

Pain Management in Cancer Patients

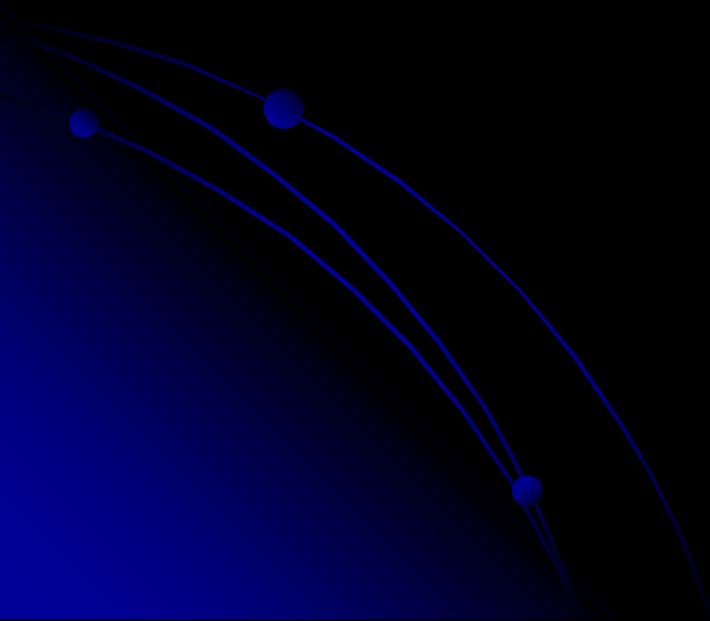
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台大醫院雲林分院

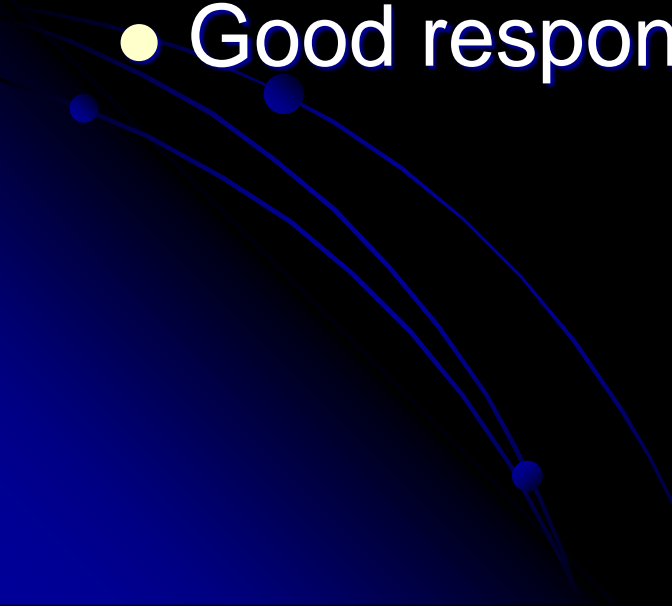
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Types of Pain

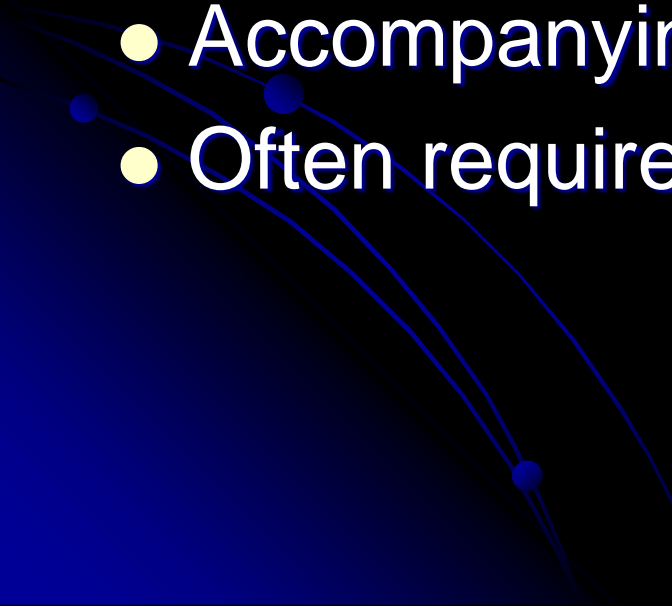
- Somatic pain
- Visceral pain
- Neuropathic pain



