PAIN IN THE ELDERLY

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Outline of presentation

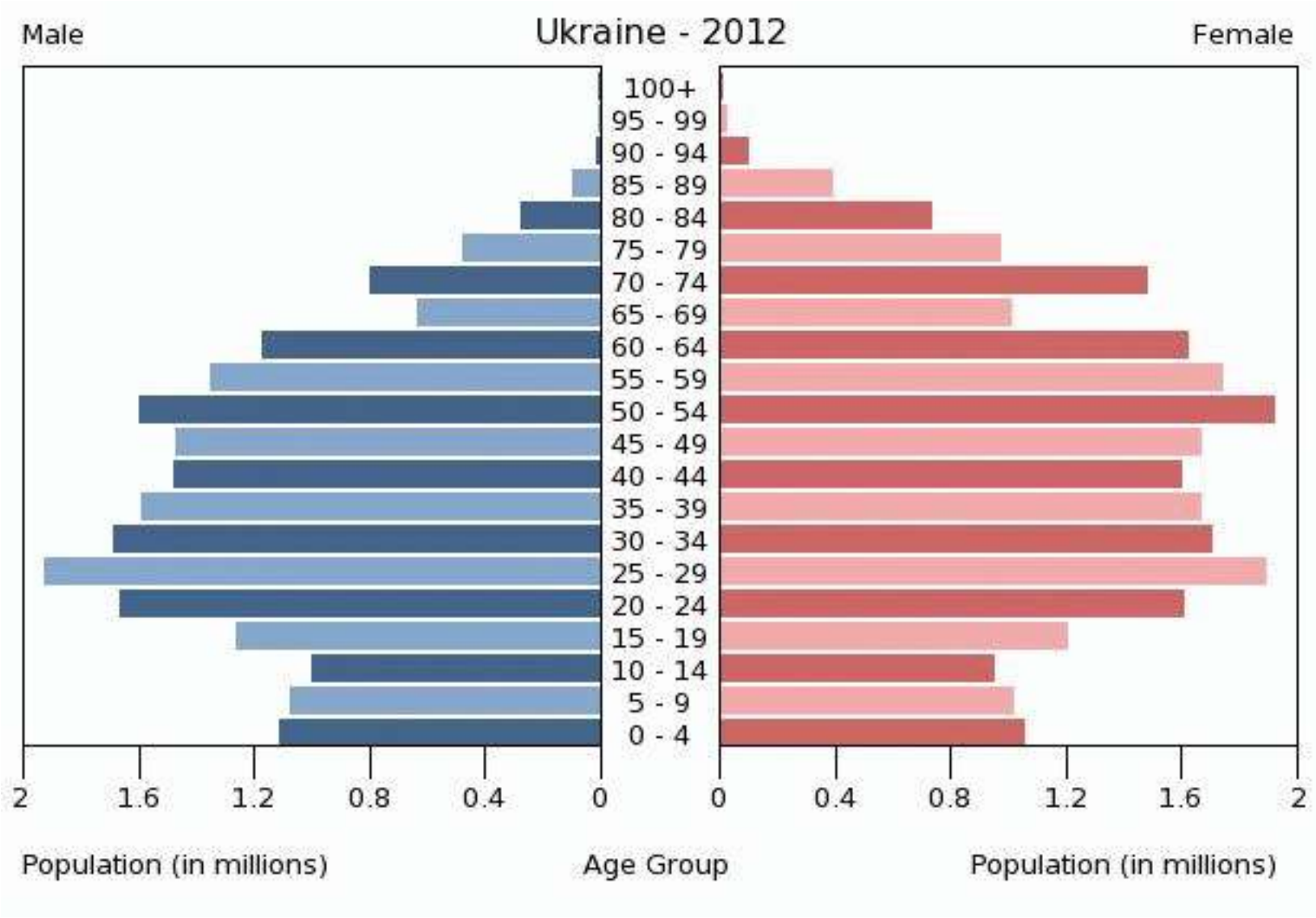
- The size of the problem
- Assessment of pain in the elderly
- Acute pain management
- Chronic pain management

What is elderly?

Defined as >65 years

Why the elderly matter

- Ageing population
- In USA 20% will be >65 by 2030
- 15% in Ukraine 2012
- Access to pain relief is a human right
- Increase in pain with age
- Pain is under-treated in the elderly
- Pain has negative effect on function and independence
- Cost to society


Male
Ukraine - 2012
Female
100+
95 - 99
90 - 94
85 - 89
80 - 84
75 - 79
70 - 74
65 - 69
60 - 64
55 - 59
50 - 54
45 - 49
40 - 44
35 - 39
30 - 34
25 - 29
20 - 24
15 - 19
10 - 14
5 - 9
0 - 4
2
1.6
1.2
0.8
0.4
0
0
0.4
0.8
1.2
1.6
2
Population (in millions)
Age Group
Population (in millions)

Incidence of pain in the elderly

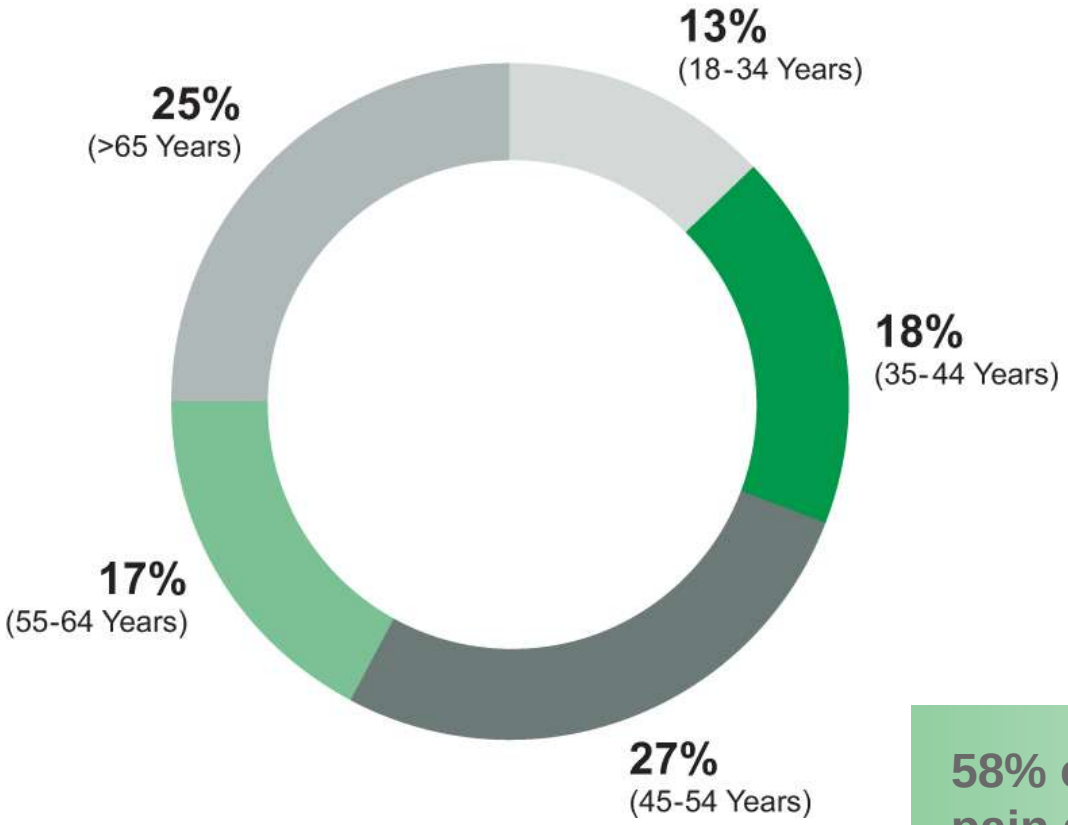
- 50% in age >65
- 65% in age >75

- NB often more than one pain
- Musculoskeletal is the commonest type

Figure 3. Percentage of nursing home residents with pain, by pain management strategy: 2004

NOTES: Special services refer to special programs for pain management. Appropriate pain management is receiving standing orders for pain medication or special services from a special program for pain management.
SOURCE: CDC/NCHS, National Nursing Home Survey, 2004.

