Pain Management: 
**Older Adults in Long-term Care** 
Presented by: Dr. Charles Cefalu, MD 

**Objectives**
- Assessing pain in seniors in LTC
- Preferred pharmacological options
- Strategies for better control
- Vitamin D
- Regulatory hurdles

**Pain is inadequately treated**
- 40% of Americans with cancer are in serious pain during the last 3 days of life
- 26% of nursing home residents report daily non-cancer pain, yet 25% of these had no analgesic order
- 45-80% in nursing home residents have pain
- Age > 70 years is the number one risk factor for inadequate pain management (ECOG study)
- 29% of Medicare Pts in NH’s with a fx in past 6 months suffer with daily pain

The Functional Pain Scale

Cost of Chronic Pain

- The Group Health Cooperative of Puget Sound showed that of 14 medical conditions, the cost per patient was highest for stroke and lowest for chronic pain.
- Because chronic pain is so prevalent, it is the most costly medical condition.


Reasons for Inadequate Pain Management

Physician Reasons
- Insufficient Assessment (>70%)
- Fear of using some medication, esp. opioids (>60%)
- Inadequate knowledge (>50%)

Patient Reasons
- Inadequate Reporting
- Fear of stigma of opioids


Other Reasons...

- <1% of the thousands of papers published on pain focus on the aging society
- Lack of time in the nursing home for assessment and treatment of pain
- Fear of being labeled a complainer
- Belief that pain is a normal part of aging

Ferrell BA. Am Intern Med. 1995; 123:681-7
AGS Guidelines for the Management of Persistent Pain in Older Persons

- Pain not a normal part of aging
- Assessment & Management
- Health System Barriers
  - Administrative
  - Regulatory
    - Revise Regulations that have created barriers
  - QI

FEDERATION OF STATE MEDICAL BOARDS OF THE U.S., INC.
Model Guidelines for the Use of Controlled Substances for the Treatment of Pain

- Evaluation of the Patient
- Treatment Plan
- Informed Consent and Agreement for Treatment
- Periodic Review
- Consultation
- Medical Records
- Compliance with Controlled Substances Laws and Regulations

Wong-Baker FACES Pain Rating Scale

The Functional Pain Scale

- 0 No Pain
- 1 Tolerable (Doesn’t interfere with activities)
- 2 Tolerable (Interferes with some activities)
- 3 Intolerable (Able to use phone, TV, or read)
- 4 Intolerable (Unable to use phone, TV, or read)
- 5 Intolerable (Unable to verbally communicate)


<table>
<thead>
<tr>
<th>Scale</th>
<th>Relative Efficiency</th>
<th>Standardized Response Means</th>
<th>Effect Size</th>
<th>p-value</th>
<th>Paired t-test</th>
<th>Rank (Resp. Index)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPS</td>
<td>1.00</td>
<td>0.29</td>
<td>0.29</td>
<td>0.0054</td>
<td>2.85</td>
<td>1(7)</td>
</tr>
<tr>
<td>VAS</td>
<td>0.32</td>
<td>0.46</td>
<td>0.47</td>
<td>0.04</td>
<td>2.14</td>
<td>2(12)</td>
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<tr>
<td>PPI</td>
<td>0.36</td>
<td>0.25</td>
<td>0.25</td>
<td>0.02</td>
<td>2.21</td>
<td>3(13)</td>
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<tr>
<td>MPQ</td>
<td>0.30</td>
<td>0.22</td>
<td>0.21</td>
<td>0.037</td>
<td>2.11</td>
<td>4(19)</td>
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<tr>
<td>VNS</td>
<td>0.18</td>
<td>0.25</td>
<td>0.22</td>
<td>0.067</td>
<td>1.87</td>
<td>5(24)</td>
</tr>
</tbody>
</table>

Legend: FPS = Functional Pain Scale; VAS = Visual Analog Scale; PPI = Present Pain Intensity; MPQ = McGill Pain Questionnaire-Short Form; VNS = Visual Numerical Pain Scale.
Pain

• Nociception (A-delta vs C fibers, opioid receptors)
• Psychological (Secondary Gain, Depression, Mental Focus, Prior Experience, & Anxiety)

The Pain Pathway

Opioid, NMDA, & GABA Receptors

- μ – analgesia, miosis, respiratory depression, and euphoria
- κ – analgesia, miosis, sedation, and psychotomimetic activity
- δ – analgesia, miosis, and hypotension
- N-methyl-D-aspartate (NMDA)
- Gamma aminobutyric acid (GABA)
Treatment

- History (onset, duration, location, description, relieving and exacerbating factors, psychological components)
- Physical Findings

Pain Management

Nonpharmacological
- Cold, Heat, PT/OT, Exercise
- TENS, Acupuncture
- Radiation
- Blocks, Relaxation, Hypnotism, Biofeedback, Massage, Vibration, Magnets, etc.