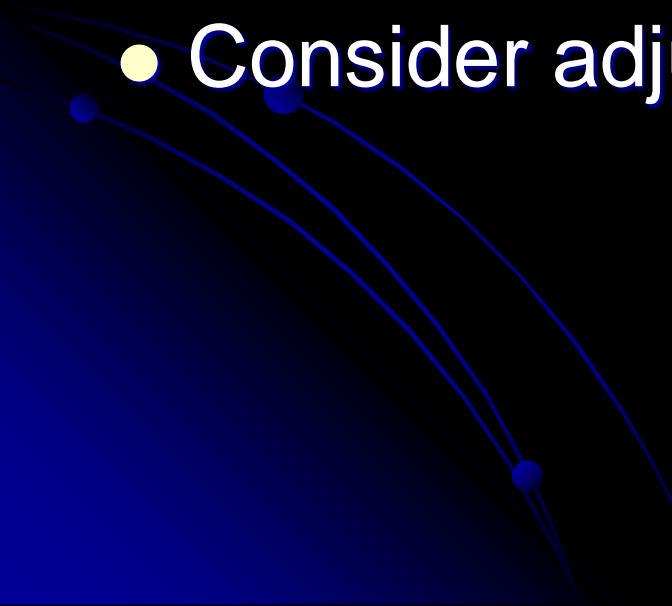
Somatic Pain

- Injury/damage to skin, muscle, or bone
 - Bone metastasis
 - Well-localized, sharp, stabbing, or throbbing
 - Good response to treatment
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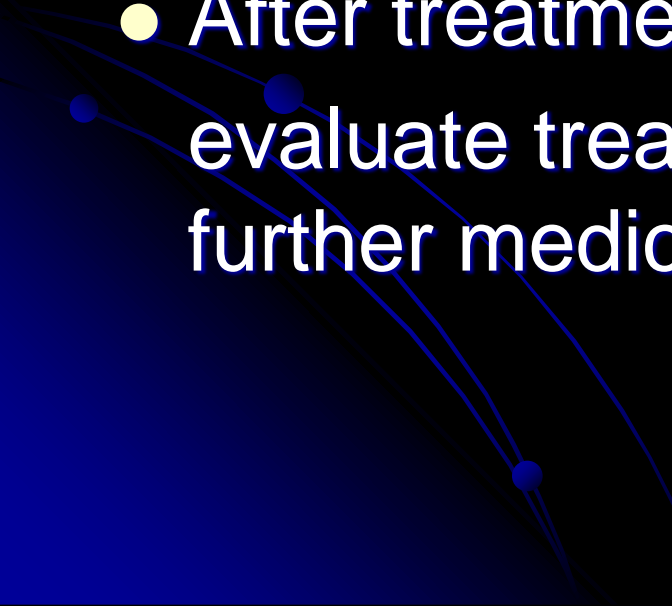
Visceral Pain

- Organ injury/damage, hollow-organ obstruction, smooth-muscle spasm
 - Poorly localized
 - Referred pain
 - Accompanying autonomic symptoms
 - Often requires opioids
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Neuropathic Pain

- Injury/damage to neural structures
 - Dysesthesia
 - Burning, tingling, shock-like
 - Allodynia, hyperalgesia, hypalgesia
 - Consider adjuvants
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Pain Evaluation

- Before treatment:
evaluate the intensity, type, location, etiology, temporal factors, psychological issues and current analgesics
 - After treatment
evaluate treatment response and decide further medication
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Pain Intensity Evaluation

- Numerical



- Categorical



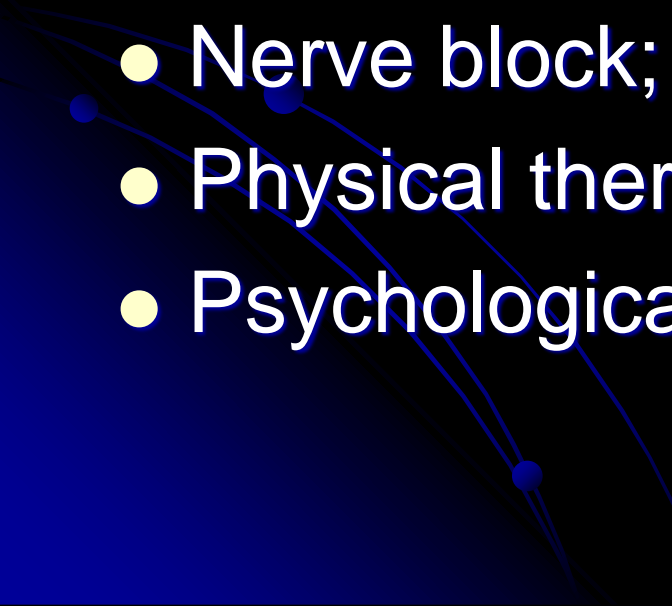
- Wong-Baker Faces Pain Rating Scale



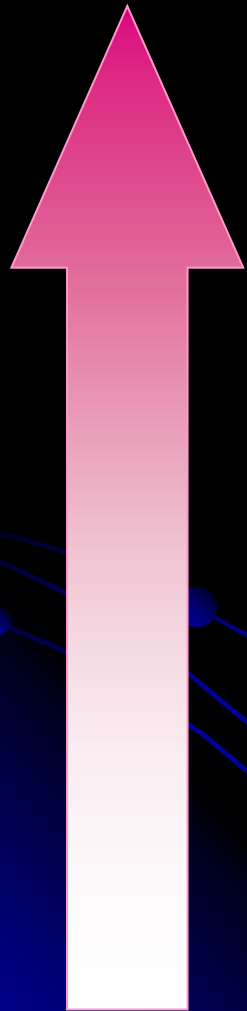
Before Pain Management

- Remove exacerbating factors if possible
 1. Catheters
 2. Wound management
- Exclude oncological emergencies
 1. Bone fracture
 2. Brain metastasis; ICP
 3. Spinal cord compression
 4. Perforated organs