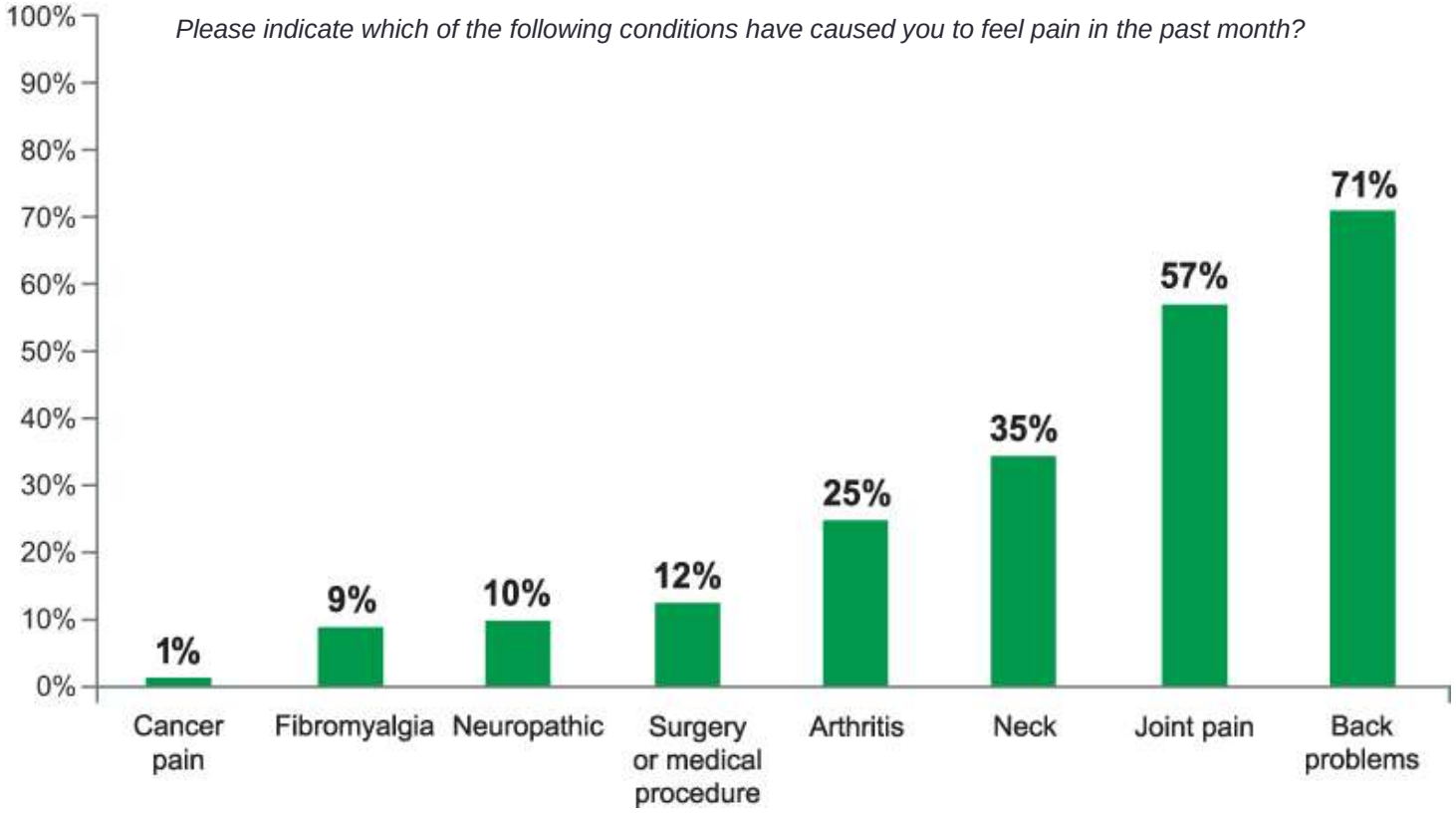
Pain Prevalence... according to age



58% of people with severe pain are 18-54 years old and therefore in employment age

Data on file: Consumer Health Science, Princton, NJ – EU NH WS 2008 www.chsinternational.com

Pain Prevalence… according to patient reported diagnosis



71% suffer from severe pain due to back pain followed by joint pain

Data on file: Consumer Health Science, Princton, NJ – EU NH WS 2008 www.chsinternational.com

Is Pain in the old different – no

- Pain is an unpleasant sensory and emotional experience
- Pain still has impact on mental health and physical functioning

Is it different - yes

- Under-reported and under-treated
- Increase in impaired cognitive function
- Dementia
- Change in physiology and drug handling
- More people in care homes
- NB very few studies in pain management specifically in the elderly

Why is it under treated? Patient factors

- Stoicism
- Don’t like to be nuisance
- On lots of drugs already
- Fear of side-effects and addiction

Why is it undertreated – medical factors

- ‘Old people don’t feel pain’
- Fear of over medication
- Fear of addiction
- Hospital and care home settings

Physiological changes with age that affect drug handling

- Hepatic metabolism
- Renal excretion
- Pharmacodynamic changes
- Distribution

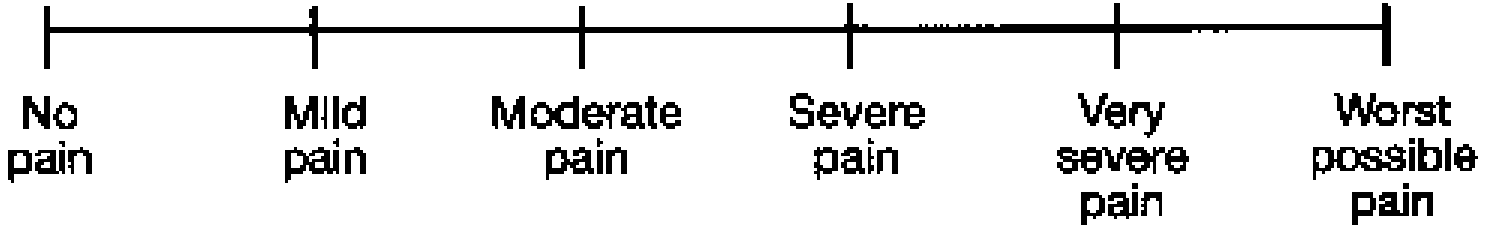
Managing pain starts with assessment

Assessment of pain

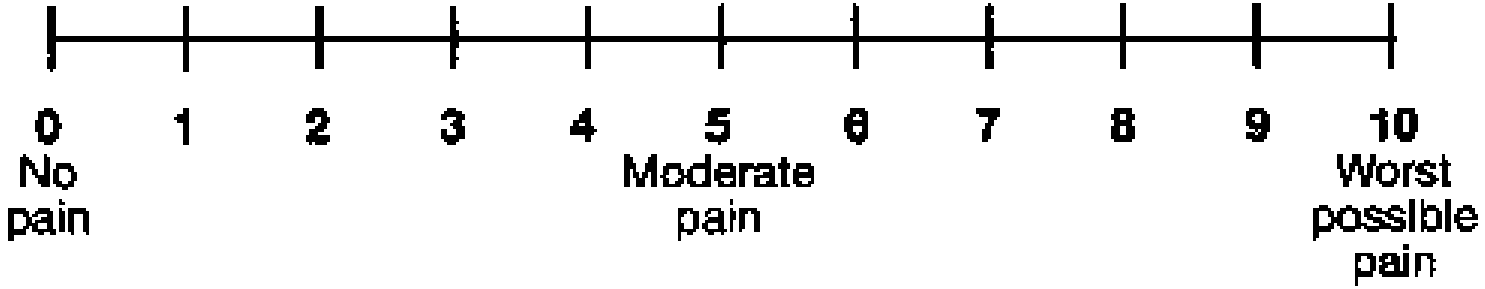
- Ask
- Observe
- Care!

- Numerical pain scores
- VAS
- Brief pain inventory
- Magill SF 36
- Visual scores
- Abbey score

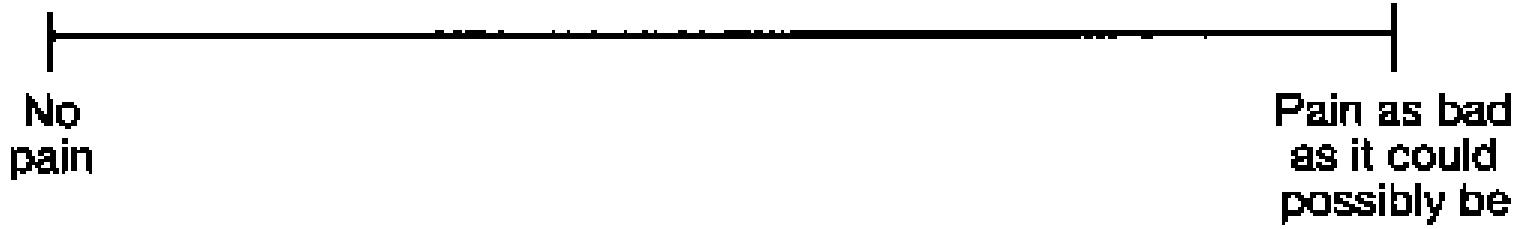
Measuring pain



0–10 Numeric Pain Intensity Scale[1]



Visual Analog Scale (VAS)[2]



Abbey Pain Scale

For measurement of pain in people with dementia who cannot verbalise.

How to use scale: While observing the resident, score questions 1 to 6

Name of resident: .....

Name and designation of person completing the scale: .....

Date: .....**Time:** .....

