



Guidelines For Pain Management in Palliative Care

**Nepalese Association of Palliative Care
(NAPCare)**

Second Edition
2017

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*This second edition has been revised and updated in accordance with the recent advances in pain management in palliative care with added focus on **pediatric pain management**. Every effort has been made to validate the guidelines regarding drug and dosage formulation and drugs available in Nepal. Reference to individual drug prescription is highly recommended to the readers if needed.*

We are thankful to our experts, users and readers for their most valuable suggestions to bring second edition from the first one. We wish to have continued inputs to make it better.

NAPCare: Why and How

To make palliative care services accessible to more people by raising awareness that palliative care and hospice services are available and that patients do not have to suffer when dying, a group of palliative care providers got together to form NAPCare. After several rounds of meetings, the **Nepalese Association of Palliative Care (NAPCare)** was formed and officially registered on December 16th2009. NAPCare is a multidisciplinary, non-political, not profit organization with the sole purpose of uplifting palliative care by training, research and providing a good standard of care.

The uniqueness of this association is that membership is open to all medical and non-medical personnel including palliative care social workers, volunteers, etc. Working in this multidisciplinary way will increase our effectiveness for those in need.

NAPCare: Aim and Goals

- To work as a non-profit organization alone or in partnership with other agencies provide palliative care to Nepalese people
- To advocate for palliative care and to sensitize the public, communities and government to it
- To introduce palliative care at all levels of the medical and nursing curricula
- To make palliative care more easily available to all who require it
- To conduct seminars and conferences to develop and improve the knowledge of palliative care in Nepal
- To network with national and international agencies to develop and improve palliative care
- To lead policy development and continuously improve and maintain the standard of palliative care in Nepal

Hospice and Palliative Care

Hospice care or palliative care is a philosophy of care that focuses on patient comfort and quality of life rather than curing the patient's disease. It is generally appropriate for someone with a life-limiting illness, who may or may not be receiving curative management; the goal is to alleviate symptoms and improve quality of life. The mission of palliative care is to affirm life and view death as a natural process. Palliative care is not designed to "hasten" death or "help" someone die, but rather to help patients live as fully as possible for the remainder of their lives. Most people, if asked, will say they dream of a peaceful, comfortable death surrounded by their loved ones. An

interdisciplinary team of trained professionals working together to deliver palliative care can make that dream a reality.

Palliative care is defined by the WHO as: *“.....an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of sufferings by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual”*.

Cancer Pain: A Public Health Issue

Pain is one of the most common symptoms seen in patients with advanced illness; including cancer. It is frequently not optimally managed.

Some important data related to pain are;

“4 of every 5 people globally lack access to essential pain medicines.”

“3.6 million People die with untreated severe pain from cancer and HIV every year.”

“78% of deaths needing pain control occur in low and middle-income countries.”

Acute pain is one of the most common adverse stimuli experienced by children, occurring as a result of injury, illness, and necessary medical procedures. It is associated with increased anxiety, avoidance, somatic symptoms, and increased parent distress. Despite the magnitude of effects that acute pain can have on a child, it is often inadequately assessed and treated. Numerous myths, insufficient knowledge among caregivers, and inadequate application of knowledge contribute to the lack of effective management.

In Nepal we have morphine and other analgesic drugs available and so patients should not be dying in pain. NAPCare has published these guidelines to enable all health care professionals to provide good pain control for their patients.

Pain: Definition

Mc Caffery (1968) – Pain is whatever the experiencing person says it is, existing whenever s/he says it does.

[International Association for the Study of Pain](#) (1979) – [Pain](#) is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

Pain Control: Basic Principles

- The assessment of pain is the integral part of the holistic care of the patient
- Pain may be of several types
- A patient who feels cared for may feel less pain
- A patient free from pain is better placed to face his/her illness
- Cancer pain can be well controlled in 80% of patients. If the patient's pain appears not to respond to treatment, consider alternative causes of pain (spiritual, social or psychological factors)
- Pain in cancer patient may also be related to other issues:
 - Treatment – e.g. post-radiotherapy
 - Other illnesses – e.g. osteoarthritis
 - Debility – e.g. pressure ulcers
- Patient and care giver understanding of the use of their medication is vitally important in achieving good pain control
- Failure to assess pain is a critical factor leading to under-treatment. Assessment involves both the clinician and the patient.