Pain Management

- Pharmacotherapy
 - Analgesics
 - Adjuvant drugs
 - Palliative radiotherapy
 - Nerve block; nerve stimulation
 - Physical therapy
 - Psychological therapy
- 

WHO Analgesic Ladder



Severe

Strong Opioids ± Non-Opioids ± Adjuvant

morphine, fentanyl, meperidine

Moderate

Weak Opioids ± Non-Opioids ± Adjuvant

codeine, tramadol, buprenorphine, propoxyphene

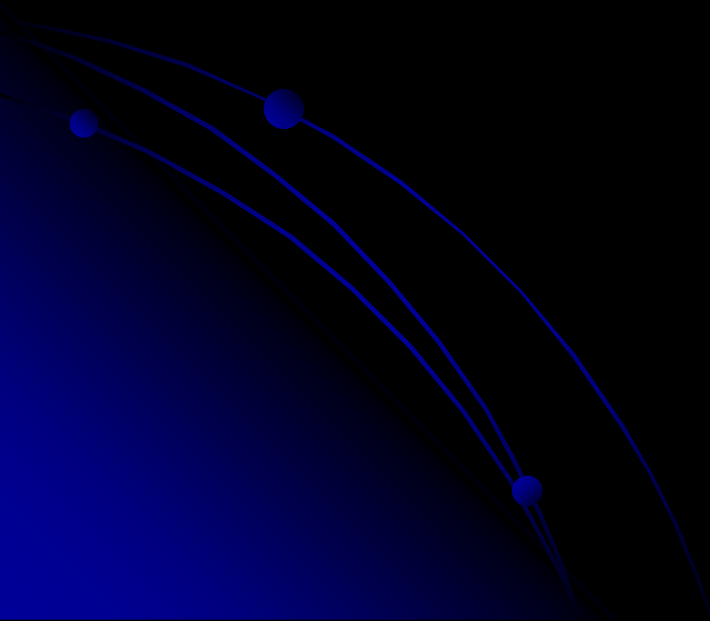
Mild

Non-Opioids ± Adjuvant

aspirin, acetaminophen, NSAIDs, COX-2 inhibitor

Non-Opioids

- Ceiling effects
- Most used in mild pain and somatic pain



Non-Opioids

- Aspirin

generally not used for analgesia now due to side effects

- Acetaminophen (Panadol® 500mg)

no anti-inflammation effect

low side effect



Non-Opioids

- NSAIDs (Acemet[®], Naposin[®], Votan SR[®], Lacoixa SR[®], Reliflex[®], Surgam[®])

side effect: peptic ulcers; anti-platelet;
renal function impairment

avoid IV use

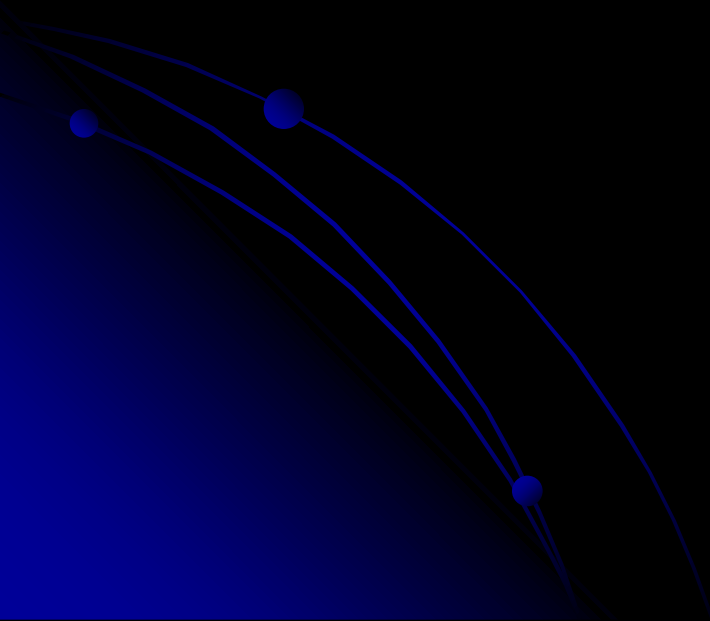
- COX-2 inhibitors (Celebrex[®], Mobic[®])

mostly not covered by NHI

side effects: CAD?