Pain Management

- Pharmacological
  - Non-opioids
  - Opioids

Drug Benefit to Risk Ratio May Change with Entry into Hospice

- Long-term benefit may be negated if remaining life expectancy is < 6 months.
- Comorbidity and other morbidity risk may outweigh potential drug benefits.
- Some drugs and drug classes to consider:
  - CV drugs (Antihypertensives, Amiodarone, etc.)
  - Warfarin (Coumadin) and other anticoagulants (e.g. Clopidogrel [Plavix], Cilostazol [Pletal] etc.)
  - Drugs for osteoporosis.

Pain Management Costs

Always consider cost!
- Individual Costs and Ability to Pay
- Societal Costs
- Cheaper per Pill may NOT be less costly
**Pain Management-Pharmacological**

Non-opioids
- Acetaminophen
- NSAID's (Topical preferred)
- Tramadol (Ultram or Ultracet)
- Capsaicin
- EMLA, etc.

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**COX Pathophysiology**

- **Arachidonic acid**
- **NSAIDs**
- **COX-1**
  - Constitutive
  - PGs
  - GI cytoprotection
  - Platelet activity
  - Renal function
- **COX-2**
  - Inducible
  - Constitutive
  - PGs
  - Pain
  - Fever
  - Inflammation
  - Renal function

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**Coxibs: Platelet Aggregation**

![Graph showing inhibition of platelet aggregation with different doses of Coxibs and aspirin.](image)
Hypertension with Non-Specific NSAIDs is Dose-Related

<table>
<thead>
<tr>
<th>Dose Category</th>
<th>Odds Ratio</th>
<th>Adjusted*</th>
<th>Odds Ratio</th>
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<tbody>
<tr>
<td>Non User</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.83 (1.64-2.05)</td>
<td>1.55 (1.38-1.74)</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>2.12 (7.87-2.41)</td>
<td>1.64 (1.44-1.87)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>2.39 (2.13-2.69)</td>
<td>1.82 (1.62-2.05)</td>
<td></td>
</tr>
</tbody>
</table>

n = 7925 Cases; 8608 Controls

*Adjusted for age, sex, race, nursing home residency, number of prescriptions, number of physician claims and number of days hospitalized.

Gunwitz et al., JAMA, September 14, 1994; 272, No. 10

Cardiovascular System: Clinical Profile of Rofecoxib

Overall Mortality and CV Mortality in OA Studies: Events per 100 Patient-Years

<table>
<thead>
<tr>
<th>Rofecoxib N=3,565</th>
<th>NSAIDs N=1,565</th>
<th>Placebo N=783</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total mortality</td>
<td>0.1</td>
<td>0.10</td>
</tr>
<tr>
<td>Cardiovascular mortality</td>
<td>0.1</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Based on time-defined period of follow-up of 6 months to a maximum duration of 7 years. No follow-up for those in hosp行政区. 95% confidence interval.

Rofecoxib is not a substitute for aspirin for cardiovascular prophylaxis.

Concomitant administration of low-dose aspirin with rofecoxib may result in an increased risk of GI ulceration or other complications compared with use of aspirin alone.


NSAIDs and ASA: Cardioprotective Impact

MacDonald & Wei. Lancet 2003 361:573
CV Risk with NSAID's


Topical Diclofenac 1% Gel

- Significant pain reduction
- Recommendation for OA of Knee
- Side effect profile comparable to placebo for CV, Renal and GI ADR's.
- For limited joint pain, this may be a superior recommendation over oral NSAID's


Bupivacaine as pre-emptive analgesia in third molar surgery: Randomized controlled trial

- 45 patients who had bilateral impacted third molars removed
- Bupivacaine was injected on one side, the other side acting as control
- VAS
  - Significant reduction (p = 0.05) in postoperative pain on the injected side at 6, 12, and 72 h and an overall reduction in pain up to 7 days

The Functional Pain Scale

Tramadol (Ultram®) Dose Titration Study II
Summary of Time to Discontinuation Due to Nausea and/or Vomiting.


Isobolographic Analysis


Tramadol + Acetaminophen

The Functional Pain Scale

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### Tramadol (Ultracet™) as COX-2 Add-On Therapy

- **Pain Visual Analog (PVA) Score**

<table>
<thead>
<tr>
<th>ULTRACET (n = 153)</th>
<th>Placebo (n = 153)</th>
</tr>
</thead>
<tbody>
<tr>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>69.5</td>
<td>48.3</td>
</tr>
<tr>
<td>41.5</td>
<td>48.3</td>
</tr>
</tbody>
</table>

*P-value based on ANCOVA model with treatment and center as qualitative factors and baseline values as covariate.