Pain: Assessment

Pain SHOULD be considered as the “fifth vital sign.” As with the other vital signs: pulse, blood pressure, respiration and temperature, pain needs to be assessed regularly. All patients should be evaluated for the presence of pain at every visit, and any new pain should be thoroughly evaluated. Initial assessment should always start with the patient history, examination and occasionally, diagnostic examinations. Questions to be included in the pain assessment are follows –

Where is the pain? (there may be more than one pain)

How severe is the pain?

What does it feel like? (e.g. aching, stabbing, cramping, burning, etc)

When did it start?

Timing - Is the pain there all the time or does it come and go?

Treatment - Has any treatment been tried and has it helped?

Changing - What makes it better or worse (eg movement, eating, time of day, etc)?

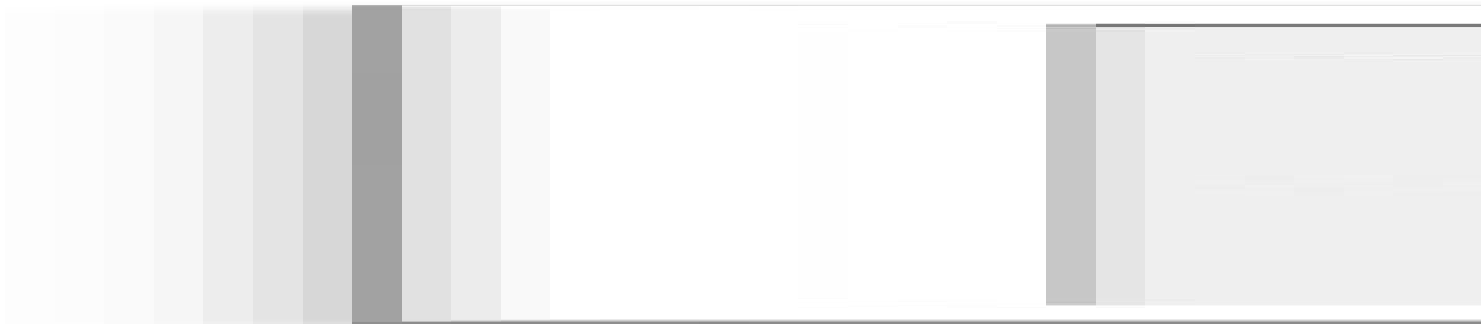
Causing - What do you (the patient) think is causing the pain?

Pain Assessment: Tools

Different tools are available to assess pain.

1. **Numerical Rating Scale (NRS)** – This is the most commonly used pain assessment tool. This enables the clinician to assess how severe the pain is and whether it is improving over time or getting worse.

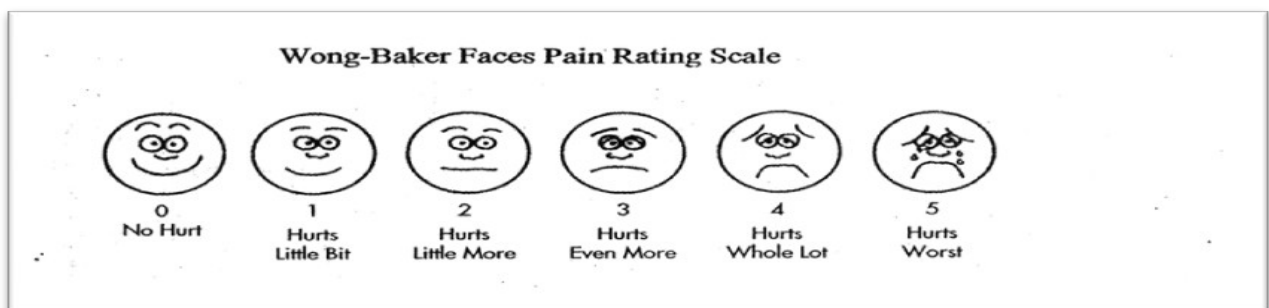
Ask the patients to score their pain with these words: “On a scale of zero to ten, where zero is no pain and ten is the worst pain imaginable, how would you score your pain now.”