Weak Opioids

- Still have ceiling effects
- May interfere with effects of typical opioids (partial agonist, mixed agonist/antagonist)



Weak Opioids

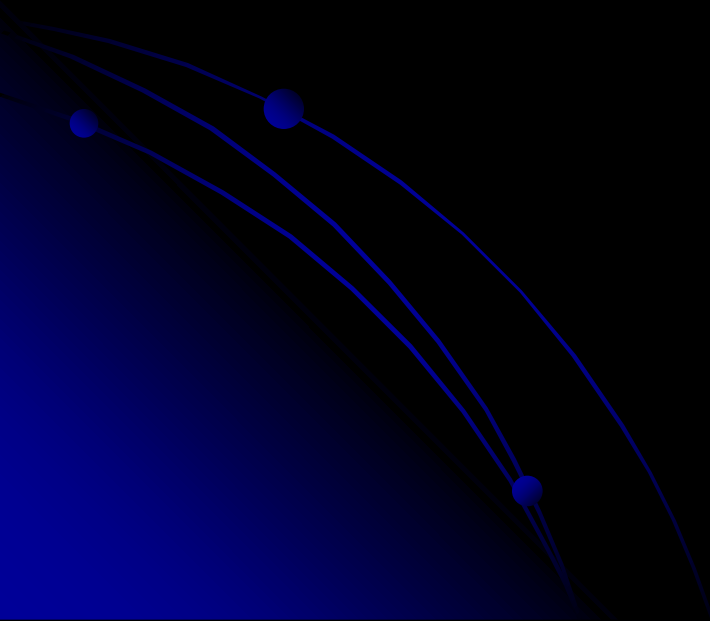
- Codeine (15mg, 30mg)
low analgesic effect
q4-6h (up to 2# q4h)
side effect sooner than analgesia
- Tramadol (Tramal®)
dual effect: μ morphine receptor agonist and
monoamine reuptake inhibition
minimal respiratory suppression
Maximal: 400 mg/day
oral (Tramal Retard® 100mg): q12h (up to 2# bid)
IV (100mg): q6h (up to 1amp q6h)

Weak Opioids

- Buprenorphine (Temgesic[®])
mixed agonist/antagonist
convenient sublingual use
avoid combination with typical opioids
- Propoxyphene (Depain X[®] : also include 625mg acetaminophen)
CNS depression
weak analgesic effect
no evidence of superiority over codeine
avoid long-term use
Maximal: 1# q4h

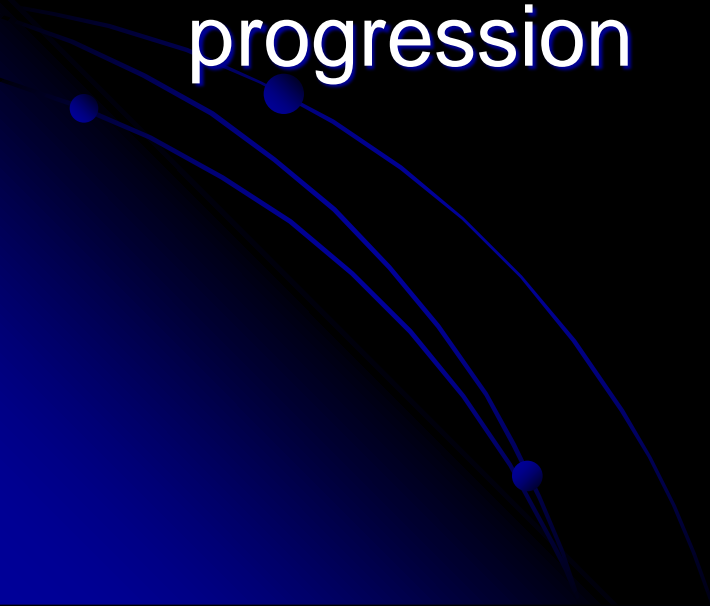
Weak Opioids

- Ultracet[®] (Acetaminopen + Tramal)
 - Tramal 37.5 mg
 - Acetaminophen 325 mg
 - Dose: 1~2# q6h po; max: 8# /day




Strong Opioids

- No ceiling effects
- Tolerance
clinically insignificant;
dose increase parallels disease
progression



Strong Opioids

- Physical dependence
avoid sudden discontinuation, partial agonists
and mixed agonist/antagonists
 - Psychological dependence (addiction)
seldom develops in patients taking opioids for
pain relief
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Strong Opioids

