PAIN

AGS Geriatrics Evaluation and Management Tools (Geriatrics E&M Tools) support clinicians and systems that are caring for older adults with common geriatric conditions.

From the AMERICAN GERIATRICS SOCIETY

Geriatrics Evaluation & Management Tools

DEFINITIONS

Pain: a subjective unpleasant sensory and emotional experience associated with actual or potential tissue damage
Acute pain: sudden onset, expected to last a short time, and clearly linked to a specific bodily insult or injury
Chronic or persistent pain: lasts at least 3–6 months, beyond the normal tissue healing time

BACKGROUND

- Present in 25%–50% of community-dwelling adults ≥65 years old and 45%–80% of nursing home residents.
- Persistent pain affects at least 116 million adults in United States.
- Pain is commonly underdiagnosed and undertreated in cognitively impaired older adults and may present as behavioral disturbances (agitation) or depression.
- Physical, psychological, social, and spiritual concerns can affect a patient's perception and tolerance of pain; a multidisciplinary approach (involving physical therapists, psychologists, pharmacists, chaplains, social workers, etc) for assessment and treatment can be helpful.

HISTORY OF PRESENT ILLNESS

History can help differentiate type of pain and guide management.

Pain Type	Nociceptive Somatic	Nociceptive Visceral	Neuropathic	Nociplastic
Examples	Arthritis, fracture, bone metastases, postopera- tive, etc	Renal colic, constipation, etc	Radiculopathy, drug toxicities, post-herpetic neuralgia, diabetic neuropathy, etc	Fibromyalgia, myofascial pain syndrome, complex regional pain syndrome
Palliative/ Provocative Factors	Movement	Variable; may be provoked by oral intake	Position changes may provoke radiculopathy	Variable, may be provoked by movement, may be accompanied with sensory changes
Quality	Throbbing, aching, stabbing, gnawing	Cramping, tearing, dull, aching, squeezing, deep	Burning, numb, tingling, sharp, shooting, "electric shock"	Can have features of nociceptive and neuropathic
Radiation	Well localized	May refer to other sites	Nerve or dermatome distribution	May be localized or referred to other sites
Timing	Constant	Colicky, intermittent	Constant or paroxysmal	Constant or paroxysmal

- For severity, see rating scales below.
- Assess functional status: how does pain affect ability to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs)?
- Be aware of complex regional pain syndrome, characterized by pain and/or sensory changes (allodynia, hyperalgesia) with combination of edema, regional sweating abnormality, changes in blood flow, trophic features..

SEVERITY/PAIN SCALES

Select validated scale based on language preference and presence of sensory impairment; use the same scale to assess for changes with treatment.

- Numeric Rating Scale: 0 indicates no pain, 10 indicates worst pain imaginable
  - Can be used in patients with mild to moderate cognitive impairment
- Faces Pain Scale: Patient chooses facial expression that corresponds to his or her pain level.
  - Can be used in patients who do not speak English, or with mild to moderate cognitive impairment; avoid in patients with visual impairment
- Verbal Descriptor Scale: "no pain" to "pain as bad as it could be"
  - Can be used in patients with mild to moderate cognitive impairment
- Pain Assessment IN Advanced Dementia (PAINAD): www.healthcare.uiowa.edu/igec/tools/pain/PAINAD.pdf
  - Can be used in patients with severe cognitive impairment

PAST MEDICAL/ SOCIAL HISTORY

- Anxiety/depression
- Arthritis
- Substance use/abuse
- Osteoporosis
- Cancer
- Sleep disturbance

MEDICATIONS

- Thoroughly review all medications and consider their potential contributions to pain.
- Assess analgesic history: effectiveness and adverse effects of current and previous prescription drugs, OTC drugs, natural remedies.

PHYSICAL EXAMINATION

- Pay close attention to reported site of pain and any potential source of referred pain.
- Musculoskeletal exam, including range of motion and palpation: look for potential trigger points/taut muscle bands (characteristic of myofascial pain).
- Neurologic exam
- Psychiatric exam: assess mental status and screen for anxiety, depression.

NON-OPIOID MEDICATIONS

- Select initial treatment based on severity of pain, type of pain, and impact on function.
- Consider cost, availability, comorbidities, adverse effects, and renal and liver function.

Medication	Starting Dosage	Usual Effective Dosage (Daily Max)	Analgesia Onset	Analgesia Duration	Titrate After:	Notes
Acetaminophen (APAP)	650 mg po q6–8h	2–4 g/d (3–4 g from all sources)	<1 hr	4–6 h	4–6 doses	Typically effective for mild to moderate somatic and visceral pain. Reduce maximum dose by 50%–75% in patients with hepatic insufficiency or alcohol abuse.
Dexamethasone	1–2 mg po q6–12h	Variable	No data	No data	No data	Corticosteroids may be helpful for pain associated with swelling, inflammation, tumors, and neuropathic pain.
NSAIDs	▪ Use judiciously, if at all, only after APAP has been tried, and only in highly select individuals. ▪ Significant adverse effects include renal dysfunction, GI bleeding, platelet dysfunction, fluid retention, exacerbation of hypertension or heart failure, and precipitation of delirium. ▪ Nonacetylated salicylates such as salsalate and trisalicylate may have less renal toxicity and antiplatelet activity, but evidence supporting this theory is sparse. ▪ Topical NSAIDs appear to be safe and effective in the short term, but studies on longer-term use are lacking.					
Bisphosphonates	▪ Consider for pain from malignant bone metastases.					