- | | |
|------------------|-----------|
| A. NO PAIN | (0) |
| B. MILD PAIN | (1 – 3) |
| C. MODERATE PAIN | (4 - 6) |
| D. SEVERE PAIN | (7– 10) |

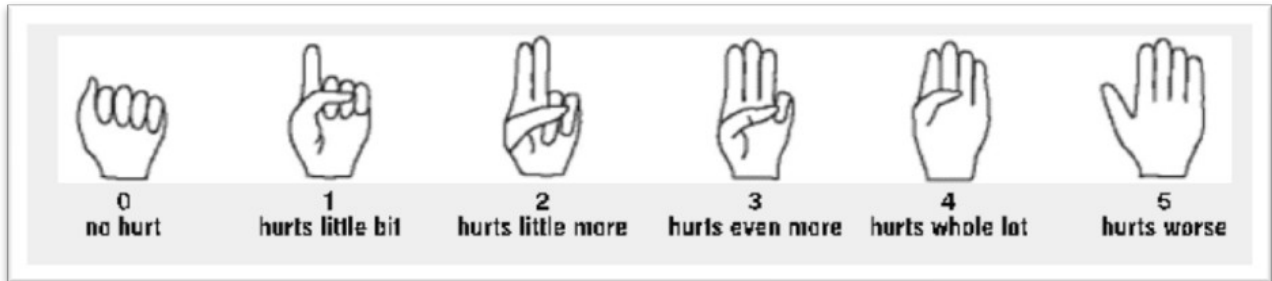
2. **Wong-Baker Faces Pain Rating Scale** – If the patient has difficulty in understanding the NRS e.g. children or the very old, the Wong-Baker Faces Pain Rating Scale may be used.

Ask the patients to score their pain with these facial expressions: “On a scale of zero to five, where zero is no hurt and five is the hurts worst.”



3. **Five Fingers Scale** – This can be particularly useful for patients who are being monitored for pain over several days as they learn how to measure their pain.

Ask the patients to show how much pain they have by holding up different numbers of fingers. “On a scale of zero to five, where zero is no hurt and five is the hurts worst.”



4. **Revised FLACCP** – This tool is used to assess pain in non-verbal children and neurological impaired patients. This assessment is done by their behaviors. Behaviors associated with pain in this population include: vocalizations (crying, moaning), facial expression (grimacing), consolability, interactivity(withdrawn), diminished sleep, movement(restless, increased movement of extremities), tone and posture (arching, stiffening) and physiological responses (diaphoresis, pallor, tachycardia). Core pain behaviors are consistently identified in this population yet each child will display a unique set of behaviors.It is important to be vigilant to the possibility of pain in children with neurological impairments.

Revised-FLACC				
Categories	0	1	2	Individualized behaviors
Face	No particular expression or smile	Occasional grimace or frown; withdrawn or disinterested; appears sad or worried	Consistent grimace or frown; Frequent/ constant quivering chin, clenched jaw; Distressed looking face; Expression of fright or panic Other (write-in)	Examples: ‘Pouty’ lip; clenched and grinding teeth; eyebrows furrowed; stressed looking; stern face; eyes wide open, looks surprised; blank expression; non-expressive
Legs	Normal position or relaxed; usual tone and motion to limbs	Uneasy, restless, tense; occasional tremors	Kicking, or legs drawn up; marked increase in spasticity, constant tremors or jerking Other (write-in)	Legs and arms drawn to center of body;clonus in left leg with pain; very tense and still; legs tremble