- Morphine HCl (oral 10mg, solution 0.1%, 0.5%, 1%)
onset: 30 mins
peak: 60 mins
interval: q4h
- Morphine sulfate (MST[®] 60mg, morphine sulfate SR 30mg)
onset: 1hr
interval: q12h
- Fentanyl (Durogesic[®] 1.25mg, 2.5mg, 5mg/patch)
onset: 6-12 hrs
interval: q72h

Fentanyl


- Dosage proportional to the size
- 1.25 mg/patch → 12.5 µg/hr
2.5 mg/patch → 25 µg/hr
5 mg/patch → 50 µg/hr



Strong Opioids

- Meperidine (Demerol[®])
short-acting
neurotoxic metabolite: norperidine
euphoria → addiction
avoid long-term use

Around-The-Clock with Breakthrough Dose as Needed

- Around-the-clock: long-acting medication
 - Breakthrough dose: rapid onset, short-acting, easy-to-use medication
 - Breakthrough dose = 10-20% of daily ATC daily dose
 - Target: breakthrough ≤ 3 /day, severity < 4
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Administration Route

- IV administration used only when other methods are not feasible

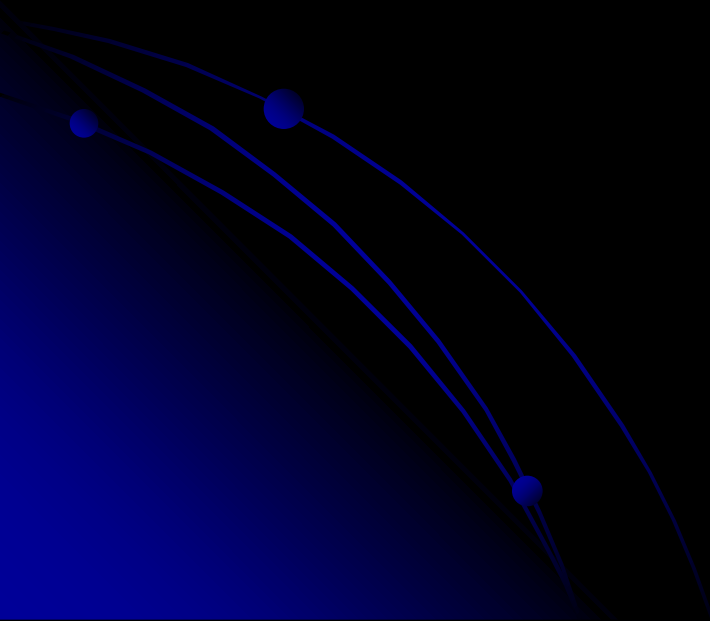
Oral : IV

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30mg : 10mg

Patients Not under Current Opioids

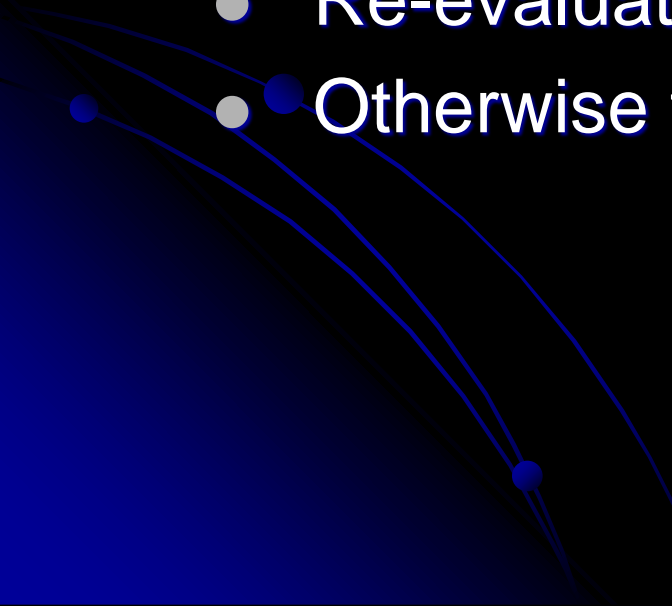
- Pain 1-3
 - acetaminophen, NSAIDs or COX-2 inhibitors
 - weak opioids
 - re-evaluation in 24-72 hours



Patients Not under Current Opioids

- Pain > 4: can still combine with non-opioids
 - Oral 5-15 mg (IV 1-3 mg) short-acting morphine
 - Re-evaluate in 60 mins (IV 15 mins)
 - If pain > 7, double dose
 - If pain 4-6, repeat the same dose
 - If pain <3, prn use with previous dose
 - Calculate daily dose, then decide
 - Around-the-clock dose
 - (ex. divided in 2 if use MST q12h),
 - Breakthrough dose (10-20% of ATC dose q1h prn)

Patients under Current Opioids

- Pain 1-3: current breakthrough dose prn
 - Pain > 4
 - Calculate previous breakthrough dose then add 50-100%
 - Re-evaluate in 60 mins (IV 15 mins)
 - Otherwise the same as the previous slides
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Dose Conversion to Durogesic

