

# EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO) FOR NEAR-FATAL ASTHMA REFRACTORY TO CONVENTIONAL VENTILATION

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## ***NEAR FATAL ASTHMA***

According to **SIGN** guidelines:

Raised PaCO<sub>2</sub> and/or requiring  
Mechanical Ventilation with  
raised inflation pressures.



## Patient Preview

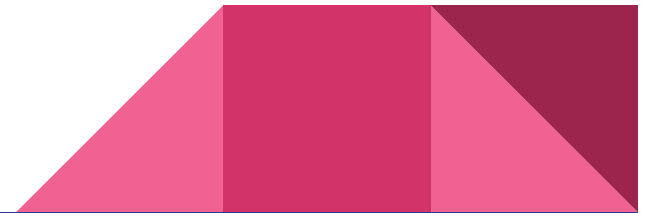
A young 19 years old woman admitted with near fatal asthma with 64% SpO<sub>2</sub> in room air at ER.

Her condition was deteriorated with all possible conventional medical therapy.

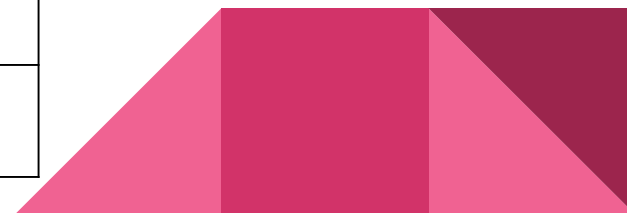
Invasive mechanical ventilation was pursued but patient gradually became hemodynamically unstable with persistent severe respiratory acidosis.

Even with high inflation pressures, it could not be corrected.

Moreover, she developed severe barotrauma with subcutaneous emphysema and pneumomediastinum.



	At Emergency Room	After initial treatment	On mechanical ventilator	After maximal therapy
Oxygen demand	Room air	15 litre/min Oxygen	100%	100%
PH	<b>7.23</b>	<b>7.21</b>	<b>7.14</b>	<b>7.00</b>
PCO2	68	75	61	115
PO2	50	120	91	87
HCO3	28	22	20	34
Lactate	3.0	5.0	7.0	14



**Initial CXR (Figure-1)**



**HRCT chest showing pneumo-mediastinum & surgical emphysema**



# ECMO (Extra Corporeal Membrane Oxygenation)

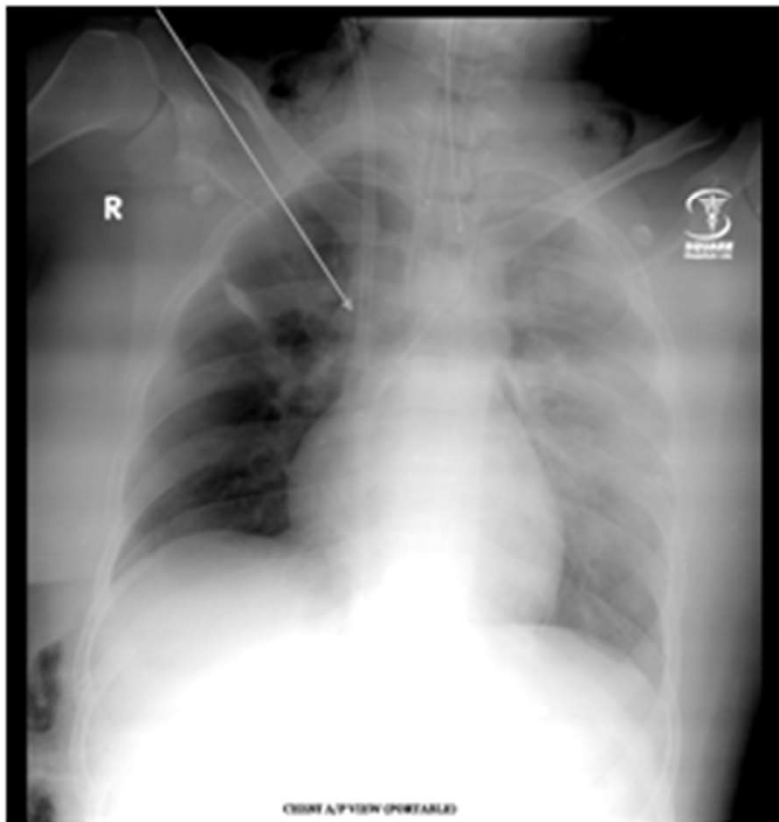
Even though there is no clinical trial available, but based on many available case series of successful use of ECMO in Near Fatal Bronchial Asthma, we opted for ECMO in this patient.

Veno-venous ECMO was initiated as a rescue therapy through right femoral to right internal jugular vein with heparin infusion.

12 hours after ECMO	
O <sub>2</sub> demand	21%
PH	<b>7.30</b>
PCO <sub>2</sub>	49
PO <sub>2</sub>	84
HCO <sub>3</sub>	24
Lactate	2.0



Jugular ECMO catheter in situ



Patient connected with ECMO support



## OUTCOME

As the patient showed signs of improvement by correction of acidosis and reduction of vasopressor support, she was weaned off of ECMO at day 4.

She was liberated from ventilator through Tracheostomy at day 8.

After a total of 16 days of hospital stay, the patient was then discharged home.

She was stable when she came for follow up after 1 month.





This was, to the extent of our knowledge, the **first reported case of successful use of ECMO in a near fatal asthma patient in Bangladesh.**



A part of Square Hospital's ECMO team with the patient after recovery.

Our case reiterates the fact that **early treatment with ECMO in Near Fatal Asthma**, refractory to mechanical ventilation, is associated with **excellent outcome without any complication.**

Hopefully, this would bring a new dimension in managing near fatal asthma patient in our country.





Thank you for your  
sincere attention.!