Activities	Lying quietly, normal position, moves easily; regular, rhythmic respirations	Squirming, shifting back and forth, tense or guarded movements; mildly agitated (e.g. head back and forth, aggression); shallow, splinting respirations, intermittent sighs	Arched, rigid or jerking; severe agitation; head banging; shivering (not rigors); breath holding, gasping or sharp intake of breaths, severe splinting Other (write-in)	Grabs at site of pain; nods head; clenches fists, draws up arms; arches neck; arms startle; turns side to side; head shaking; points to where it hurts; clenches fist to face, hits self, slapping; tense, guarded, posturing; thrashes arms; bites palm of hand; holds breath
Cry	No cry, no verbalization	Moans or whimpers; occasional complaint; occasional verbal outburst or grunt	Crying steadily, screams or sobs, frequent complaints; repeated outbursts, constant grunting Other (write-in)	States, 'I'm okay' or 'All done'; mouth wide open; states 'Owie' or 'No'; gasping, screaming; grunts or short responses; whining, whimpering, wailing, shouting; asks for medicine; crying is rare
Consolability	Content and relaxed	Reassured by occasional touching, hugging or being talked to; distractible	Difficult to console or comfort; pushing away caregiver, resisting care or comfort measures Other (write-in)	Responds to cuddling, holding, parent, stroking, kissing; distant and unresponsive when in pain

Reassessment: After Treatment

It is important to review a patient's pain after you have given them analgesia to assess its effect:

30 minutes after parenteral analgesic

1 hour after oral analgesic

With each report of new or changed pain

If the pain is not controlled – take action. Follow the guidelines.

Pain: Types

Cancer pain may be of varying types depending on the origin of the pain:

- 1. Visceral Pain** (abdominal and chest pain, e.g. pain from internal organs)

Features: Dull aching pain, poorly localized

Treatment: Visceral pain is sensitive to opioid, use opioid

2. Somatic Pain (bone, joint and muscle pain, e.g. pain from bone metastases)

Features: Aching, sharp, normally localized to the site of the problem, may be worse on movement

Treatment: Somatic pain is partially sensitive to opioid, use NSAID and Paracetamol in addition

3. Neuropathic Pain (from nerve compression or infiltration)

Features: Burning or shooting, associated with numbness and with a dermatome or nerve distribution

Treatment: Neuropathic pain is poorly sensitive to opioids, use adjuvant analgesic like tricyclic antidepressant or anticonvulsants

Pain: Management

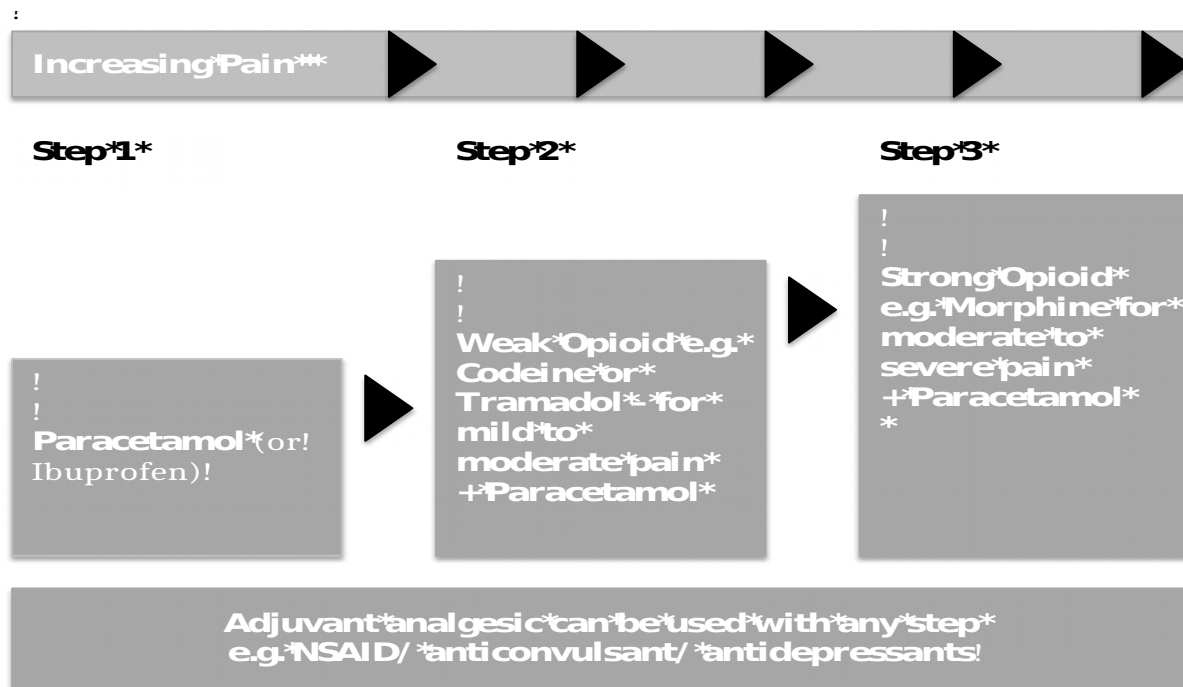
Pain management is by a combination of pharmacological and non-pharmacological means.

