SIMulatED

Royal Darwin Hospital Emergency Department

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# Scenario Run Sheet: irukandji syndrome

## Scenario Overview

**Estimated Scenario Run Time:**  15-20 mins

**Estimated Guided Reflection Time:** 20-30 mins

**Target Group:** ED Registrars and Nurses

**Brief Summary:** 15 yo male presents with sudden collapse, generalised pain and sweating from Irukandji syndrome. Requires aggressive antihypertensive therapy

## Learning Objectives

**General**

Resus team communication

**Scenario Specific**

Structured approach to DDX of severe dyspnoea and abdominal pain in beachside setting with particular consideration of pain and HT management in irukandji syndrome

## Equipment Checklist

**Equipment**

I sim, NIV machine

Adult Resus trolley

**Medications and Fluids**

Giving set, Normal saline, infusion pumps x2, **Vinegar**, combines

Fentanyl, morphine, magnesium, chlorpromazine, promethazine, GTN IV, labetalol(sat-pharm/OT), hydralazine (ED)

**Documents and Forms**

ED Nursing chart

**Diagnostics Available**

VBG – resp alkalosis

CXR – upper lobe diversion/interstitial oedema

ECG: Sinus tachycardia

## Scenario Preparation/Later Parameters

**Initial Later**

GCS **13 restless, vomiting** RR 26 P 160 BP 230/120 GCS **14** RR 20 HR 110

Sats 93% RA T 37.8 BSL gas SaO2 99% O2 BP 140/95 T 37.6

**Mannequin Features**

Live simulated male patient

Estimated weight 65kg

## Participants

**Staff Actors**

ED Registrars x3 Cousin. Aunt. Radiographer

Nurses x3ED ED Consultant available by phone

Oncology reg referral by phone

**Instructor Roles**

- Provide the team with clinical signs, bedside diagnostics, CXR

## Candidate Instructions/Triage Information

It is 0600h. A 15yo man is being BIBA in 5 minutes with severe back and abdominal pain while fishing at the Rapid Creek mouth. O/E: Sweaty, HR 140, BP 160/90, RR 32, T 37.8, SaO2 98RA. Given morphine 5mg IV. Cousin denies drug use or trauma. Aunt en route in own car

## Patient Instructions

Agitated, confused, c/o waves of severe pain head, back, chest, abdomen, limbs

**Medical History:** Fit, no PH, meds, alcohol/drug use.

**Social**: Visiting cousin for holidays, lives Adelaide with parents

**HPC:** (Cousin) Well lately. Went fishing at rapid creek mouth 0300h. Been there about 2 hours. Fishing from beach when c/o back and leg pain, collapsed on beach, heaps sweaty and acting confused and panicky. No A/Drugs tonight but had a couple of smokes. Never had Mother before (one can each). No trauma. If asked: had been in water up to waist to catch live bait with throw net, maybe 30minutes. “Just standing there on the beach fishing” when it started.

## Proposed Scenario Progression

* Focussed history and examination and bedside investigations (ECG, VBG, CXR)
* Clinical Sx (if examined): wheeze, patchy insp creps, patchy erythematous rash to legs evolves
* Supplemental O2, IV access
* **Atrovent** only for bronchospasm (CA excess: avoid B2 agonist)
* Considers PPV if APO (not required)
* Titrate **IV fentanyl** for pain (large doses, control nausea, consider infusion)
* **IV chlorpromazine (or promethazine)** **for agitation/HT** : 0.2-0.5mg (max 25mg) over 10 mins. NB: F. Shann: CPZ: to 1mg/kg (max 50mg); Prom: to 1.5mg/kg as sedative)
* **GTN spray then infusion** for HT > 200/120: S/L dosing while preparing; (50mg/500mLNS or D5W: start 3ml/H and double q5min until BP < 160/110. NB contraindicated in PDEi’s
* **IV magnesium** **for pain/HT:** 0.15mg/kg over 15mins +/- 1 repeat; infuse 0.1-0.15mmol/kg/hr; monitor BP, DTR’s and serum Mg (1.5-2.5mmol/L), wean after 4-6 hours by 1-2mmol/h every hr; **Ca Gluconate/Fluid if hypoten**.
* **IV hydralazine** (vasodilator ? mech)5-10mg IV stat (0.1-0.2mg/kg) then 4-6mcg/kg/min (**incompatible with GTN, dextrose**)
* **Labetalol** (SAS): betablocker + partial beta2 agonist (vasc sm muscle) with some alpha-1 block (7:1)
* **Other agents:** **SNP** (0.5-4mcg/kg/min): **phentolamine IV** (nonselective alpha blocker: **not avail RDH)**: 0.1mg/kg stat then 5-50mcg/kg/min, **Diazoxide** (not at RDH)
* If cardiogenic shock then I+V, inotropic support (not required this scenario)
* Consider consultation with PIC (in house ED first)
* Serial ECG’s, Trop, routine bloods and consider echo (ballooning)
* Contact NOK
* Refer med and ICU if ongoing symptoms> 4h or abnormal trop or cardiac dysfn
* D/c if asymptomatic 6h after ceasing opiates/infusions

## Debrief notes

Let’s recap what happened in the scenario? And then?

This scenario was designed to show……. Let’s look at the clinical factors then the human factors

I noticed that…talk me through your reasons for…. What effect did that have on…?

Recap. So what we have discussed is…. In what other situations might this be an issue?

What might you do differently next time this occurred?

Clinical: Show WHITE irukandji manx (also Murray TOx HB, CARPA manual)

Describe irukandji? What causes it, where does it occur, complications, who knows the RDH protocol – are there any issues with it from an evidence point of view

Caruka barnesi / other carybdeid jellyfish Venom produces endogenous CA release

Onset syx within 60mins of seawater contact

Pain, sweating, N/V, HA, anxiety/doom, pain back, abdo, chest, limbs, back

APO 3-10h

Complications: APO, ICH, LVF, CM / cardiogenic shock, priapism, pancreatitis

First aid: vinegar to site of sting in known (pain/rash)

Pain: Opioids, Mg

Emesis: CPZ/Promethazine

Hypertension: Mg (decr CA release, opioid sparing effect in pain; adopted in QLD), Chlorprom, GTN, other

**Avoid unopposed b blockade**

Breathlessness: APO, pain, aspiration, bronchospasm: O2, PPV

Cardiogenic shock