Latest pain relief given was.....**at** .....**hrs.**

Q1.	**Vocalisation** **eg. whimpering, groaning, crying** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q1	
Q2.	**Facial expression** **eg: looking tense, frowning grimacing, looking frightened** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q2	
Q3.	**Change in body language** **eg: fidgeting, rocking, guarding part of body, withdrawn** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q3	
Q4.	**Behavioural Change** **eg: increased confusion, refusing to eat, alteration in usual patterns** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q4	
Q5.	**Physiological change** **eg: temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q5	
Q6.	**Physical changes** **eg: skin tears, pressure areas, arthritis, contractures, previous injuries.** *Absent 0 Mild 1 Moderate 2 Severe 3*	Q6	

Add scores for 1 – 6 and record here ⇨ **Total Pain Score** ☐

Now tick the box that matches the Total Pain Score ⇨

0 – 2 No pain	3 – 7 Mild	8 – 13 Moderate	14+ Severe

Finally, tick the box which matches the type of pain ⇨

Chronic	Acute	Acute on Chronic

Dementia Care Australia Pty Ltd
Website: www.dementiacareaustralia.com

Abbey, J; De Bellis, A; Piller, N; Esterman, A; Giles, L; Parker, D and Lowcay, B.
Funded by the JH & JD Gunn Medical Research Foundation 1998 – 2002

Clinical classification of pain

- Acute
- Chronic
- Neuropathic
- Cancer related

Pain is multifactorial: The biopsychological model

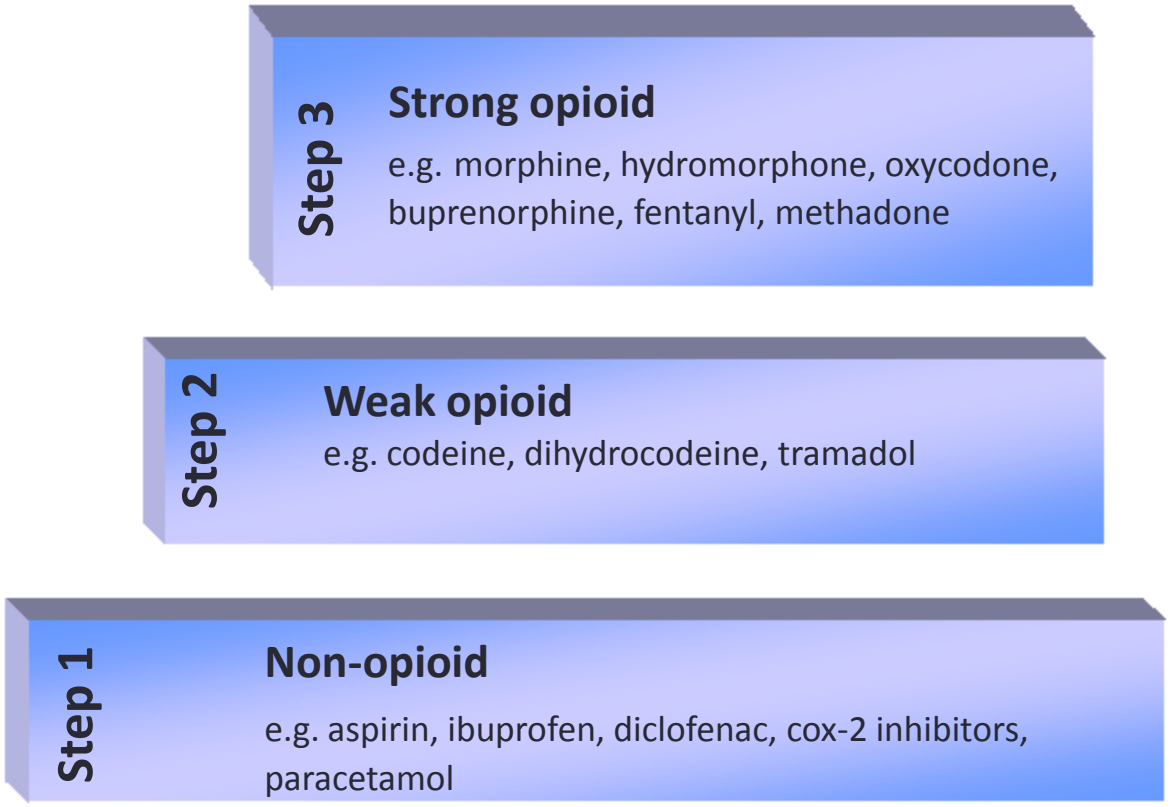
- Pain is a “bio psychosocial phenomenon, in which biological, psychological, and social factors dynamically interact to produce unique pain experiences across individuals”[1]

1. Edwards D *et al.* Pain Practice. 2006;6:242-53.
2. Gatchel RJ, *et al*. Psychol Bull. 2007;133:581-62
3. Carmona L, *et al*. Ann Rheum Dis. 2001;60:1040

Acute pain management

- By definition self-limiting
- Drugs are effective
- WHO ladder useful

WHO PAIN RELIEF LADDER



1. World Health Organization. Cancer pain relief: with a guide to opioid availability. 1996

Acute pain management

- Similar in all age groups
- Use the ladder
- NSAIDS may be used
- Watch renal function

- Post-operative pain
- Use of regional techniques

- Titration crucial (up and down)