Pharmacological Approach

The WHO in 1986 established a stepwise system which is the backbone of the pharmacological approach. The goal was to provide treatment guidelines that health-care practitioners could easily follow. These pain management guidelines suggest that the choice of analgesic pharmacotherapy should be based on the intensity of pain reported by the patient, not simply on its specific etiology. In the WHO guidelines, morphine remains the cornerstone for the management of cancer pain.

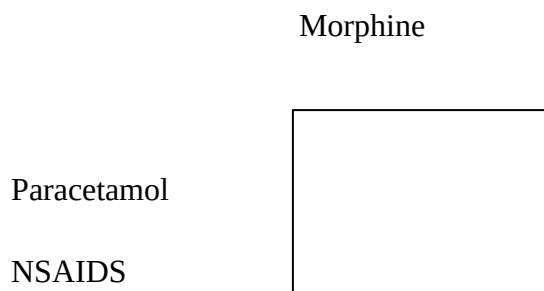
Pharmacological Pain Management: Three principles by WHO

- 1) **By Mouth** – The oral route is preferred for all commonly used analgesics unless there is a problem with swallowing or absorption
- 2) **By the Clock** – Most patients with pain from cancer or another chronic illness have continuous pain and require regular medication. PRN medication leads to poor pain control
- 3) **By the Ladder** – WHO analgesic ladder has three steps for the management of pain



The other option is Two Steps Ladder where step two is deleted and weak opioids are not used. Randomized study published this year has shown that **in patients with cancer with moderate pain, low-dose morphine reduced pain intensity significantly compared with weak opioids, with a similarly good tolerability and an earlier effect.**

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Pharmacological Pain Management: Other aspects

1. Choose the drug based on Severity of pain (mild, moderate, and severe)
2. Choose the least invasive route-oral/SL/PR when possible
3. Once the daily opioid requirement is determined it can be converted in to sustained release giver two to three time daily with immediate release used as needed for breakthrough pain
4. Provide breakthrough rescue dose typically 10-15% of 24 hours opioid requirement, available as often as every 1-2 hour PRN for oral
5. Opioid titration- increases by 30-50% for moderate pain, 50-100% for severe pain

6. If more than 3-4 dose of breakthrough medication are used for chronic pain, increased the dose of sustained release opioid by an amount equivalent to 50-100 % of total amount of breakthrough medication used in 24 hours
7. Manage side effects, initiate bowel regimen when started opioid
8. Consider both non opioid and opioid to maximize pain relief
9. Adjuvant analgesics enhance analgesic efficacy
10. Infant <6 months of age require lower initial opioid dosing, approximately 25 to 50% of the standard doses provided
11. Codeine is not recommended in children as upto 1/3of children gain no analgesic effect due to inability to convert to active metabolites
12. Consider opioid rotation when side effects become intolerable
13. The safest opioids in renal impairment are fentanyl and methadone
14. Factors aggravating pain must be considered. Poorly controlled pain, other symptoms (insomnia, nausea), psychological (depression, anxiety) factors, cultural factors as well as spiritual factors should be addressed. Treat concurrent symptoms that exacerbate pain
15. Non pharmacological intervention should be integrated into pain control management (cuddling, massage, heat, cold, physical and occupational therapy, guided imagery, meditation, hypnosis, distraction, storytelling, music and art therapy)
16. Neurological problems like spasticity muscle spasm /myoclonus, seizure should be taken as special consideration for management. Judicial use of diazepam, tizanidine, baclofen, clonazepam, lorazepam, midazolam etc along with other supporting care will help to minimized patient pain, distress and anxiety

Pain Management: Drugs Used

Drugs used for pain management in palliative care are non-opioid analgesics, opioid analgesics and adjuvant analgesics.

