



PAIN MANAGEMENT IN EMERGENCY & TRAUMA DEPARTMENT



PAIN FREE PROGRAMME | KEMENTERIAN KESIHATAN MALAYSIA | UNIT AUDIT KLINIKAL

ADULT PAIN SCENARIOS

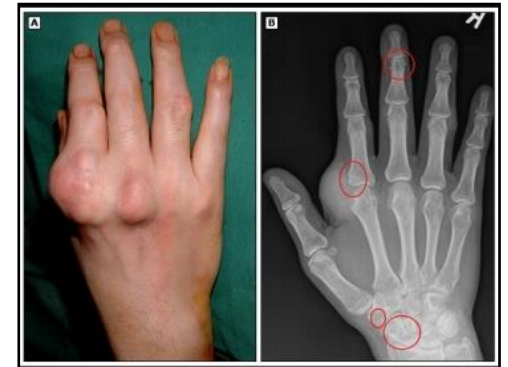
1. Gout
2. Herpes Zoster
3. Migraine
4. Tension Headache
5. Renal Colic
6. Soft Tissue Injury
7. Abdominal Pain
8. Back Pain
9. Burns
10. Cardiac Pain
11. Dental Pain
12. Fractures & Dislocation
13. Abdominal Aortic Aneurysm
14. Biliary Tract Pain
15. Bites and stings: Marine



1. GOUT

Key points:

- i. There is evidence that NSAIDs and colchicine are effective **first line analgesics** for acute gout attacks.
- ii. Corticosteroids such as prednisolone may be preferred for patients with renal impairment or complex medical problems.
- iii. Colchicine has a low therapeutic index and is a potent cellular toxin in overdose.
- iv. Given the recurrent nature of gout and the likelihood of previous use of colchicine in a given patient, the ETD provider may find it **useful to ask if the drug has been efficacious** in the past thus can be considered for repeat use.



Analgesic Technique:

NSAIDS

When NSAIDs are contraindicated or ineffective, Colchicine 1000 micrograms orally, then 500 micrograms 1 hour later (maximum 1500 micrograms per course) ideally within 12 hours of acute episode

Do not repeat the course within 3 days.

In renal dysfunction ($\text{CrCL} < 30\text{mL/min}$) do not repeat course within 2 weeks.



Consider use of prednisolone when NSAIDs and colchicine are contraindicated or ineffective

Prednisolone 50mg orally daily (for 5 days then review)

Consider prescribing H2 antagonist/ PPI if patient at high risk for Upper Gastrointestinal bleeding

If a Pain Score ≥ 4 , please refer to the Analgesic Ladder for Acute Pain Management.

Disposition:

i. Pain free discharge*

ii. Referral to KK/ Primary team for further long term follow up

Perubatan 6A-Pin. 3/96

| | |
|----------------------------------|--|
| Nama: | R_x CIP CX 205965 if patient on Colchicine before and effective Tab Colchicine 1000mcg stat then 500mcg 1hr later OR Voltaren 50mg prn/tds x 1/52 Tablet Ranitidine 50mg tds x 1/52 OR Prednisolone 50mg orally x 5/7 KLINIK KESIHATAN NEGERI (Tandatangan dan Cop Rasmi) |
| No. K.P.: | |
| No. Daftar: | |
| Umur: | |
| Tarikh: | |
| Penyakit: Gouty Arthritis | |

MINISTRY OF HEALTH MEDICINES FORMULARY - 2/2015



| | | | |
|-----|--------------------------|-----------------------|---|
| 385 | Colchicine 0.5 mg Tablet | M04AC01000 T1001XX | B |
|-----|--------------------------|-----------------------|---|

| | | | | |
|-----|-------------------------|-----------------------|---|--|
| 467 | Diclofenac 50 mg Tablet | M01AB05520 T1001XX | B | Pain and inflammation in rheumatic disease |
|-----|-------------------------|-----------------------|---|--|



2. HERPES ZOSTER

Key points:

Antivirals commenced **within 72 hours of onset** of the rash reduces duration of pain, duration of rash and reduces ophthalmic complications.

Herpes Zoster therapy and associated pain management should be treated early and prompt treatment of acute herpes zoster decreases the risk of Post Herpetic Neuralgia development and reduces its severity.