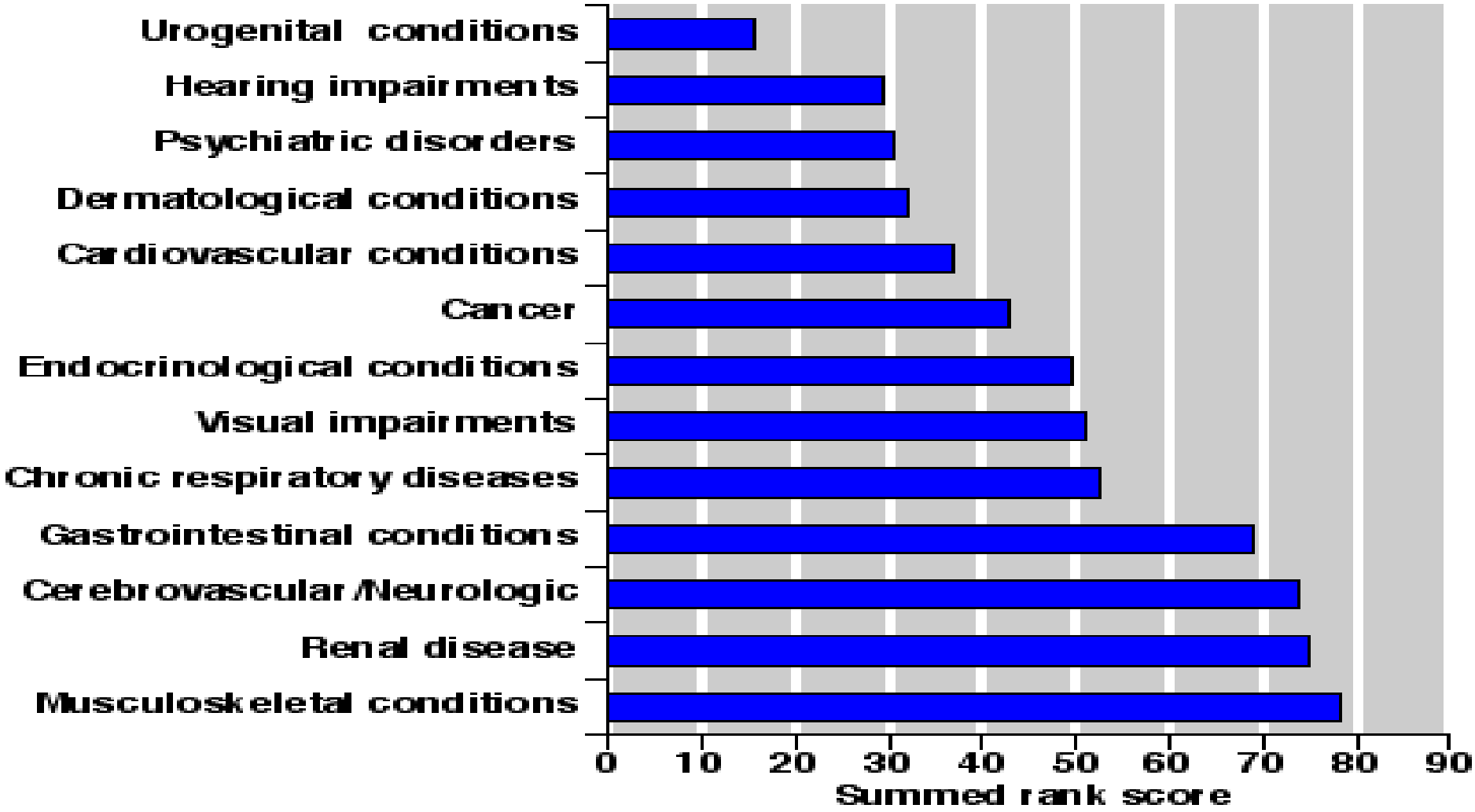
NSAIDS and Coxibs in the elderly

- Safe in the short-term

Chronic pain management- the challenge

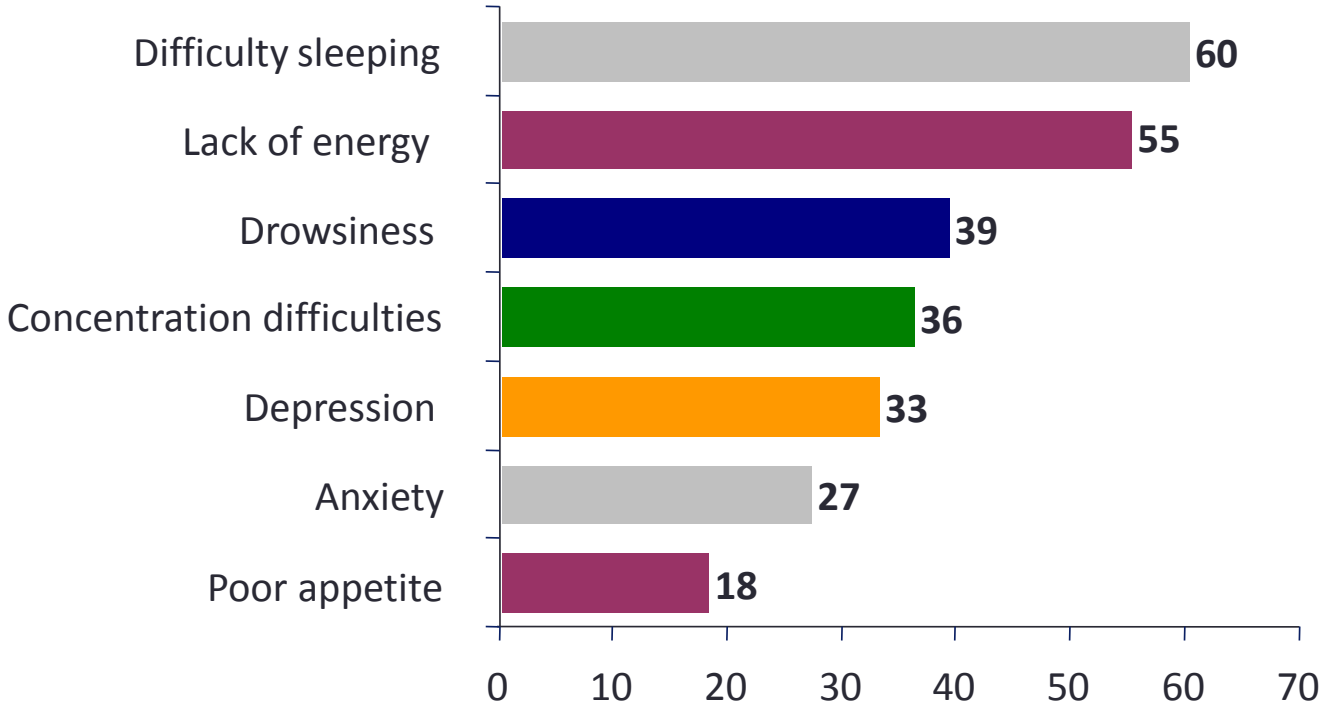
- Long-term strategies needed
- Education and management of expectation crucial
- Drugs not fully effective
- Adverse effects important

Impact on quality of life



Sprangers, 2000

Co-morbidity associated with chronic pain



% patients with moderate to very severe discomfort due to symptoms (n=126)

1. Meyer-Rosberg K *et al*. Eur J Pain 2001; 5: 379–389.

Chronic pain management

- Pharmacological
- Non-pharmacological

- NB Treat any treatable underlying cause
- NB Consider treating comorbidities

Pharmacological management

- WHO analgesic ladder
- Adjuvant drugs
- Topical preparations

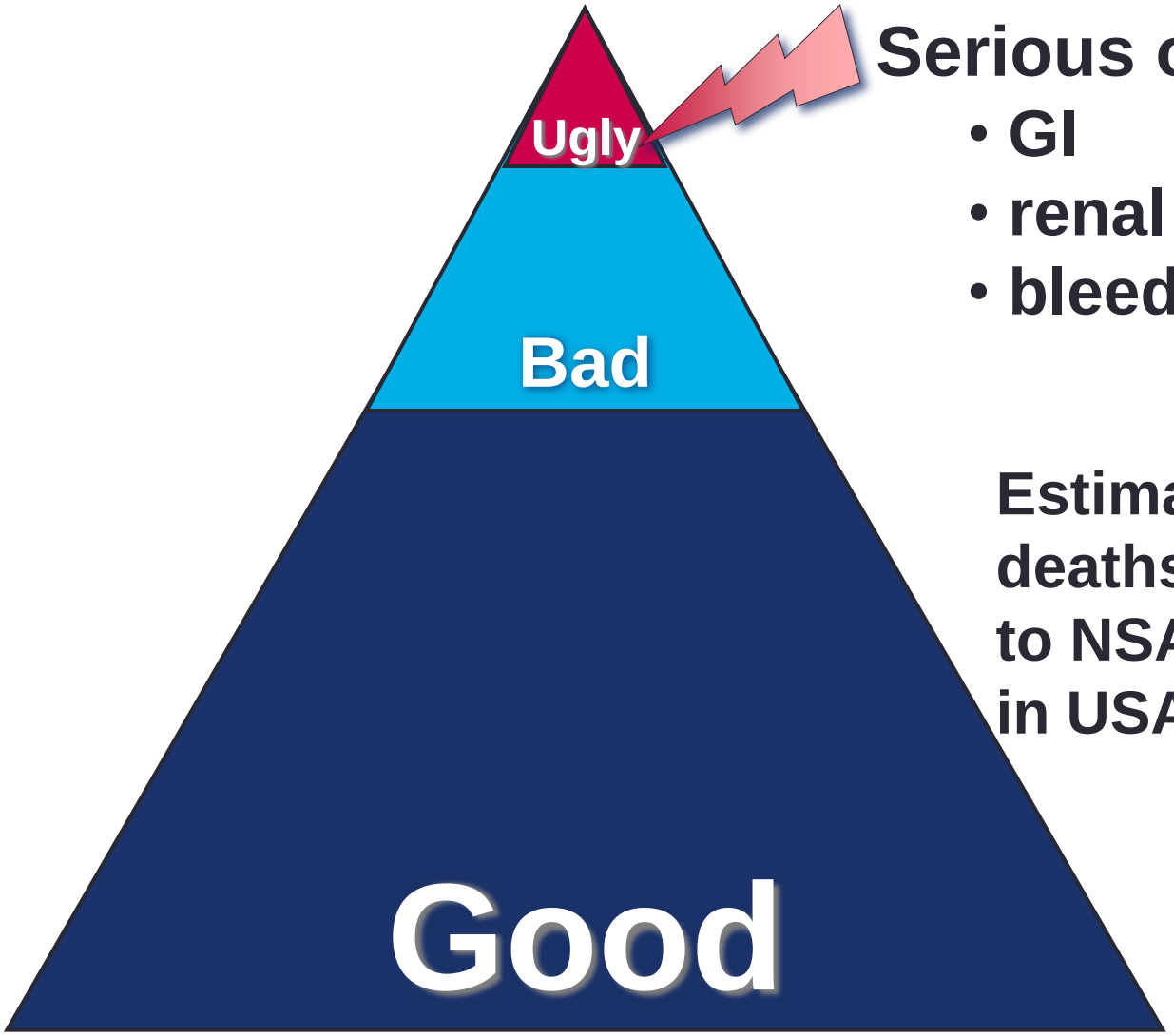
Pharmacological Treatments

- Conventional
  - NSAIDS
  - Paracetamol
  - COXII inhibitors
  - Tramadol
  - Opioids
- Unconventional
  - Anticonvulsants
  - Antidepressants

Pharmacology

- Paracetamol
- NSAIDS avoid if possible
- Codeine
- Tramadol
- Strong opioids

NSAIDs: efficacy versus safety



Serious outcomes

- GI
- renal
- bleeding

Estimated 16,500 deaths attributable to NSAIDs per year in USA[1,2]

Summary of Updated advice for all Selective COX-2 inhibitors (celecoxib,etoricoxib, valdecoxib and parecoxib)

Patients with established ischaemic heart disease or cerebrovascular disease should be switched to alternative treatment:

In addition, the existing contraindication for severe heart failure is now extended to include moderate heart failure NHYA class II-IV).

For all patients the balance of gastrointestinal and cardiovascular risk should be considered before prescribing a COX-2 inhibitor

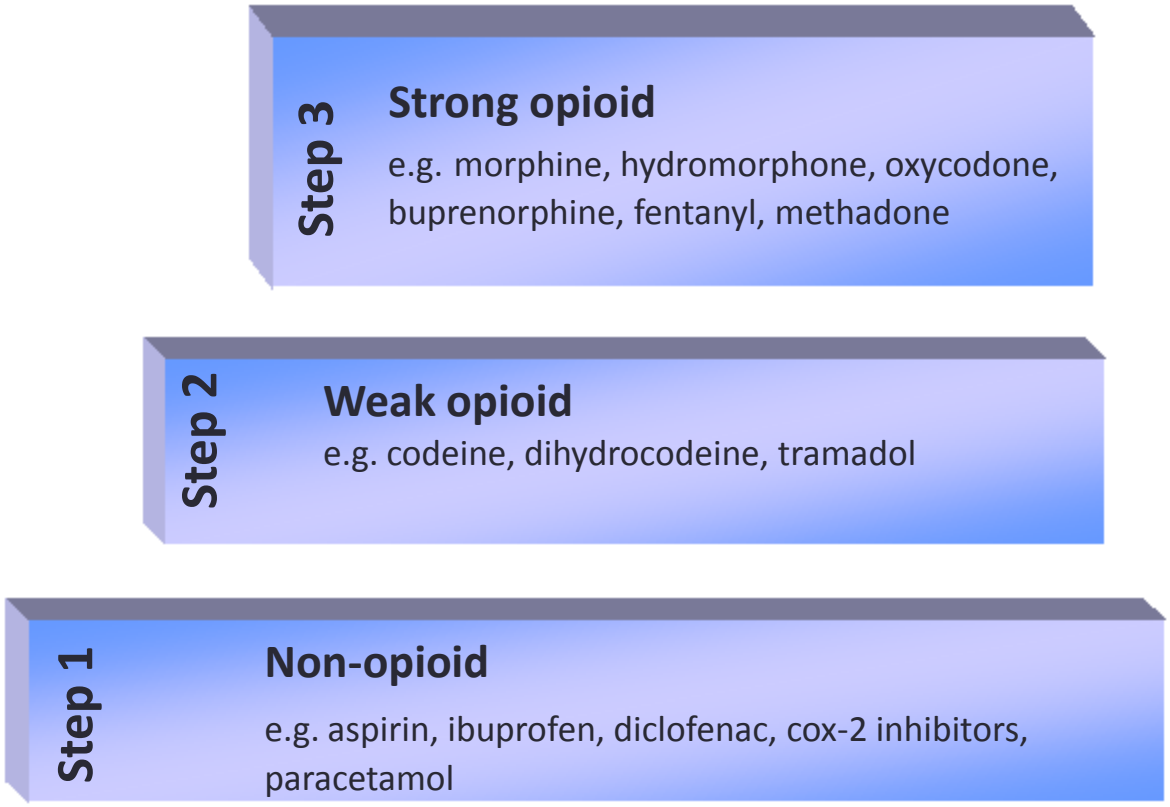
particularly for those with risk factors for heart disease and those taking low dose aspirin, for whom gastrointestinal benefit has not been clearly demonstrated.