Durogesic	Morphine oral (mg/day)	Morphine IV (mg/day)
2.5 mg/patch (25 µg/hr)	60	20
5 mg/patch (50 µg/hr)	120	40












Current long-acting morphine in NTUH:

MST 60mg

Morphine sulfate SR 30mg

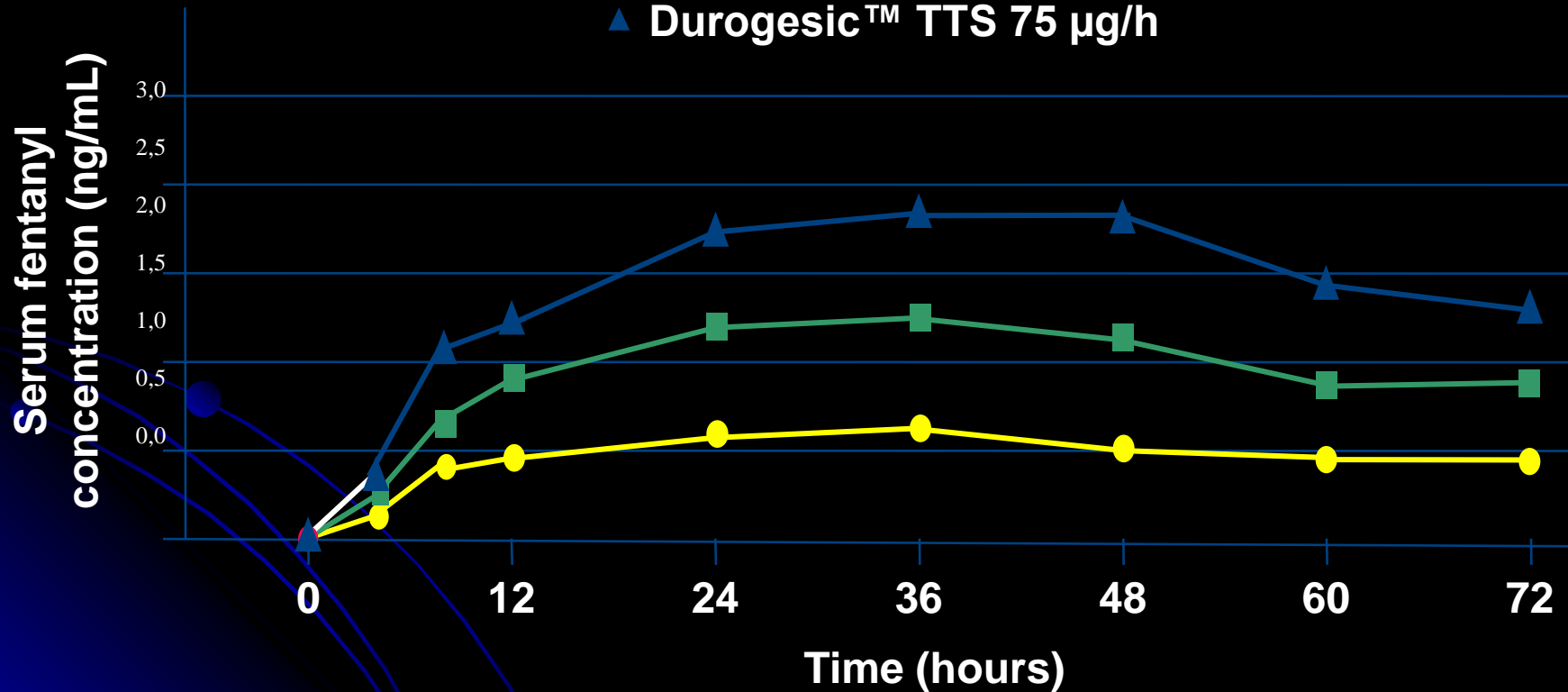
Dose Conversion to Durogesic

Equivalent Dose Table

		<i>If Pain Persists...</i>   25 µg/h Q3D	Equivalent Dose
Morphine	 10mg 4# per day	 10mg 6# per day	60 mg/day
Ultracet	 4# per day	 6# ~ 8# per day	6 tablets/day
Tramadol	 50mg 4# per day	 50mg 6# ~ 8# per day	300 mg/day
Codeine	 30mg 4# per day	 30mg 6# ~ 8# per day	200 mg/day