Non-Opioid Analgesics

A) Paracetamol(10-15mg/kg/day)

- 500-1000 mg up to every 6 hours. Upper limit 4gm/day
- Preferred route of administration is oral but IV can be given if needed for short duration
- Caution: patients with liver disease

B) Non-steroidal anti-inflammatory drug (NSAID)

- Somatic pain: Bone metastases and soft tissue pain
- Cautions:
 - o patients with previous peptic ulcer disease, on steroids or anticoagulants should also be given a gastric protectant while taking NSAID
 - o Impaired renal function is a potentially serious side effect from any NSAID. It is more likely in patients with previous impaired renal function and those with dehydration. NSAIDs need to be used with care in the palliative care setting. It is suggested that renal function is checked when NSAIDs are commenced and rechecked after two weeks
 - o Selective COX-2 inhibitors cause less gastric side effects
 - o Ketorolac should be reserved for severe pain not responding to other drugs
 - o Nimesulide is not recommended due to liver toxicity
 - o Bronchospasm is possible in patients who are sensitive to NSAID

<i>Drug</i>	<i>Duration of action</i>	<i>Dose (child)</i>	<i>Dose (adult)</i>	<i>Frequency</i>	<i>Route</i>	<i>Maximum dose per day</i>
Ibuprofen	8hrs	6-10mg/kg/dose	400-800mg	TDS	PO	2400mg
Diclofenac	8hrs	2-5mg/kd/day	50mg	TDS	PO/SC/IM	150mg
Naproxen	8-12hrs	5-7mg/kg/dose	250-500mg	BD	PO	1000mg
Meloxicam	24hrs		7.5-15mg	OD	PO	15mg
Ketorolac	6hrs	0.5-0.6mg/kg	10-30mg	TDS	PO/SC/IV	90mg

Opioid Analgesics

These are divided into weak opioids (Step 2) and strong opioids (Step 3). All opioids have a similar spectrum of action and cause similar side effects, particularly constipation and sometimes nausea and vomiting. Opioids should therefore normally be prescribed with a laxative and with anti-emetics if nausea occurs.

Weak Opioids (Not used in Two Steps Ladder)

A) Codeine

- Codeine is a pro-drug that requires an enzyme for breakdown to morphine for pain relief. About 10% people lack this enzyme and so codeine will be ineffective in them
- The recommended adult dose of codeine for pain relief is 15 mg to 60 mg every 4 to 6 hours as required, not to exceed 240 mg in one day
- 60mg oral codeine is equianalgesic to 10mg oral morphine
- Not preferred in pediatric patients

B) Tramadol

- The recommended dose of Tramadol is 50-100 mg (immediate release tablets) every 4-6 hours for pain
- In pediatric age- 1-2 mg/kg/dose 4-6 hrly max 50-100mg
- The maximum dose is 400 mg/day
- 50 mg of oral Tramadol is equianalgesic to 10mg of oral Morphine (5:1). 100 mg IV Tramadol is equianalgesic 10 mg IV morphine (10:1)
- Tramadol can cause dizziness as well as nausea and constipation

Strong Opioids

A) Morphine

- Morphine is the drug of choice for management of moderate to severe pain. Internationally it is accepted as the 'gold standard' strong opioid in palliative care. It is effective by mouth, subcutaneously, IM and IV. It is relatively inexpensive and available in Nepal
- Starting dose for opioid-naïve patients is oral morphine 5mg immediate release every 4 hours
- If the patient's pain persists after the 4th dose, then the dose of morphine can be increased by 30-50%
- When the daily dose is found to control the pain adequately, Prolonged Release (PR) morphine can be substituted for immediate release morphine
- Morphine PR is given every 12 hourly
- How to calculate the dose of morphine PR: Add up all the morphine given in the past 24 hours. That gives the total dose required in 24 hours. Then divide by 2 to give the 12 hourly dose. E.g. morphine 10mg given every 4 hours = 6x10mg in 24 hours = 60mg in 24 hours = 30mg every 12 hours. The dose of morphine PR is 30mg twice daily