The lowest effective dose of COX-2 inhibitor should be used for the shortest necessary period.

Periodic re-evaluation is recommended, especially for osteoarthritis patients who may only require intermittent treatment.

Gastroprotective agents should be considered for patients switched to nonselective NSAIDS

WHO PAIN RELIEF LADDER



1. World Health Organization. Cancer pain relief: with a guide to opioid availability. 1996

Opioids in chronic pain

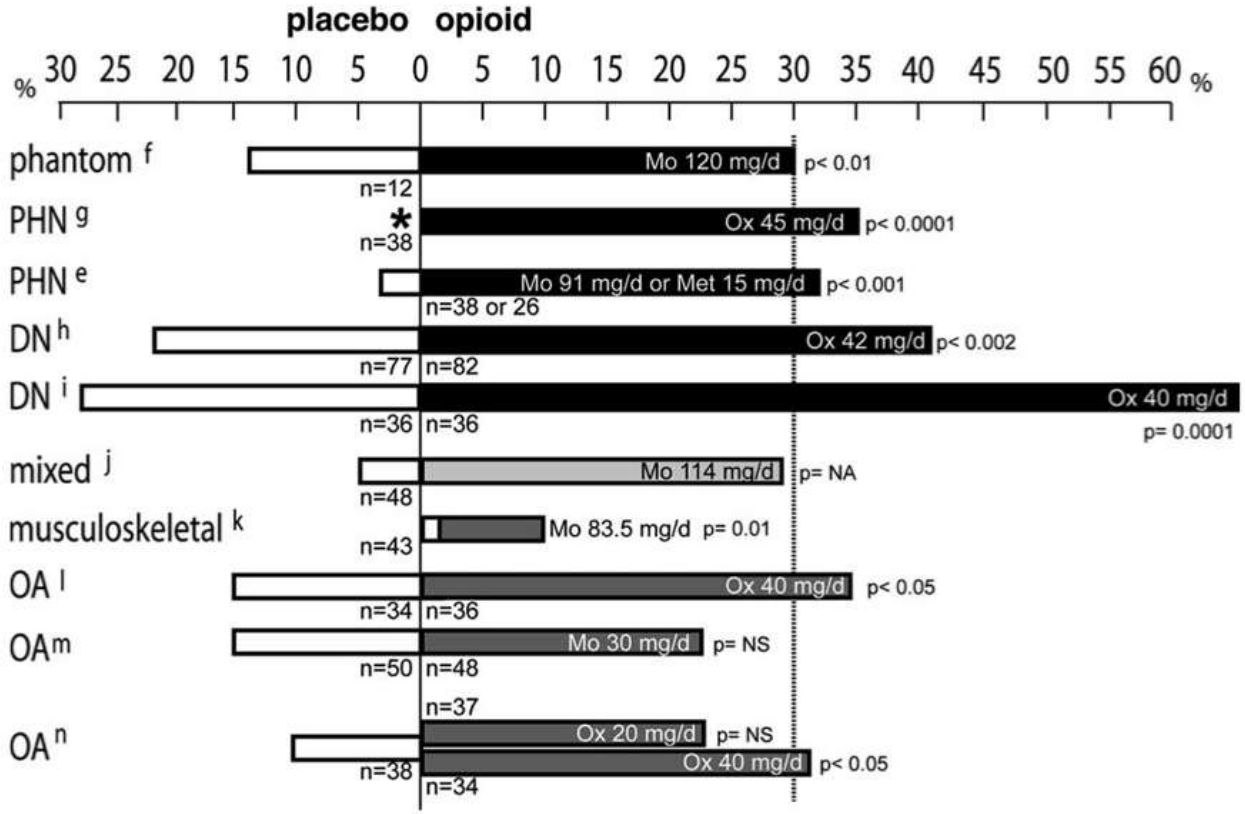
- Increasingly used outside palliative care
- Long acting preparations best
- Transdermal preparations
- Low dose preparations available

Opioids -advantages

- Good analgesia
- Well tolerated in the elderly
- Range of drugs and routes

Efficacy of opioids in chronic non-cancer pain: systematic review

Reduction in Pain Intensity Following Oral Opioid Treatment



** 30% is the suggested clinically relevant decrease in pain intensity in chronic pain*

Kalso et al. *Pain* 2004;112:372-80

Opioids - disadvantages

- Side-effects drowsiness confusion
- Constipation
- Practical issues

Available, commonly used, opioids

- (Codeine)
- Tramadol
- Morphine
- Oxycodone
- Fentanyl
- Buprenorphine
- Tapentadol
- Targinact

Dose equivalents

- Fentanyl 12mcg = 50mg
- Fentanyl 25mcg =100mg
- Oxycodone 5mg = 10mg
- Buprenorphine 35mcg = 30mg
- Buprenorphine 5mcg = 10mg
- Tapentadol 10mg?

Comparison of transdermal buprenorphine with codeine

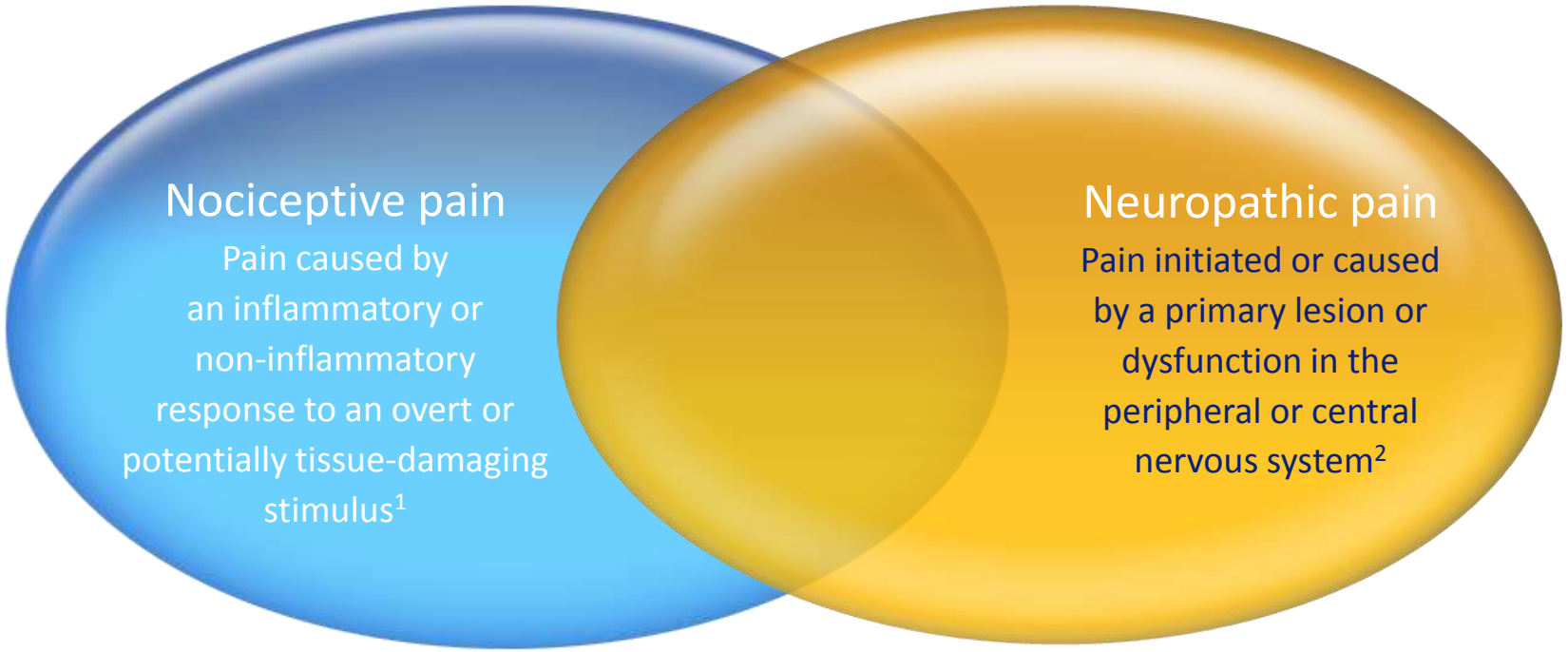
butrans	5mcg/hr	10mcg/hr	20mcg/hr
codeine	=60mg/day	120mg/day	240mg/day
dihydrocodeine	60mg/day	120mg/day	240mg/day
tramadol		100mg/day	200mg/day

Transdermal preparations

- Best for stable pain
- Good compliance
- Suitable with cognitive impairment
- Skin problems may occur
- Available drugs buprenorphine, fentanyl
- Safe in renal failure