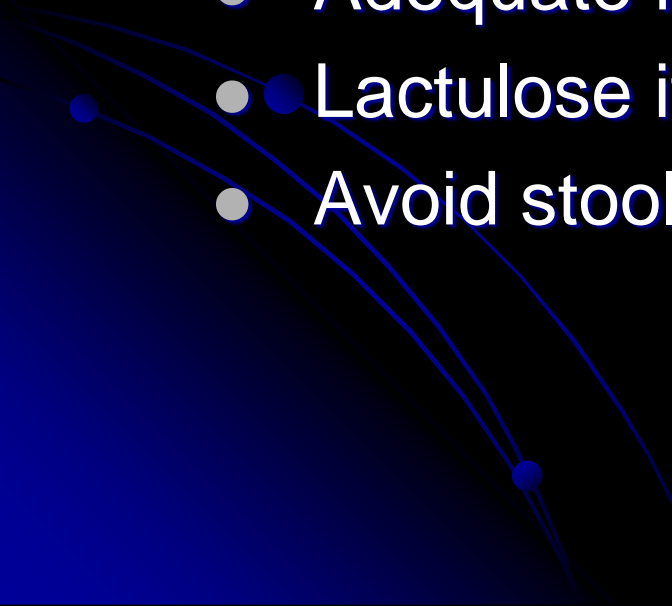
Pharmacokinetics of Durogesic

- Durogesic™ TTS 25 µg/h
- Durogesic™ TTS 50 µg/h
- ▲ Durogesic™ TTS 75 µg/h



Source: Reilly et al.: Abstracts: 7th World Congress on Pain, 1993, Abstract 841 (N91460)

Side Effects of Opioids

- Constipation
 - No tolerance
 - Start stool softeners (MgO) and bowel stimulants (Dulcolax[®]) once start with opioids
 - Adequate fluid intake
 - Lactulose if refractory
 - Avoid stool-forming agents (Normacol[®])
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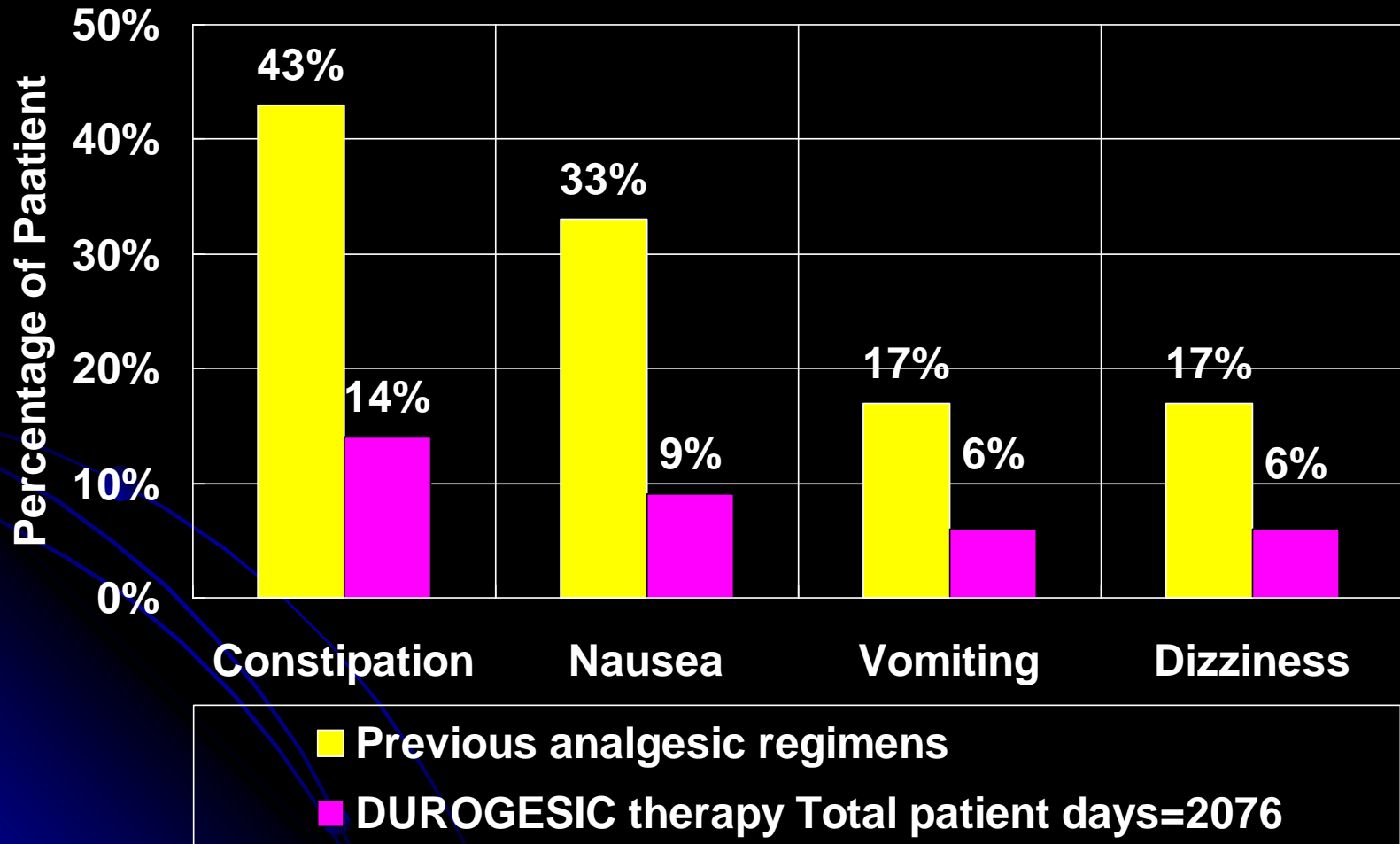
Side Effects of Opioids