- If a patient experiences pain between doses of morphine a further dose can be given. The extra dose is calculated as 1/6 of the total morphine taken in 24 hours
- Parenteral morphine (IM/SC/IV) is twice as potent as oral morphine. So oral morphine 10mg is equivalent to IM/SC/IV morphine 5mg. Therefore if changing from oral to SC/IM/IV morphine, divide the total 24 hour morphine taken by 2. (e.g. morphine 60mg orally given in 24 hours; SC dose = 30mg/24 hours)
- Pediatric dose: 0.2 to 0.3 mg /kg (10-15mg) initial dose, 4hrly PO/SL and IV/SC 0.1mg/kg
- Side effects of morphine include Constipation, Nausea, Vomiting, Sedation, Dry mouth, Sweating, Hallucinations, Myoclonus, Urinary retention, Pruritus, Hyperalgesia etc.
- Constipation is the most common side effect. *The hand that writes opioids should also write laxatives*. Morphine reduces gastrointestinal motility and secretion leading to constipation. A stimulant laxative like bisacodyl, reduces the ring contraction and facilitate propulsive activity
- Sedation and nausea usually resolve after a few days. A patient will need to be reassured and given an antiemetic if they experience nausea
- Physical dependence may develop but drug addiction with morphine in patients with palliative care is very rare
- Withdrawal symptoms when morphine is stopped or the dose is reduced are due to physical dependence. Therefore the morphine dose should only be reduced slowly whilst the patient adjusts to coming off morphine
- Respiratory depression is a very rare side effect in pain management when morphine is correctly titrated in palliative care. Consider using Naloxone only if conservative measures failed like tactile stimulations show no effect. Naloxone (1-2 mcg/kg max 0.8mg IV 2-3 min interval until response) is the antidote if respiratory depression develops. Dilute 400microgram (1amp) in 9ml normal saline and give 2.5ml (100microgram) IV every 1-2 minutes titrating response
- In case of urinary retention, consider bethanechol 90.2mg/kg (max 10 mg) PO 8hrly and bladder catheterization
- Consider clonazepam/ baclofen for myoclonus
- The following measures can be taken in case of pruritus
 - Ondansetron 0.15mg/kg PO/IV 8hrly
 - Nalbuphine 0.01-0.02 mg/kg(max 1.5 mg) 6hrly
 - Opioid antagonists: naloxone and naltrexone
 - Antihistaminic are not effective

- To manage Hyperalgesia, adjuvant analgesics should be considered for pain to allow potential opioid reduction

B) Fentanyl

- Fentanyl is the other strong opioid available in Nepal. It can be given by injection, but in palliative care it is normally given by a transdermal patch. Transdermal fentanyl should only be used for specific indications as it is very expensive
- Fentanyl is indicated if a patient cannot take oral medication
- It is also indicated in patients with renal impairment as fentanyl is less cumulative than morphine in renal impairment
- It is not possible to titrate a patient directly onto an appropriate dose of fentanyl. The patient should be stabilized on morphine first and then the correct amount of fentanyl calculated and the correct size of patch used
- A fentanyl 25mcg per hour patch is approximately equivalent to morphine 90mg over 24 hours. Fentanyl 50mcg per hour is approximately equal to 180mg morphine over 24 hours
- For patients receiving morphine 60–135mg in 24 hours a fentanyl 25 mcg per hour patch should be used. Those on 135–225mg morphine should receive a fentanyl 50 mcg per hour patch
- A fentanyl patch when applied lasts for three days after which it should be removed and replaced
- A fentanyl patch should be applied to clean, intact and hairless skin e.g. upper chest or abdomen, upper arms or thighs. The site should be altered at each patch change
- Transdermal fentanyl has complex pharmacokinetics. It takes a long time for blood concentration to reach therapeutic levels when the first patch is applied and a long time for concentration to fall when a patch is removed. Therefore when changing from morphine to fentanyl:
 - o If using immediate release oral morphine (or 4hourly injections), give two more doses of morphine after the first fentanyl patch is applied
 - o If using morphine PR, apply the patch as the final dose of morphine PR is given
 - o If morphine is being given by syringe driver then the syringe driver should be continued for 12 hours after the first fentanyl patch is applied
- If a patient is being changed from fentanyl to morphine

- o The fentanyl patch should be removed 12 hours before the first dose of morphine is given
- Pediatric dose: IV/SC 0.5 to 1 mcg/kg(max 25-50mcg/hr) continuous or half hour interval

Adjuvant Analgesics

Adjuvant analgesics are medications not typically used for pain relief but they are effective for specific types of pain, notably bone and neuropathic pain. Primary among these agents are:

A) Steroids

Steroids are used when pain is caused by pressure e.g. stretched liver capsule, raised intracranial pressure, Pancoast tumor etc.