Neuropathic pain

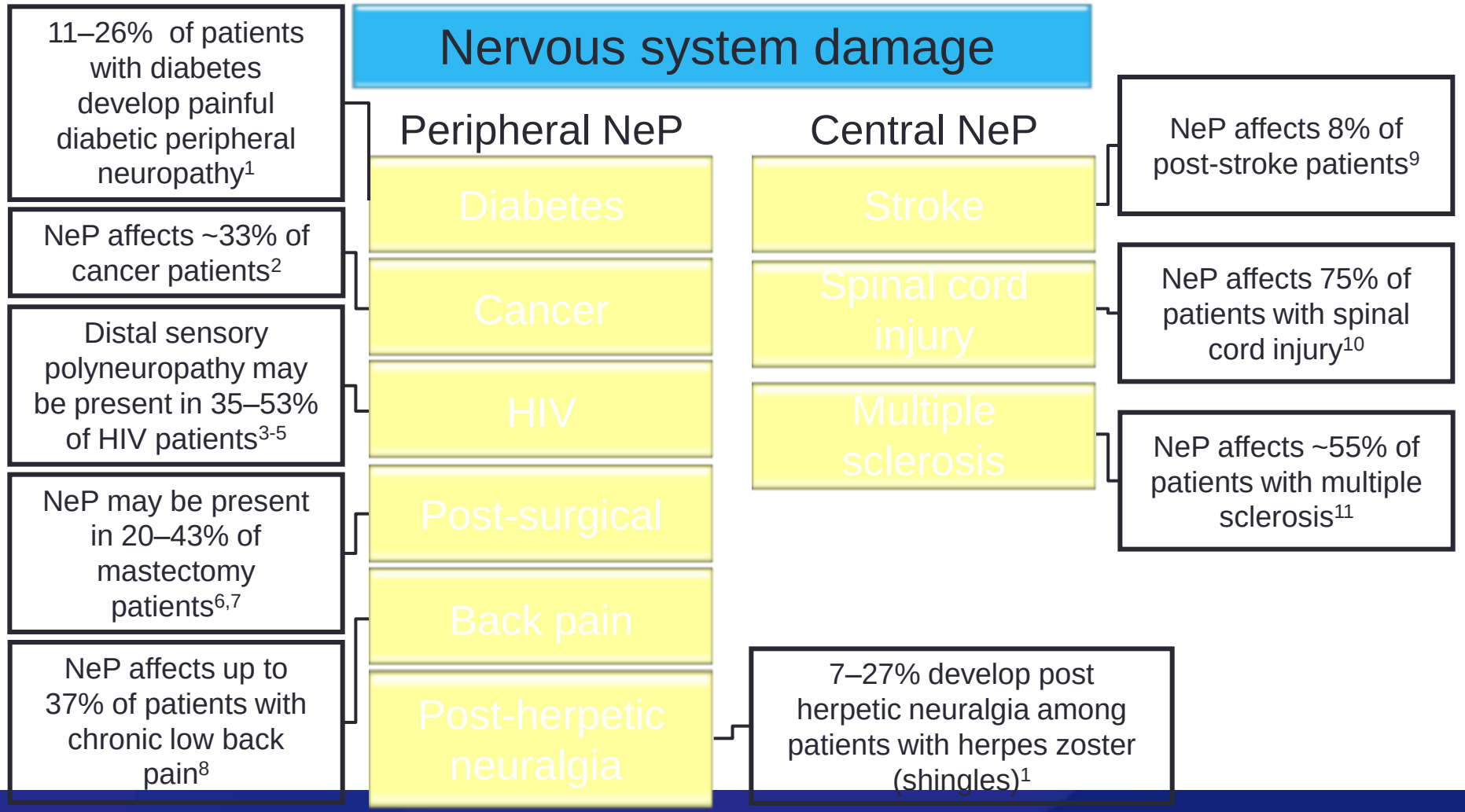
Understanding key types of pain



1. Adapted from Julius D et al. In: McMahon SB and Koltzenburg M. Wall and Melzack's Textbook of Pain. 5th ed. London:Elsevier; 2006, pg 35; 2. Adapted from Merskey H, Bogduk N, eds. Classification of chronic pain: descriptions of chronic pain syndromes and definitions of pain terms, 2nd ed. Seattle, WA: IASP Press; 1994, pg 212

06-00306 Date of preparation March 2010

Prevalence of neuropathic pain



1. Sadosky A et al. Pain Pract. 2008;8:45–56; 2. Davis MP, Walsh D. Am J Hosp Palliat Care 2004;21:137–42; 3. So YT et al. Arch Neurol 1988;45:945–8; 4. Schifitto G et al. Neurology 2002;58:1764–8; 5. Morgello S et al. Arch Neurol 2004;61:546–51; 6. Stevens PE et al. Pain 1995;61:61–8; 7. Smith WC et al. Pain 1999;83:91–5; 8. Freynhagen R et al. Curr Med Res Opin 2006;22:1911–20; 9. Andersen G et al. Pain 1995;61:187–93; 10. Siddall PJ et al. Pain 2003; 103:249–57; 11. Rae-Grant AD et al. Multiple Sclerosis 1999;5:179–83

05-00306 Date of preparation March 2010

History

- Obvious nerve pathology eg PHN, Diabetic neuropathy
- Previous injury or surgery
- Suggestive symptoms
- Failure of conventional analgesia

Patients with neuropathic pain may use these pain descriptors

‘Shooting’

‘Electric shock-like’

‘Tingling’

‘Burning’

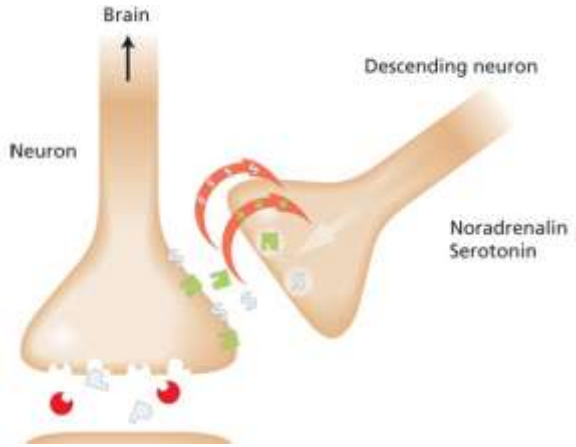
‘Numbness’

Drugs in Neuropathic pain

- Antidepressants
- Anticonvulsants
- Opioids

Antidepressants: TCAs

- E.g. amitriptyline, imipramine



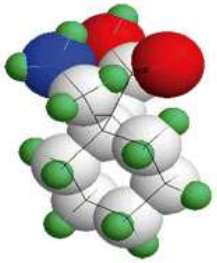
Efficacy	Mode of action	Side effects
› Neuropathic pain[1] › Complex regional pain syndrome[1] › Tension headache	› Inhibition of neuronal reuptake of noradrenaline and serotonin (5-HT)	› Constipation[1] › Dry mouth[1] › Somnolence[1] › Abnormalities in heart rate or rhythm[1] › Insomnia › Increased appetite

1. Dworkin RH *et al.* Arch Neurol. 2003;60:1524-34.

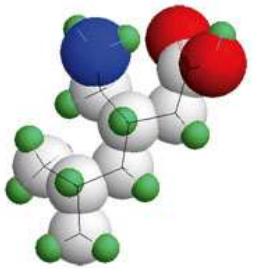
Anticonvulsants

- E.g. carbamazepine, gabapentin, pregabalin

Efficacy	Mode of action	Side effects
Neuropathic pain[1,2]	Different modes of action: **Gabapentin:** binds to presynaptic voltage-dependent calcium channels[1] **Pregabalin:** interacts with special N-type calcium channels[1] **Carbamazepine:** blocks Na^{+1} and Ca^{2+} channels	Sedation[1,2] Dizziness[1,2] Ataxia[1] Peripheral oedema[1,2] Nausea[1,2] Weight gain[3]



Gabapentin



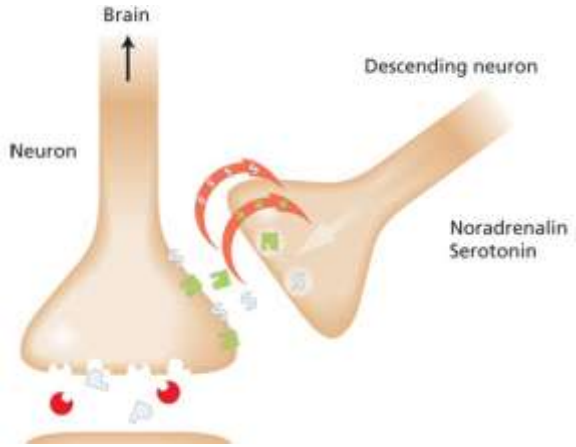
Pregabalin

Carbamazepine

1. Attal N *et al*. Eur J Neurol. 2006;13:1153-69. 2.Dworkin RH *et al*. Arch Neurol. 2003;60:1524-34.
3. Ettinger AB, Argoff CE. Neurotherapeutics. 2007;4:75-83.