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### Vitamin D Deficiency & Pain

- **Osteomalacia** (Deep musculoskeletal pain)
- **Vitamin D Deficiency Pain Syndrome** (Pain with superficial light pressure, pressure sores painful)
- **Fractures**


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### Percent of Subjects with V. Low Vitamin D Status

- **All**
  - Low Vitamin D Status: 45%
  - Normal Vitamin D Status: 54%
- **Nursing Home**
  - Low Vitamin D Status: 38%
- **Community-Dwelling**
  - Low Vitamin D Status: 54%

Gloth et al. JAMA1995. 274:1083-6
Metastatic Bone Pain Management

- Non Opioids
  - NSAID's COX-2
  - Bisphosphonates (pamidronate, zoledronic acid, alendronate, risedronate, ibandronate)
  - Radionuclides (strontium 89 & samarium-153)


Other agents to combine with opioids

- Gabapentin (Neurontin®) and Pregabalin (Lyrica®) in neuropathic pain (such pain rarely responds adequately to opioids alone) now with an FDA indication for post-herpetic neuralgia.
- Duloxetine (Cymbalta®) and some Tricyclic Antidepressants may also be useful in addressing both neuropathic pain and depression, which commonly accompanies chronic pain.

WHO 3-Step Analgesic Ladder

- Persistent pain
  - Non-Opioids
  - Opioids ± Adjuvant
  - Strong Opioids ± Adjuvant
- Pain Relief
Pain Management

- Opioids
  - Morphine CR
  - Oxycodone CR
  - Oxymorphone CR
  - Hydromorphone CR
  - Fentanyl
  - Buprenorphine

Opioids - Fentanyl Patch

- 18-hour reservoir
- 12-hour delay in onset with new patch
- Increased absorption with fever (heat)
- Deaths in opioid-naïve patients

Opioids in Pain Management

- Tolerance develops to many symptoms within days.
- Constipation still requires:
  - Methylnaltrexone (Relistor®)
  - hydration
  - bulk fiber (only if hydration can be maintained)
  - activity
  - senna
  - sorbitol (20cc 70% BID < 3 d's).

Opioids in Pain Management

• Use regular dosing with 50%-100% increases when breakthrough medication is used more than 3x’s in 24 hours.
• Breakthrough dose should equate to 50-100% of the hourly dose of regularly-dosed medication (ex. 60 mg CR Morphine q12 hrs requires 10-20 mg immediate release q4 hrs).

Methadone and Other Opioid Deaths, 1999-2004

Source: National Center for Health Statistics.

Regulatory Issues in LTC

- DEA
- F-Tag
  - 309 (Quality of Care)
  - 272 (Assessment)
  - F329 (Unnecessary drugs)
  - 386 (Physician review of total plan of care)
  - 279/280 (Comprehensive Care Plans)
- MDS 3.0:
  - J0100. Pain Management - Complete for all residents, regardless of current pain level – J0850
Regulatory Issues in LTC (cont’d)

- MDS 3.0: J0600. Pain Intensity - Administer ONLY ONE of the following pain intensity questions (A or B).
  - A. Numeric Rating Scale (00-10). Ask resident: “Please rate your worst pain over the last 5 days on a zero to ten scale, with zero being no pain and ten as the worst pain you can imagine.” (Show resident 00 -10 pain scale)
  - B. Verbal Descriptor Scale. Ask resident: “Please rate the intensity of your worst pain over the last 5 days.” (Show resident verbal scale) 1. Mild. 2. Moderate. 3. Severe. 4. Very severe, horrible. 9. Unable to answer.

Pain Management – Additional pearls

- Never “prn” (Pain Relief Negligible)
- Regular Schedule (patient may refuse)
- Patient-Controlled Analgesia (PCA)

Postherpetic Neuralgia* in the Shingles Prevention Study

*Herpes zoster-associated pain rated as ≥3 on a 10-pt scale and occurring or persisting at least 90 days after onset of zoster rash.
†Age-adjusted estimate based on the age strata (60–69 and ≥70 years of age) at randomization.
Hospice

- Palliative Care at the End of Life
- Comfort and Dignity
- Medical, Social, Spiritual, Volunteer, & Bereavement components
- DME, Medications, Respite
- Medicare benefit with 6-month prognosis
- SUPPORT & ECOG trials

Geriatrics


Other Resources

- Revised Beer’s Criteria (Arch Intern Med. 2012; 163:2716-24)
Summary

- FPS to help assess pain in seniors in LTC
- AVOID NSAIDs If needed consider Topical Diclofenac or oral Naproxen (& PPI)
- Pre-emptive Analgesia
- Synergy
- Vitamin D
- Prevent pain with CR opioids or vaccine
- Pain Pentagon