- o **Dexamethasone** 8-16mg per day in a single dose before 12 noon
 - reduce dose by 2mg per day after 3 days if effective
 - stop the steroids after five days if there is no response

B) Antidepressants

Antidepressants are used for neuropathic pain

- o **Amitriptyline** 10-75mg at night
 - start at the lowest dose
 - increase every 2-3 days until pain controlled or side effects limit its use

C) Anticonvulsants

Anticonvulsants are used for neuropathic pain

- o **Gabapentin** Start 300mg at night
 - increase by 300mg every 2-3 days (300mg at night >> 300mg bd>> 300mg tds>> 600mg bdetc)
 - maximum dose 2400mg but if no benefit after 900mg it is unlikely that it will be effective
- o **Pregabalin** start at a dose of 50 mg three times daily or 75 mg twice daily
 - doses greater than 300 mg/day have not consistently shown additional benefit for the treatment of neuropathic pain conditions
 - caution – renal impairment

D) Bisphosphonates

Bisphosphonates are used for pain due to metastasis to the bone – particularly in breast cancer, prostate cancer or myeloma

- o **Zoledronic acid** 4mg IV every month

Adjuvant and route	Dose and administration	Side effects
Corticosteroids NB – For appetite stimulation lower doses are used (e.g. Prednisolone 10mg)		
Prednisone	20-60 mg in the morning, orally for 3 days and then reduce. Stop after 5 days if no benefit	Hyperglycaemia, agitation, psychosis, myopathy, gastrointestinal bleeding
Dexamethasone	Adults: 8 - 16 mg in the morning, orally/IV/SC, for 3 days then reduce. Stop after 5 days if no benefit	
Tricyclic antidepressants		
Amitriptyline	Adults: 10- 75mg (maximum dose 100mg)/day, orally at bed time. Start at 10mg at night and increase every 2-3 days until pain controlled or side effects are intolerable.	Drowsiness initially, postural hypotension, life-threatening cardiac toxicity with overdose
Anticonvulsants		
Valproate	100mg bd increasing to 300mg bd increase every 2-3 days until pain is controlled. Maximum 2000mg/day	Causes drowsiness Do not use in patients with liver disease.
Gabapentin	300mg at bed time. After 3 days increase to 300mg bd then by 300mg a day every 2-3 days until pain controlled or side effects are intolerable. Maximum dose 2400mg/day, although it is unlikely to work if no effect on the pain with 900mg a day.	Drowsiness initially with each increase of dose. Perioral numbness Reduce dose in renal failure.

Chart - Adjuvant analgesic summary

Non Pharmacological Approach

Various non-pharmacological approaches can be used for pain management. Some are listed below–

- Radiotherapy
- Surgery
- Music therapy
- Yoga, meditation
- Cutaneous stimulation –TENS
- Acupuncture
- Psychotherapy
- Counseling
- Hypnosis
- Physiotherapy

Radiotherapy

Radiotherapy has specific and critical efficacy in the pain caused by bone metastases and by tumors compressing neural structures such as spinal nerve roots.

Radiation should be started as soon as possible (better within 48 hours of compression) to relieve pain and to retain neurologic function (before paresis and bowel / bladder dysfunction is permanent).

It should also be used for primary musculoskeletal malignancies associated pain.

Radiotherapy is also indicated for:

- Pain management in lung cancer with chest wall extension
- Pain (headache) due to primary or secondary brain tumors
- Esophageal and other cancers causing painful swallowing
- Rectal cancer causing painful defecation

Surgery

Palliative surgery can relieve pain from obstruction of hollow organs or from pathologic fractures

NAPCare Executive Committee (2017)

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