

Scenario 7: Neonatal Arrhythmia (SVT) in Heart Failure

Set Up:

Mannequin/Confederate	Moulage	Equipment available	Drugs available
SimNewbi /with simBaby monitor	Manikin grunting	Resuscitaire/Overhead warmer	Volume (NS)
Parent	SVT rhythm after monitor turned on	Self inflating bag / neopuff	AB:gentamicin/pen
		Airway trolley	adenosine
		Circulation trolley (incl IO + UVC)	10% Dextrose
		Glucometer	Resus drugs
		iSTAT/ABG machine	Inotropes
		Baby Pac ventilator	Intubation drugs
		Ice packs for treatment	
		Debrillator + pads	

Monitor: Basic ICU= add ECG if leads are placed

Paperwork Required:

Observation Chart	✓
Drug Chart	✓
Arrest chart	✓
Blood gas – arterial	
- venous	✓
- capillary	
Blood results - glucose	✓
CXR	✓
ECG (PRE AND POST TREATMENT)	✓

- Learning Objectives:**
- (1) Medical** Clinical decision making in the setting of neonatal arrhythmia and heart failure, with recognition for need of airway support
 - (2) CRM**
 - Leadership
 - Delegation of roles
 - Closed loop communication

Synopsis of Scenario

5 day old female neonate (born by emergency LUCS for fetal distress) is found on the post natal ward with a weight loss of 300gm and poor feeding for 2 days, and now in SVT with signs of heart failure. Expect to recognise SVT and heart failure in the neonate, and consider clinical decision pathway in regards to intubation and on-going medical management

Patient Demographics

Patient Name:	Trudy Symons	DOB/Age:	5 days
Medical Record#:		Weight:	3.2 kgs (BW 3.5kg)
Allergies:	nil	Female	
Relevant History	Born by elective Caesarian section, no maternal issues		

Introductory information given to team

5 day old female baby (wt 3.2kg) found on the post -natal ward by midwife, for a discharge check

- 300gm below birth weight
- feeding poorly last 2 days
- breathing fast

Method of bringing participants into the room

- Mother lying in the bed with baby in cot next to her

- Midwife measures obs and is concerned- goes to ask for a another nurse’s opinion(brings someone into the room)
- Midwife suggests medical review (brings junior dr in from outside)
- Should call for help as baby deteriorates- another 2 nurses and senior dr are asked to come in to help

ISBAR HANDOVER

I Trudy Symons, 5 day old female neonate
S not feeding well for past couple of days, now breathing fast
B Born by elective caesarian section- no other problems
A tachcardic and tachypneic, poorly perfused
R Needs urgent review

Initial Observations:

	↑, N, ↓, absent	Description
Appearance (cue)	Pale, mottled,	cold periph, CR 5 sec
HR	↑ (240)	SVT on monitor (after the team ask for ECG leads)
RR	↑ (75)	Normal breathing
Temp – peripheral	36.0	After asking for it
Saturation	90%	After team place the Saturation probe on the baby
Non- invasive BP – upper limb - lower limb	42/32	After team take a Blood pressure
Pupils	N	

Ideal Management:	Management:
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<p>Examination:</p> <ul style="list-style-type: none"> - Perfusion <input type="checkbox"/> - Fontanelle <input type="checkbox"/> - Respiratory <input type="checkbox"/> - Cardiac <input type="checkbox"/> - pulses (upper vs lower) <input type="checkbox"/> - liver (enlarged) <input type="checkbox"/> - BSL <input type="checkbox"/> 	<ul style="list-style-type: none"> - oxygen <input type="checkbox"/> - Monitoring-ECG & saturation <input type="checkbox"/> - Recognises SVT after ECG monitor on <input type="checkbox"/> - Recognises heart failure <input type="checkbox"/> - IV access-fails IV, needs to try IO <input type="checkbox"/> - Bloods & gas (comment on acidosis) <input type="checkbox"/> - Volume <input type="checkbox"/> - AB’s <input type="checkbox"/> - Ice, then adenosine(does not revert with increasing doses)until 3 doses given <input type="checkbox"/> - discuss different management and whether or not to shock <input type="checkbox"/>
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Progression Good:

<p>CUES:</p> <ul style="list-style-type: none"> - ↑RR (80), then - enlarged liver and tachypnea: heart failure - metabolic acidosis, lactate high on blood gas 	<p>Ideal Management:</p> <ul style="list-style-type: none"> - Consider respiratory support <input type="checkbox"/> - Consider inotropes <input type="checkbox"/> - Discuss with NICU or PICU <input type="checkbox"/> - Discusses with family <input type="checkbox"/>
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Progression Poor:

<p>CUES:</p> <p>Health worker comments on</p>	<ul style="list-style-type: none"> - worsening perfusion and decreasing RR (25), as condition worsens, ↓BP (40/28) - asks if the rhythm is normal
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- asks if they should do a blood gas
- suggests giving volume
- feeble cry

Resp: ↑ effort (seesaw), but RR ↓,

Bag mask support
Consider Intubate & Ventilate
Management as above
Consider inotropic support
Discuss with Neonatal Unit

Ideal Management:

CVS: notify perfusion worsening, not picking up oxygen saturation

Scenario finishes after 15 minutes, or after IV access, treatment with ice, adenosine, intubation, and discussion with Neonatal unit and family occurs.

Resources:

NETS Neonatal Handbook