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
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.

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

Pain Prevalence... according to patient reported diagnosis

Please indicate which of the following conditions have caused you to feel pain in the past month?

- Cancer pain: 1%
- Fibromyalgia: 9%
- Neuropathic: 10%
- Surgery or medical procedure: 12%
- Arthritis: 25%
- Neck: 35%
- Joint pain: 57%
- Back problems: 71%

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

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

Visual Analog Scale (VAS)

Pain as bad as it could possibly be
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

Q2. Facial expression
  eg. looking tense, frowning grimacing, looking frightened
  Absent 0  Mild 1  Moderate 2  Severe 3

Q3. Change in body language
  eg. fidgeting, rocking, guarding part of body, withdrawn
  Absent 0  Mild 1  Moderate 2  Severe 3

Q4. Behavioural Change
  eg. increased confusion, refusing to eat, alteration in usual patterns
  Absent 0  Mild 1  Moderate 2  Severe 3

Q5. Physiological change
  eg. temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor
  Absent 0  Mild 1  Moderate 2  Severe 3

Q6. Physical changes
  eg. skin tears, pressure areas, arthritis, contractures, previous injuries.
  Absent 0  Mild 1  Moderate 2  Severe 3

Add scores for 1 – 6 and record here ▶ Total Pain Score ▶

Now tick the box that matches the Total Pain Score

<table>
<thead>
<tr>
<th>0 – 2</th>
<th>3 – 7</th>
<th>8 – 13</th>
<th>14+</th>
</tr>
</thead>
<tbody>
<tr>
<td>No pain</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
</tbody>
</table>

Finally, tick the box which matches the type of pain

<table>
<thead>
<tr>
<th>Chronic</th>
<th>Acute</th>
<th>Acute on Chronic</th>
</tr>
</thead>
</table>

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
(This document may be reproduced with this acknowledgment retained)
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”

Acute pain management

- By definition self-limiting
- Drugs are effective
- WHO ladder useful
WHO PAIN RELIEF LADDER

Step 1
Non-opioid
- e.g. aspirin, ibuprofen, diclofenac, cox-2 inhibitors, paracetamol

Step 2
Weak opioid
- e.g. codeine, dihydrocodeine, tramadol

Step 3
Strong opioid
- e.g. morphine, hydromorphone, oxycodone, buprenorphine, fentanyl, methadone

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

- Urogenital conditions
- Hearing impairments
- Psychiatric disorders
- Dermatological conditions
- Cardiovascular conditions
- Cancer
- Endocrinological conditions
- Visual impairments
- Chronic respiratory diseases
- Gastrointestinal conditions
- Cerebrovascular/Neurologic
- Renal disease
- Musculoskeletal conditions

Sprangers, 2000
Co-morbidity associated with chronic pain

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

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

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

Step 3
Strong opioid
- e.g. morphine, hydromorphone, oxycodone,
buprenorphine, fentanyl, methadone

Step 2
Weak opioid
- e.g. codeine, dihydrocodeine, tramadol

Step 1
Non-opioid
- e.g. aspirin, ibuprofen, diclofenac, cox-2 inhibitors,
paracetamol

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
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

<table>
<thead>
<tr>
<th>butrans</th>
<th>5mcg/hr</th>
<th>10mcg/hr</th>
<th>20mcg/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>codeine</td>
<td>=60mg/day</td>
<td>120mg/day</td>
<td>240mg/day</td>
</tr>
<tr>
<td>dihydrocodeine</td>
<td>60mg/day</td>
<td>120mg/day</td>
<td>240mg/day</td>
</tr>
<tr>
<td>tramadol</td>
<td></td>
<td>100mg/day</td>
<td>200mg/day</td>
</tr>
</tbody>
</table>
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

Nociceptive pain
Pain caused by an inflammatory or non-inflammatory response to an overt or potentially tissue-damaging stimulus\(^1\)

Neuropathic pain
Pain initiated or caused by a primary lesion or dysfunction in the peripheral or central nervous system\(^2\)


Pain In Practice - A medical education meeting initiated and funded by Pfizer
## Prevalence of Neuropathic Pain

11–26% of patients with diabetes develop painful diabetic peripheral neuropathy

NeP affects ~33% of cancer patients

Distal sensory polyneuropathy may be present in 35–53% of HIV patients

NeP may be present in 20–43% of mastectomy patients

NeP affects up to 37% of patients with chronic low back pain

<table>
<thead>
<tr>
<th>Peripheral NeP</th>
<th>Central NeP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>Stroke</td>
</tr>
<tr>
<td>Cancer</td>
<td>Spinal cord injury</td>
</tr>
<tr>
<td>HIV</td>
<td>Multiple sclerosis</td>
</tr>
<tr>
<td>Post-surgical</td>
<td></td>
</tr>
<tr>
<td>Back pain</td>
<td></td>
</tr>
<tr>
<td>Post-herpetic neuralgia</td>
<td>7–27% develop post herpetic neuralgia among patients with herpes zoster (shingles)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Efficacy</th>
<th>Mode of action</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic pain¹</td>
<td>Inhibition of neuronal reuptake of noradrenaline and serotonin (5-HT)</td>
<td>Constipation¹</td>
</tr>
<tr>
<td>Complex regional pain syndrome¹</td>
<td></td>
<td>Dry mouth¹</td>
</tr>
<tr>
<td>Tension headache</td>
<td></td>
<td>Somnolence¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abnormalities in heart rate or rhythm¹</td>
</tr>
</tbody>
</table>