Antidepressants: Selective serotonin and noradrenalin reuptake inhibitors (SSRIs & SNRIs)

- E.g. duloxetine, venlafaxine



Efficacy	Mode of action	Side effects (duloxetine)
› Neuropathic pain[1,2] › SNRIs are better analgesics than SSRIs	› Selectively inhibit reuptake of noradrenaline or serotonin or both › Provide analgesia by intensifying descending inhibition	› Nausea & Vomiting[2] › Constipation[2] › Somnolence[1,2] › Dry mouth[2] › Increased sweating[2] › Loss of appetite[2]

1. Quilici S *et al*. BMC Neurol. 2009;9:6. 2. Attal N *et al*. Eur J Neurol. 2006;13:1153-69.

Dosing, titration & therapeutic dose of 1st & 2nd line agents in DPNP

	Duloxetine	Gabapentin	Pregabalin	Amitriptyline *– NICE
Dosing[1-4]	Once or twice daily	3 divided doses	2 or 3 divided doses	Once daily
Lowest Effective Dose[1-4]	60mg	900mg	150mg	10mg?
Maximum Recommended Dose[1-4]	120mg	3600mg	600mg	75mg
NEUPSIG Suggested Duration of adequate trial[5]	4 weeks	3–8 weeks for titration plus 2 weeks at maximum dosage	4 weeks	6–8 weeks with at least 2 weeks at max tolerated dosage

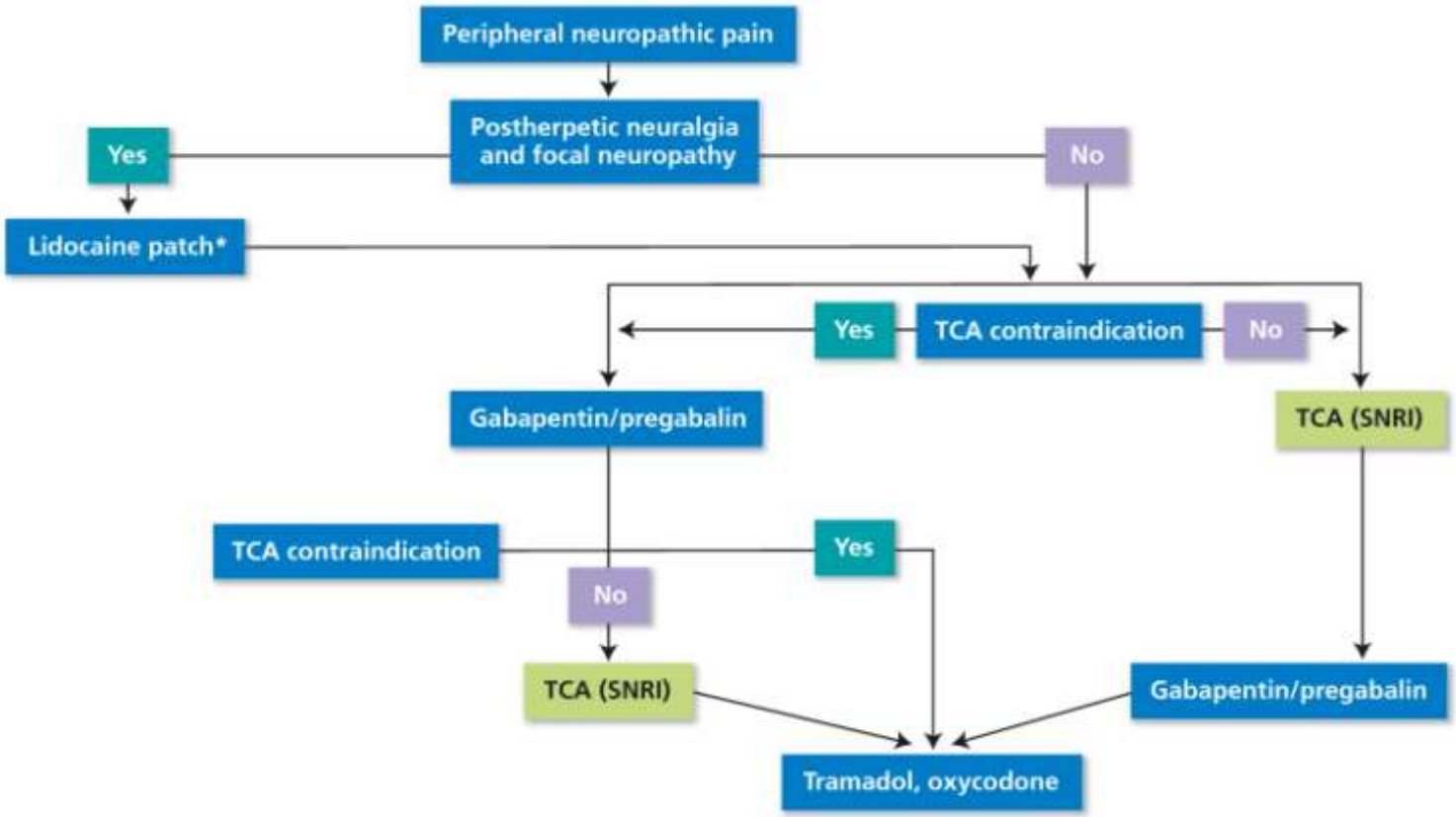
*Not licensed for DPNP, dosing as per NICE recommendations

1. Cymbalta SPC 2. Neurontin SPC. 3. Lyrica SPC. 4. 1.NICE clinical guideline 96 Neuropathic pain. 5. Dworkin RH et al. Pain 132 (2007) 237–251.

First-line treatment

- Offer oral amitriptyline* or pregabalin
- Amitriptyline*: start at 10 mg/day; gradually titrate to maximum of 75 mg/day
- Pregabalin: start at 150 mg/day (two doses; consider lower starting dose if appropriate); titrate to maximum of 600 mg/day

Algorithm for neuropathic pain treatment: An evidence based proposal



Adapted from Finnerup *et al* (2005)

Post-herpetic neuralgia

- Persistent pain after shingles occurs in 15% of population
- Incidence increases to 75% if aged >70years
- 40-50% of patients do not obtain relief from any treatment

Topical treatments

- Versatis

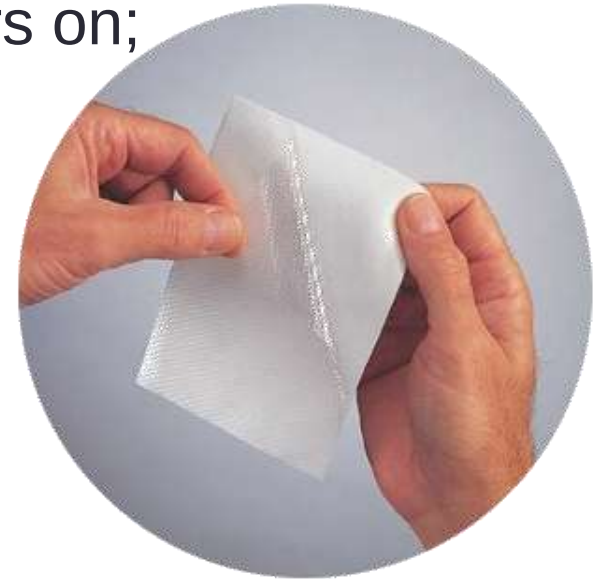
- Licensed for PHN
- For patients with burning, shooting, stabbing pains
- An innovative locally-acting analgesic
- Rapid and sustained efficacy
- A reassuring safety and tolerability profile

- Qtenza

- 8% capsaicin
- One application can be effective for >3months

Simple administration

- • Apply only to unbroken, clean, dry skin
- • Versatis medicated plasters can be cut to fit the painful area being treated
- • To cover the area of pain, up to 3 medicated plasters can be used at each application
- • Versatis plasters are worn 12 hours on; 12 hours off



QUTENZA cutaneous patch

- QUTENZA is a high concentration capsaicin (8% w/w) patch[1]
- A single dermal application provides patients with significant pain relief that can be maintained for at least 12 weeks[2,3]
- QUTENZA targets the source of peripheral neuropathic pain with with transient low levels of systemic absorption[4]

1 CHMP assessment report for QUTENZA (EPAR). 2009. European Medicine Agency, London, UK.
2. Backonja M et al. Lancet Neurol 2008;7(12):1106-1112.
3. Simpson DM et al. Neurology 2008;70(24):2305-2313.
4. QUTENZA Summary of Product Characteristics. Astellas Pharma Ltd.

Prescribing drugs for the elderly

- Start low go slow
- Consider side-effects
- Consider practicalities
- Avoid somnolence, dizziness, increasing the risk of falls

Main side effects of pharmacological treatments

Opioids[1,2]

- Nausea
- Vomiting
- Constipation
- Dizziness or vertigo
- Somnolence
- Dry skin, pruritus

NSAIDs[3]

- Gastrointestinal irritation/bleeding
- Renal toxicity
- Potential drug-drug interactions
- Cardiovascular side effects (e.g. myocardial infarction, stroke and hypertension) with some selective Cox-2 inhibitors

Anticonvulsants[4,5,6]

- Sedation
- Dizziness
- Ataxia
- Peripheral oedema
- Nausea
- Weight gain

SNRIs[5,7]

- Nausea
- Vomiting
- Constipation
- Somnolence
- Dry mouth
- Increased sweating
- Loss of appetite