Antiviral Therapy:

If within 72 hours of onset of rash, use:

Acyclovir 20mg/kg (up to 800mg) orally 5 times a day for 7 days

FIGURE 2. Case of herpes zoster ophthalmicus



Analgesic Techniques:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4 g per 24 hour period)

and/or

Oral Tramadol \pm NSAIDs / COX-2

If a Pain Score ≥ 4 , please refer to the Analgesic Ladder for Acute Pain Management.



Disposition:

- i. Refer to Medical/ Dermatology Team for definitive management**
- ii. Consider early referral to Pain Specialist to prevent progression to chronic pain**
- iii. Pain free discharge***

Perubatan 6A-Pin. 3/96

| | |
|---------------------------------------|--|
| Nama: | <p>R_x</p> <p>CIP CX 205965</p> <p>Acyclovir 800mg x 5 daily x 1/52</p> <p>Paracetamol 1g orally 4 hourly prn x 1/52 + Cap Tramadol 50mg tds x 1/52 OR Voltaren 50mg tds x 1/52 OR add Etoricoxib (Arcoxia) 60mg OD x 1/52</p> <p>KLINIK KESIHATAN NEGERI</p> <p>..... (Tandatangan dan Cop Rasmi)</p> |
| No. K.P.: | |
| No. Daftar: | |
| Umur: | |
| Tarikh: | |
| Penyakit: HERPES ZOSTER | |

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| | | | |
|----|-------------------------|-----------------------|------|
| 12 | Acyclovir 200 mg Tablet | J05AB01000T 1001XX | A/KK |
|----|-------------------------|-----------------------|------|

| | | | |
|------|----------------------------|-----------------------|------|
| 1573 | Tramadol HCl 50 mg Capsule | N02AX02110 C1001XX | A/KK |
|------|----------------------------|-----------------------|------|

| | | | |
|-----|-------------------------|-----------------------|----|
| 588 | Etoricoxib 60 mg Tablet | M01AH0500 OT1003XX | A* |
|-----|-------------------------|-----------------------|----|



3. MIGRAINE (common and classic)

Analgesic Techniques:

Once a diagnosis of migraine has been made and there are no “red flags”, use:

Paracetamol

And/or

NSAID or COX-2

And/or

Metoclopramide 10mg IV

If this fails / has failed OR for severe pain or If a Pain Score ≥ 4 triage patient to yellow zone

Manage according to moderate and severe pain protocol



Disposition:

i. Pain free discharge*

ii. Refer to Neuromedical or Medical Department for long term Mx

| | |
|-------------|--|
| Nama: | R_x CIP CX 205965 Tab Parecetamol 1gram tds x 5/7 Voltaren 50mg tds x 5/7 Maxolon 10mg tds x 5/7 OR Etoricoxib 60mg OD x 5/7 KLINIK KESIHATAN NEGERI (Tandatangan dan Cop Rasmi) |
| No. K.P.: | |
| No. Daftar: | |
| Umur: | |
| Tarikh: | |
| Penyakit: | MIGRAINE |

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| | | | | |
|-----|-------------------------|-----------------------|----|--|
| 588 | Etoricoxib 60 mg Tablet | M01AH0500 OT1003XX | A* | |
| 467 | Diclofenac 50 mg Tablet | M01AB05520 T1001XX | B | Pain and inflammation in rheumatic disease |



4. TENSION HEADACHE

Analgesic Technique:

Paracetamol

and/or

NSAIDs or COX-2 inhibitor

Consider (if unable to tolerate orally or pain score ≥ 4 + availability in ED)

Paracetamol can be given IV 1g 6 hourly prn

***assess hydration status and manage accordingly**

If a Pain Score ≥ 4 , please refer to the Analgesic Ladder for Acute Pain Management.

Disposition:

i. Pain free discharge*



| | | |
|-----------------------------------|--|--|
| Nama: | | R_x CIP CX 205965 Tab Paracetamol 1g tds x 5/7 Voltaren 50mg tds x 3/7 KLINIK KESIHATAN NEGERI <i>(Tandatangan dan Cop Rasmi)</i> |
| No. K.P.: | | |
| No. Daftar: | | |
| Umur: | | |
| Tarikh: | | |
| Penyakit: TENSION HEADACHE | | |

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| | | | | |
|------|--|-----------------------|---|-----------------------------------|
| 1180 | Paracetamol 10mg/ml in 100ml Solution for IV Infusion | N02BE01000 P3101XX | A | Mild to moderate pain and pyrexia |
|------|--|-----------------------|---|-----------------------------------|



5. RENAL COLIC

Key points:

- i. Analgesia does not hinder the diagnostic process in abdominal pain.
- ii. Non-selective NSAIDs and opioids provide effective analgesia for renal colic.
- iii. *The use of pethidine should be avoided in favour of other opioids.*

Analgesic Techniques:

For severe pain use:

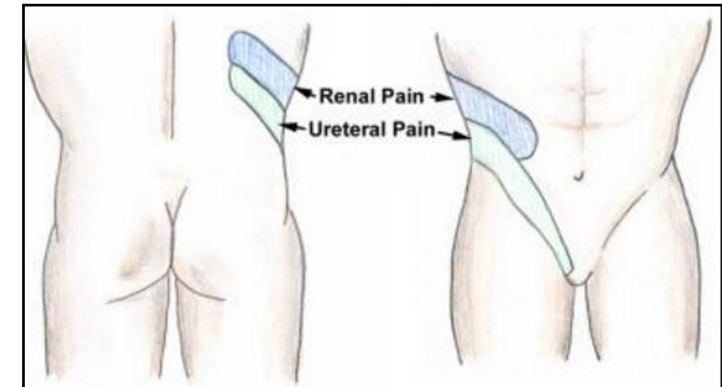
IV Morphine Pain Protocol

If morphine is contraindicated, consider

Fentanyl at 25 to 50 micrograms IV as initial equivalent dose.

and

NSAID or COX-2 inhibitor



For moderate pain use:

**Tramadol
with or without
NSAID or COX-2 inhibitor**

NSAIDS should be used with caution, if at all, in the elderly or in the presence of renal disease or peptic ulcer disease.

If a Pain Score ≥ 4 triage patient to yellow zone, manage according to the Analgesic Ladder for Acute Pain Management.

Disposition:

i. Pain free discharge*

Nama:

R_x

CIP CX 205965

No. K.P.:

Etoricoxib 60mg OD x 3/7

No. Daftar:

Tab Paracetamol 1 gram tds x 3/7

Umur:

or

Tarikh:

Voltaren 50mg tds x 3/7

Penyakit:

RENAL COLIC

KLINIK KESIHATAN

NEGERI

(Tandatangan dan Cop Rasmi)

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| | | | |
|-----|-------------------------|-----------------------|----|
| 588 | Etoricoxib 60 mg Tablet | M01AH0500 OT1003XX | A* |
|-----|-------------------------|-----------------------|----|

| | | | | |
|-----|-------------------------|-----------------------|---|--|
| 467 | Diclofenac 50 mg Tablet | M01AB05520 T1001XX | B | Pain and inflammation in rheumatic disease |
|-----|-------------------------|-----------------------|---|--|



6. SOFT TISSUE INJURY

Key points:

- i. Regular paracetamol and then if ineffective, NSAIDS may be used for musculoskeletal pain.
- ii. NSAIDs if used for acute musculoskeletal injury should be used short term.
- iii. Short term oral weak opioids may be required.



Analgesic Techniques:

**For severe pain use:
IV Morphine Pain Protocol**

**with
Paracetamol 1g IV (if available) or oral 4 hourly prn (to a maximum
dose of 4g per 24 hour period)**

and/or

NSAIDs or COX-2 inhibitor or Tramadol

For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

and/or

NSAIDs or COX-2 inhibitor

Disposition

i. Pain free Discharge



| | | |
|--|--|--|
| Nama: | | R_x CIP CX 205965 Tablet Paracetamol 1g tds x 1/52 + Mefenamic acid 500mg tds x 4/7 KLINIK KESIHATAN NEGERI (Tandatangan dan Cop Rasmi) |
| No. K.P.: | | |
| No. Daftar: | | |
| Umur: | | |
| Tarikh: | | |
| Penyakit: SOFT TISSUE INJURY | | |

Perubatan 6A-Pin. 3/96

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| | | | |
|-----|----------------------------------|-----------------------|---|
| 953 | Mefenamic Acid 250 mg Capsule | M01AG0100 OC1001XX | B |
|-----|----------------------------------|-----------------------|---|



