternary amine derivative of atropine and a direct antagonist at muscarinic cholinergic receptors and it was not considered a cause of anisocoria until 1986 when Samaniego and Newman described the first case.[3] Contamination of the eye from nebulized ipratropium bromide leads to asymmetric pupillary dilation by paralyzing the parasympathetic nerve endings. The anisocoria, which is usually resolves within 48 hours of removal of the agent, sometimes may last up to three weeks after the acrosolised bronchodilator is stopped. Other manifestations of ipratropium exposure include bilateral mydriasis, cycloplegia, blurred vision, dry eyes, and in rare cases, acute glaucoma. Failure of the dilated pupil to constrict after instillation of 1% of pilocarpine hydrochloride confirms the diagnosis. Ipratropium bromide should be considered in the differential diagnosis of patients with anisocoria when no structural explanation can be found with a brain CT.[4,5]

Do we really need to pamic in all acute vision loss in ICU? Acute angle closure glaucoma

Ali Akal,Ahmet Kucuk, Funda Yalcin, Saban Yalcin

Indian Journal of Anaesthesia 2010 Jul-Aug; 54 (4): 365-366.

PALS

Ipratropium Bromide

Classification: Anticholinergic, bronchodilator
Indications: Asthma
Available Forms:

- Nebulized solution: 0.02% (500 µg/2.5 mL)
- MDI: 18 µg/puff

Dose and Administration:

Asthma	
Nebulizer	250 to 500 µg (inhaled) q 20 minutes × 3 doses

Special Considerations:

- Ipratropium is not absorbed into the bloodstream; its cardiovascular side effects are minimal.
- Inhaled ipratropium may cause pupillary dilation due to inadvertent deposition of nebulized solution in the eyes.

IPTRAPIUM BROMIDE AND ANISOCORIA

- An anticholinergic
- Nebulisation with Ipratropium bromide to treat the distress was given at ER
- Inhalational ipratropium causes mydriasis:
  - accidental spillage of ipratropium aerosol or droplets into the eye from a poor-fitting mask.
  - or broken nebulizer circuit.
  - Or accidental contact of the nebulizer solution or fumes with the eye.

TAKE HOME MESSAGE

- When anisocoria is encountered in a critical care setting, ruling out neurological emergencies is the first priority.

However, trivial causes like pharmacologic agents should not be forgotten.

- Communication and Documentation
- Meticulous repeated clinical examination

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THANK YOU!

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