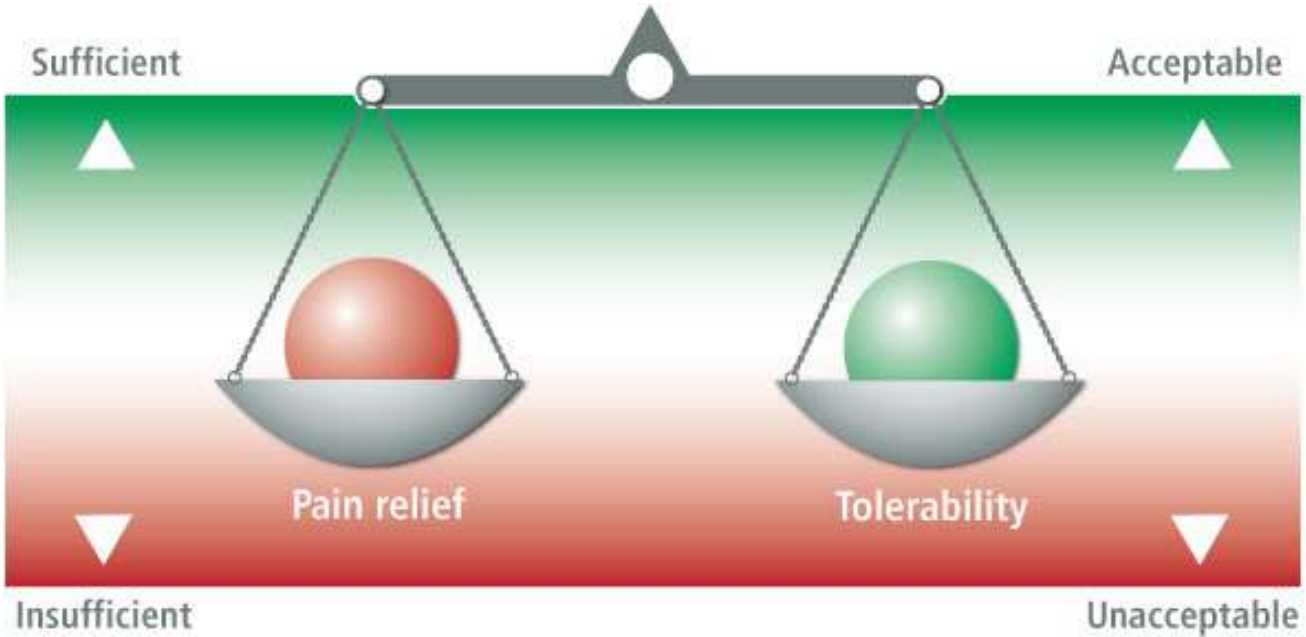
1. Furlan AD *et al.* CMAJ 2006;174:1589-94. 2. Jacobsen R *et al.* J Opioid Manag 2007;3:207-14. 3. Warner TD, Mitchell JA. FASEB J 2004;18:790-804. 4. Ettinger AB, Argoff CE. Neurotherapeutics 2007;4:75-83. 5. Attal N *et al.* Eur J Neurol 2006;13:1153-69. 6. Dworkin RH *et al.* Arch Neurol 2003;60:1524-34. 7. Quicili S *et al.* BMC Neurol 2009;9:6.

Limitations of pharmacological pain management

- Currently, pharmacological treatment of severe chronic pain is often ineffective

  Why?

- Because it is hard to maintain a balance between
  - **pain relief (analgesia)** *and* **tolerability of the medication**



Non pharmacological management

- Education
- Exercise
- Injections
- Tens
- Acupuncture
- Massage etc etc

Education

- Pain may not go away
- Pain is not a sign of progressive disease
- Activity does not make pain worse
- Exercise is good
- Success is measured in terms of function and quality of life not just pain

Exercise

- Needs to be age appropriate!
- Walking good
- Groups may be helpful
- Fall prevention

Injections for pain

- Facet joint injections (including SIs) for spinal pain
- Denervation
- Trigger point (muscle injections)
    - Steroids
    - Botox

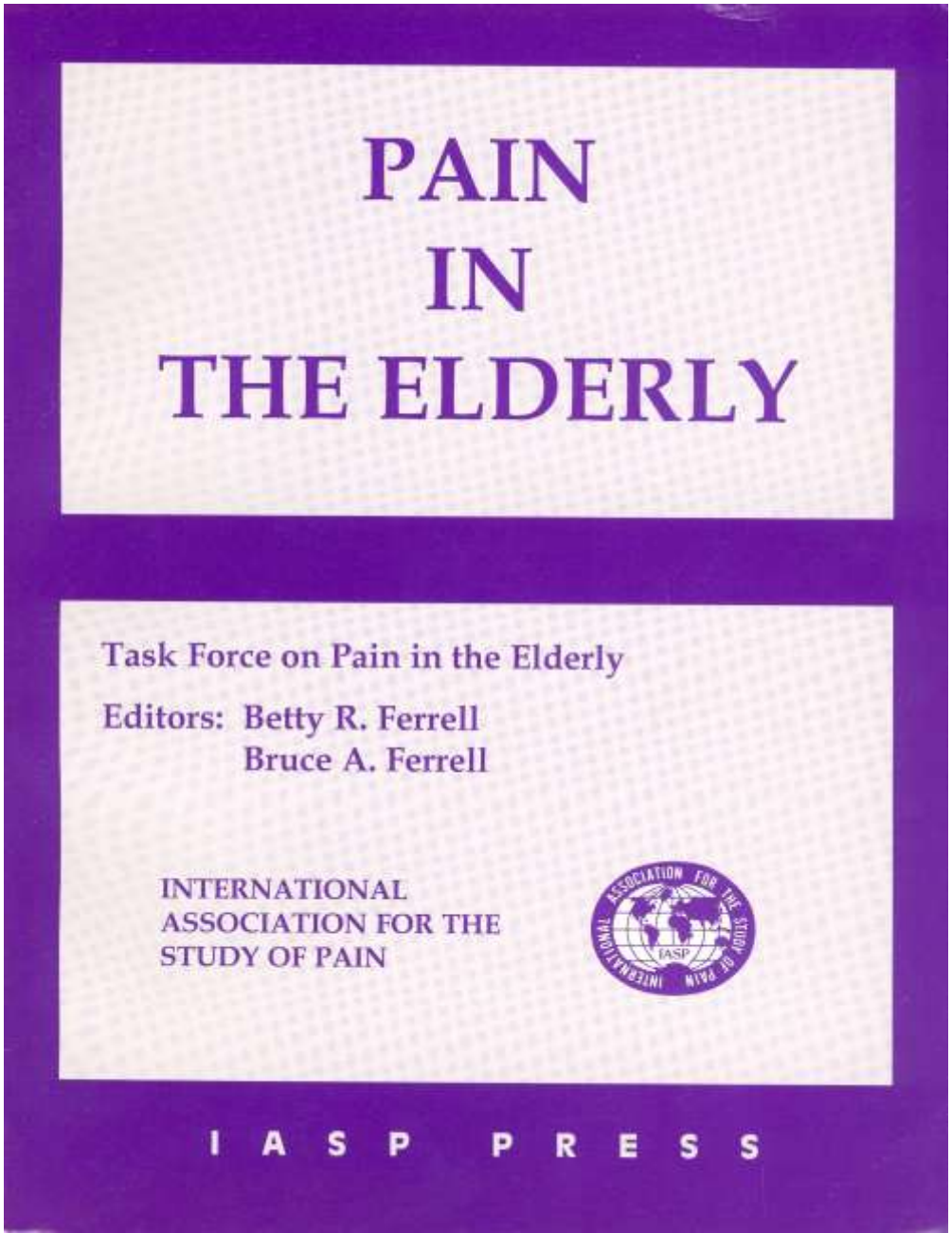
Intra-articular injections

Facet Joint Pain

- Localised
- Paravertebral tenderness
- Pain on extension
- No neurology
- No radiation below the knee

Summary

- The elderly frequently suffer with pain
- They deserve to be treated
- Treatment should be individual
- May be multimodal
- Biopsychosocial model essential
- Risk/benefit analysis of treatment is crucial


PAIN
IN
THE ELDERLY
Task Force on Pain in the Elderly
Editors: Betty R. Ferrell
Bruce A. Ferrell
INTERNATIONAL
ASSOCIATION FOR THE
STUDY OF PAIN
IASP PRESS

- Paracetamol:

  GFR 20-50 = no dose adjustment GFR 10-20 = no dose adjustment GFR <10 500mg-1g tds

- NSAIDs: Should be avoided even in mild renal impairment. Can still be used in dialysis patients if they have no significant residual renal function (anuric patients)

WHO ladder Step 2

- Codeine:
  - Half life prolonged. Unclear whether removed by dialysis:
  - Mild renal failure – normal dose
  - Moderate failure – 30 – 60mg tds
  - Severe renal failure 30mg bd max
- Tramadol:
  - Removed by dialysis. Side effects may be enhanced
  - Mild renal failure – normal dose
  - Moderate failure – 50 – 100mg bd
  - Severe renal failure 50mg bd max

- Buprenorphine:
  - Metabolised in the liver to inactive norbuprenorphine.
  - Therefore safe to use in patients with renal impairment.
  - No dose adjustments in Transdermal preparations

STEP 3 ANALGESICS

- Oxycodone
  - 90% metabolised in the liver but the other 10% (which is renally excreted may accumulate.
  - GFR 20-50 = no dose adjustment
  - GFR 10-20 = no dose adjustment. Avoid modified release preparations.
  - GFR < 10 avoid
  - Avoid modified release preparations
  - It may be safe to use small doses of oxycodone at long intervals
- If a patient on regular morphine/oxycodone develops moderate/severe renal failure switch to the appropriate Buprenorphine/Fentanyl patch

Non-conventional analgesia NNTs

• Carbamazepine		2
• Valproate	2.8	
• TCA	3.1	
• Lignocaine	4.4	
• Pregabalin	4.7	
• SNRIs		5.5
• SSRIs		6.8
• Ketamine		7.6