7. ABDOMINAL PAIN

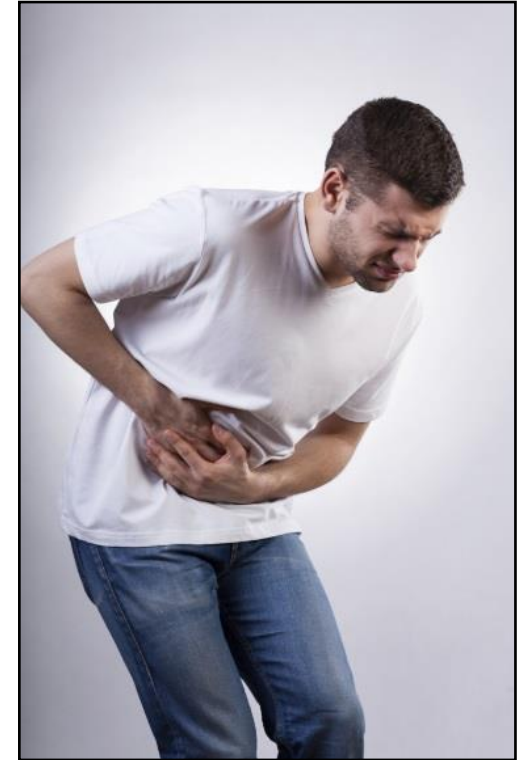
Key points:

Analgesia does not hinder the diagnostic process in abdominal pain.

Analgesic Technique:

For severe pain use:
IV Morphine Pain Protocol

If morphine is contraindicated, consider
Fentanyl at 25 to 50 micrograms IV as initial equivalent dose.
And
Paracetamol 1g IV (if available) 4 hourly prn (to a maximum dose of 4g per 24 hour period)



For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

**If the oral and rectal routes are contraindicated,
Tramadol IV/SC 50-100mg 6-8 hourly prn (to a maximum dose of 400mg per 24 hour period)**

Disposition:

- 1. Consider referral to Gastroenterologist/ General Surgeon if recurrent episodes of acute dyspepsia as outpatient.**
- 2. Pain free discharge***

8. BACK PAIN (acute)

Key points:

- i. Simple analgesics and physiotherapy referral should be considered for all patients with back pain of musculoskeletal origin.
- ii. Postural advice, minimizing bed rest, staying active and heat wrap therapy are effective in low back pain.
- iii. Spinal pathology such as osteoarthritis, spondylosis, bulging discs and canal stenosis are often asymptomatic and may not be the cause of the pain.
- iv. Please refer to **The Malaysian Low Back Pain Management Guidelines** as well



Red Flags are features of the presentation that suggest a potentially serious condition

Analgesics Technique:

For severe pain use:

IV Morphine Pain Protocol

and

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

and/or

NSAIDs or COX-2 inhibitor

For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

and/or

NSAIDs or COX-2 inhibitor or Tramadol

Disposition:

- i. Pain free discharge*.
- ii. Consider referral to Primary Team/ Physiotherapy

9.BURNS

Key points:

- i. **Titrated boluses of IV morphine will most likely be required for effective analgesia in acute severe burns.**
- ii. **Opioid dose requirements will typically be higher for burns patients than for other emergency situations.**
- iii. **Non-pharmacological interventions such as cooling and covering are important pain control measures**



Analgesics Technique:

For severe pain use:

IV Morphine Pain Protocol

**If morphine is contraindicated, consider
Fentanyl at 25 to 50 micrograms IV as initial equivalent dose.**

And

**Paracetamol 1g IV (if available)/ Oral 4 hourly prn (to a maximum
dose of 4g per 24 hour period)**

For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

If the oral and rectal routes are contraindicated,

Paracetamol can be given IV 1g 6 hourly

Disposition:

- i. Pain free discharge***
- ii. Consider referral to Plastic/ General Surgeon**

10. CARDIAC PAIN

Key points:

- i. Patients presenting with cardiac chest pain should receive glyceryl trinitrate (GTN) and morphine
- ii. Therapies to ameliorate coronary ischaemia such as beta blockers and reperfusion therapies may also reduce pain.



Management and Analgesia Technique:

Aspirin 300mg oral initial dose

and

Glyceryl trinitrate (GTN) sublingual spray 400 micrograms

or

Sublingual tablet 0.5 mg

Repeat every 5 minutes as needed and if tolerated (monitor for hypotension) to a maximum of 3 doses

IV Morphine Pain Protocol

If morphine is contraindicated,

consider

Fentanyl at 25 to 50 micrograms IV as initial equivalent dose

| | | | |
|-----|--|-----------------------|---|
| 612 | Fentanyl Citrate 50 mcg/ml Injection | N01AH01136 P3001XX | A |
|-----|--|-----------------------|---|

11. DENTAL PAIN

Key points:

- i. Evidence for dental pain management is largely based on tooth extraction research.
- ii. Paracetamol, NSAIDs and tramadol provide effective analgesia for acute dental pain.
- iii. **Dental nerve block** provides effective analgesia for acute dental pain



Analgesics Technique:

For severe pain use:

IV Morphine Pain Protocol

**If morphine is contraindicated, consider
Fentanyl at 25 to 50 micrograms IV as initial equivalent dose.**

and/or

NSAIDs or COX-2 inhibitor

For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

or

NSAIDs or COX-2 inhibitor or Tramadol

Disposition:

- i. Refer to Dental team**
- ii. Pain free discharge***

12. FRACTURES AND DISLOCATION

Key points:

- i. Immobilisation, resting the injured site, ice and elevation of a suspected fracture are important pain control measures.
- ii. Femoral nerve block in combination with IV opioids is more effective than IV opioids alone in treating pain from fractured neck of femur.
- iii. Anticipate procedures where some movement is required, such as x-ray, and ensure adequate analgesic cover.

Analgesics Techniques:

For severe pain use:
IV Morphine Pain Protocol

If morphine is contraindicated, consider
Fentanyl at 25 to 50 micrograms IV as initial equivalent dose.

And/ Or
Paracetamol can be given IV/ Oral 1g 6 hourly

And/ Or
NSAIDs or COX-2



For moderate pain use:

Paracetamol 1g orally 4 hourly prn (to a maximum dose of 4g per 24 hour period)

And/ Or

NSAIDs or COX-2 inhibitor or Tramadol

**If the oral and rectal routes are contraindicated,
Paracetamol can be given IV 1g 6 hourly**

For reduction of dislocations:

- i. To facilitate reduction of dislocations of major joints, refer to PSA in Emergency Department
- ii. These techniques should only be performed in a **monitored clinical area** with sufficient staffing levels by clinicians with advanced airway skills and specific training in the use of these medications.

13. ABDOMINAL AORTIC ANEURYSM

Key points:

- i. Treating pain in patients with suspected ruptured AAA, the most important consideration is the effect the analgesic will have on the patient's haemodynamic status.
- ii. Opioid in small titrated doses, are the analgesics recommended by experts in AAA pain relief.
- iii. Hypotension is much less likely to occur with fentanyl since this agent does not cause the histamine release often associated with morphine

Analgesics Techniques:

Severe Pain

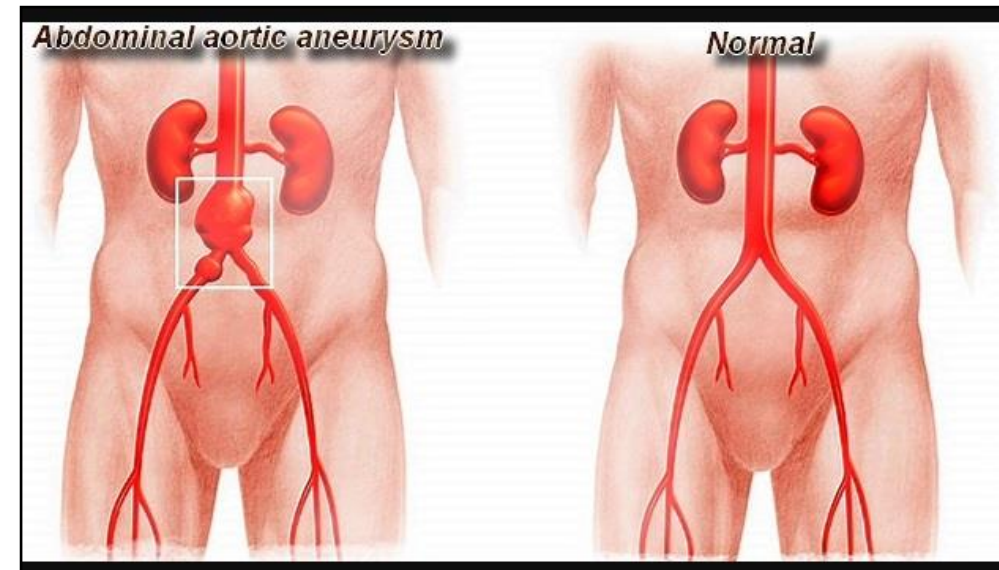
**Fentanyl (initial dose 50 to 100 mcg IV,
then titrated)**

Or

IV Morphine Pain Protocol

Disposition:

i. Refer to Vascular/ General Surgeon



14. BILIARY TRACT PAIN

Key points:

- i. There are no significant differences between morphine and other pure mu receptor agonists (e.g. Pethidine).
- ii. NSAIDs provide good analgesic effect, lack untoward effects on biliary tract pressure, and (perhaps through anti-inflammatory activity) seem to reduce the rate of progression from uncomplicated biliary colic to acute cholecystitis

Analgesics Techniques:

**Severe Pain:
IV Morphine Pain Protocol**

**Or
NSAIDs or COX-2 inhibitor**

Disposition:
i. Consider referral to General Surgeon
ii. Pain free discharge*



15. BITES AND STINGS - MARINE

Key points:

- i. Marine envenomation can result from discharging nematocysts (e.g. jellyfish, fire coral), puncturing spines (e.g. sea urchins, stingrays), or actual bites (e.g. blue octopus, sea snakes).
- ii. For the jellyfish (Cnidaria or Coelenterates) envenomation, **hot water immersion** (40° to 45° C via immersion or shower, for up to 90 minutes), can **inactivate venom** and achieve better pain relief than alternative approaches such as acetic acid, papain and opioids).

Analgesics Techniques:

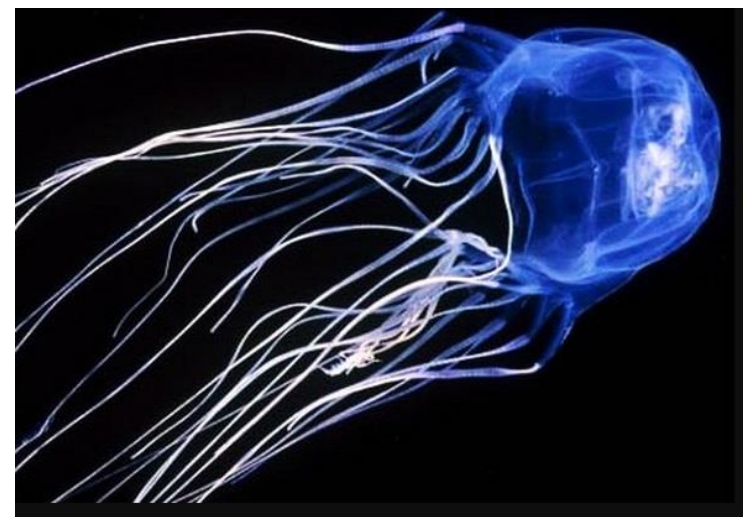
First line:

**Warm water immersion or shower (40° to 45° Celsius,
as tolerated for 90 minutes)**

**Jellyfish: Acetic acid dousing with 4-5% solution
household vinegar**

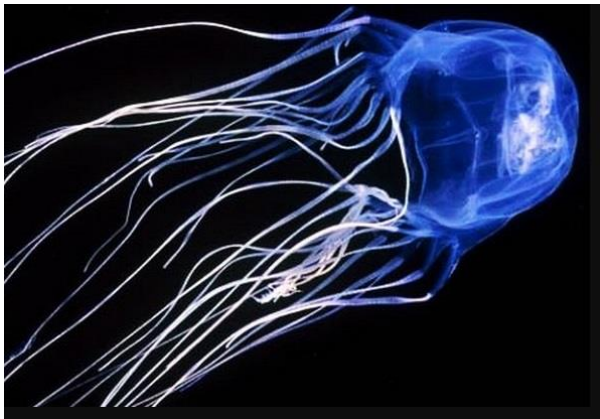
And/ Or

IV Morphine Pain Protocol



Irukandji syndrome is a condition induced by venomization by the sting of *Carukia Barnesi*, a species of Irukandji Jellyfish, and certain other box jelly fish.

Unless immediate medical action is taken, patient can go into cardiac arrest and die.



Special Cases:

Antivenom available:

Consider for intractable pain or severe toxicity

Irukandji-like syndrome:

Magnesium (0.05 g/kg IV, maximum 2.5 g over 20-30 minutes, with repeat dosing and infusion rates guided by side effects and magnesium levels)

Benzodiazepines:

Diazepam 5-10 mg IV 4 H for cramping

Failure of acetic acid, especially for stings of the sea nettle:

Slurry of bicarbonate (baking soda) in water

Pain Free Discharge* consists of the following:

- i. Referral to appropriate discipline for long term management
- ii. Acceptable pain score (pain score < 4) upon discharge
- iii. Adequate analgesic medication





THANK YOU



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