### Anticonvulsants

- E.g. carbamazepine, gabapentin, pregabalin

<table>
<thead>
<tr>
<th>Efficacy</th>
<th>Mode of action</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic pain$^{1,2}$</td>
<td>Different modes of action:</td>
<td>Sedation$^{1,2}$</td>
</tr>
<tr>
<td></td>
<td><strong>Gabapentin</strong>: binds to presynaptic voltage-dependent calcium channels$^1$</td>
<td>Dizziness$^{1,2}$</td>
</tr>
<tr>
<td></td>
<td><strong>Pregabalin</strong>: interacts with special N-type calcium channels$^1$</td>
<td>Ataxia$^1$</td>
</tr>
<tr>
<td></td>
<td><strong>Carbamazepine</strong>: blocks Na$^{+1}$ and Ca$^{2+}$ channels</td>
<td>Peripheral oedema$^{1,2}$</td>
</tr>
</tbody>
</table>

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

- E.g. duloxetine, venlafaxine

<table>
<thead>
<tr>
<th>Efficacy</th>
<th>Mode of action</th>
<th>Side effects (duloxetine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic pain(^1,2)</td>
<td>Selectively inhibit reuptake of noradrenaline or serotonin or both</td>
<td>Nausea &amp; Vomiting(^2)</td>
</tr>
<tr>
<td>SNRIs are better analgesics than SSRIs</td>
<td>Provide analgesia by intensifying descending inhibition</td>
<td>Constipation(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Somnolence(^1,2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dry mouth(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased sweating(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loss of appetite(^2)</td>
</tr>
</tbody>
</table>

Dosing, titration & therapeutic dose of 1\textsuperscript{st} & 2\textsuperscript{nd} line agents in DPNP

<table>
<thead>
<tr>
<th></th>
<th>Duloxetine</th>
<th>Gabapentin</th>
<th>Pregabalin</th>
<th>Amitriptyline – NICE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dosing\textsuperscript{1-4}</strong></td>
<td>Once or twice daily</td>
<td>3 divided doses</td>
<td>2 or 3 divided doses</td>
<td>Once daily</td>
</tr>
<tr>
<td><strong>Lowest Effective Dose\textsuperscript{1-4}</strong></td>
<td>60mg</td>
<td>900mg</td>
<td>150mg</td>
<td>10mg?</td>
</tr>
<tr>
<td><strong>Maximum Recommended Dose\textsuperscript{1-4}</strong></td>
<td>120mg</td>
<td>3600mg</td>
<td>600mg</td>
<td>75mg</td>
</tr>
<tr>
<td><strong>NEUPSIG Suggested Duration of adequate trial\textsuperscript{5}</strong></td>
<td>4 weeks</td>
<td>3–8 weeks for titration plus 2 weeks at maximum dosage</td>
<td>4 weeks</td>
<td>6–8 weeks with at least 2 weeks at max tolerated dosage</td>
</tr>
</tbody>
</table>

*Not licensed for DPNP, dosing as per NICE recommendations*

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 >70 years
- 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 >3 months
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) patch¹

- A single dermal application provides patients with significant pain relief that can be maintained for at least 12 weeks²,³

- QUTENZA targets the source of peripheral neuropathic pain with transient low levels of systemic absorption⁴

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

<table>
<thead>
<tr>
<th>Opioids&lt;sup&gt;1,2&lt;/sup&gt;</th>
<th>NSAIDs&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>› Nausea</td>
<td>› Gastrointestinal irritation/bleeding</td>
</tr>
<tr>
<td>› Vomiting</td>
<td>› Renal toxicity</td>
</tr>
<tr>
<td>› Constipation</td>
<td>› Potential drug-drug interactions</td>
</tr>
<tr>
<td>› Dizziness or vertigo</td>
<td>› Cardiovascular side effects (e.g. myocardial infarction, stroke and hypertension) with some selective Cox-2 inhibitors</td>
</tr>
<tr>
<td>› Somnolence</td>
<td></td>
</tr>
<tr>
<td>› Dry skin, pruritus</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticonvulsants&lt;sup&gt;4,5,6&lt;/sup&gt;</th>
<th>SNRIs&lt;sup&gt;5,7&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>› Sedation</td>
<td>› Nausea</td>
</tr>
<tr>
<td>› Dizziness</td>
<td>› Vomiting</td>
</tr>
<tr>
<td>› Ataxia</td>
<td>› Constipation</td>
</tr>
<tr>
<td>› Peripheral oedema</td>
<td>› Somnolence</td>
</tr>
<tr>
<td>› Nausea</td>
<td>› Dry mouth</td>
</tr>
<tr>
<td>› Weight gain</td>
<td>› Increased sweating</td>
</tr>
<tr>
<td></td>
<td>› Loss of appetite</td>
</tr>
</tbody>
</table>

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
• 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