- Nausea and vomiting
 - Start tolerance in one week
 - Antiemetics (Primperan[®], Motilium[®], Mopride[®]) when start with opioids or increase of dosage
- Respiratory suppression
 - Tolerance during dose titration
 - **Naloxone** (0.4mg/amp) reversal
0.1mg start, titration, q2-3mins repeat

Side Effects of Opioids

- Sedation and other neurological side effects (cognitive deficits, delirium, convulsions)
 - tolerance in one week
 - increase in patients with renal impairment
- Urine retention → medication control (Wecoli[®], Hytrin[®], Harnalidge[®])
- Pruritis → medication control

Adverse Effects of Durogesic



Adjuvant Medications for Specific Pain

- Pain associated with inflammation

NSAIDs

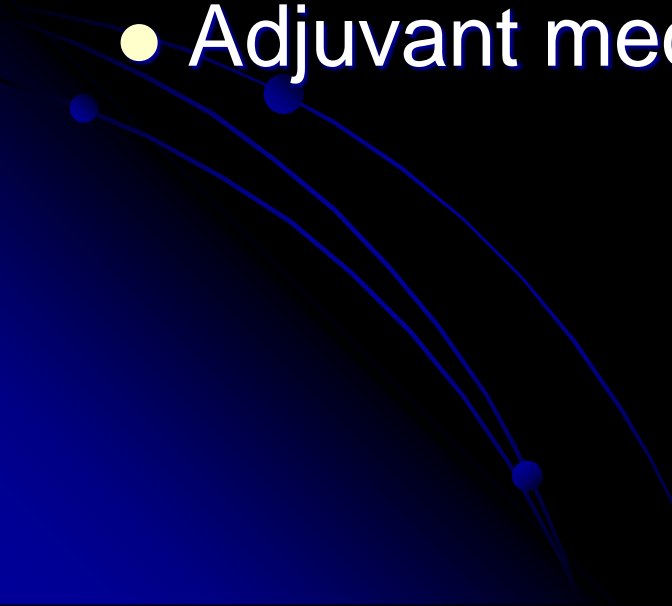
- Bone pain

NSAIDs, **bisphosphonates**, steroids


- Neuropathic pain

antidepressants, anticonvulsants, topical agents

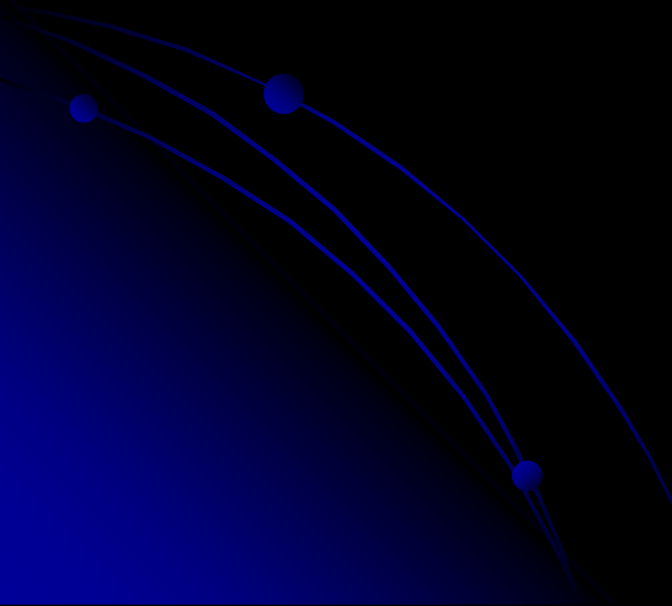
Take Home Message

- Always exclude emergent conditions first
 - Remove exacerbating factors if possible
 - Remember possible combination between non-opioids and opioids
 - Adjuvant medication for specific pains
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Take Home Message

- Good analgesic use
 - Around-the-clock
 - Breakthrough dose prn
 - Avoid long term use of IV NSAID, buprenorphine, propoxyphene, meperidine
 - Start side effect prevention on the start of opioid use
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Reference

- National Comprehensive Cancer Network (NCCN) clinical practice guidelines in oncology: adult cancer pain
 - 癌症疼痛處理指引, 國家衛生研究院, 2007
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THANKS FOR YOUR ATTENTION!