ANTICONVULSANTS

- Typically effective for neuropathic pain, fibromyalgia
- Numerous drug interactions
- Drug class adverse effects include sedation, dizziness, peripheral edema.
- Switch if ineffective or intolerable effects.

Medication	Starting Dosage	Usual Effective Dosage (Daily Max)	Analgesia Onset	Analgesia Duration	Titrate After:	Notes
Carbamazepine	100 mg po q12h	800–1,200 mg/d (1,200 mg)	No data	No data	3–5 d	Approved for trigeminal and glossopharyngeal neuralgia. Risk of leukopenia, SIADH, thrombocytopenia; monitor CBC, comprehensive metabolic panel.
Gabapentin	100 mg po qhs	300–900 mg q8hr (3,600 mg)	No data	No data	1–2 d	Reduce dosage for a CrCl <60 mL/min. Useful for post-herpetic neuralgia. Off-label use includes peripheral neuropathy, fibromyalgia, and restless legs syndrome.
Pregabalin	25–50 mg po q8–12h	300 mg/d (450–600 mg)	As early as 1 week	No data	7 d	Reduce dosage for a CrCl of <60 mL/min. Primary indications: post-herpetic neuralgia, peripheral neuropathy, fibromyalgia. Off-label use includes restless legs syndrome.

ANTIDEPRESSANTS

- Typically effective for neuropathic pain, fibromyalgia
- No data on onset and duration of analgesia
- Tricyclic antidepressants (TCAs) may help for migraines, tension headaches, and arthritis.
- Use cautiously with comorbid disease and in combination with other medication.

Medication (Class)	Starting Dosage	Usual Effective Dosage (Daily Max)	Titrate After:	Notes
Duloxetine (SNRI)	20 mg/d po	60 mg/d (120 mg/d)	7 d	Adverse events include nausea, dizziness, dry mouth, constipation, diarrhea, urinary hesitancy. Avoid if CrCl <30 mL/min.
Venlafaxine (SNRI)	37.5 mg/d ER po	75–225 mg/d (225 mg ER dosage form)	4–7 d	Associated with dose-related ↑ in blood pressure, heart rate; taper when discontinuing to avoid withdrawal. Reduce total daily dose by 25%–50% if CrCl is 30–89 mL/min. Reduce dose by 50% if CrCl <30 mL/min. Monitor for anticholinergic adverse effects.
Desipramine, nortriptyline (TCAs)	10 mg po qhs	25–100 mg qhs (variable; doses >75–100 mg rarely tolerated by older adults)	3–5 d	Monitor for anticholinergic adverse effects. Avoid amitriptyline in older adults because of adverse effects.

CANNABIS

- Limited evidence as most studies have excluded > 60 years old.
- Low-quality evidence for management of neuropathic pain, insomnia, and anxiety.
- Older adults may be at higher risk of adverse effects -postural hypotension leading to higher fall risk, impairment of short-term memory, worsening of cognitive impairment.
- Contraindicated in unstable cardiac disease
- CBD found to be safe and without abuse potential but no efficacy studies.

OPIOIDS

GENERAL PRINCIPLES OF OPIOID PRESCRIBING

- Typically effective for moderate to severe somatic, visceral, and neuropathic pain
- For opioid naive patients* start with oral short-acting opioid at the lowest dose.
- For intermittent pain, consider using opioid medication on an as-needed basis.
- For continuous pain, consider scheduling opioids.
- **Only consider starting long-acting opioid medication when:**
  - Pain is severe enough to require daily, around-the-clock, long-term opioid treatment and alternative treatment options are ineffective
  - The patient tolerated short-acting opioid pain medication taken regularly for at least 1 week
  - The amount of short-acting opioid taken daily (for at least 1 week) is equal to or more than the morphine equivalent amount of long-acting opioid that will be started.
  - The patient is able to understand and strictly follow medication instructions or a reliable caregiver is available
- With long-acting opioids, continue to have short-acting opioid medication available as needed to treat breakthrough pain. In general, breakthrough dose = 10% of total 24-h opioid dosage given q1–4h prn.

CDC Guideline Recommendations:

- Review state prescription drug monitoring programs before initiating a prescription and on regular intervals
- Obtain urine drug screen to assess for prescribed medication and illegal substances before initiating medication and at least annually for chronic therapies

Drug class adverse effects:

- **Constipation:** tolerance to this adverse effect does not occur; therefore, treat patients started on opioids with bowel stimulants prophylactically whenever possible.
- **Nausea, vomiting:** usually resolves spontaneously after first few doses, may respond to time-limited treatment with antiemetics (or haloperidol for opioid-induced nausea in palliative care setting when prognosis is limited as long as patient does not have parkinsonian features or Lewy body dementia).
- **Sedation:** usually resolves gradually within days to weeks of consistent opioid use.
- **Respiratory depression:** typically preceded by sedation, can be problematic if underlying respiratory dysfunction exists or if opioids used in combination with sedatives; can be reversed with naloxone.

OPIOIDS (CONT'D)

COMMONLY USED SHORT-ACTING OPIOIDS

Medication	Morphine Equivalent (route)	Starting Dosage[a,b]	Analgesia Onset	Analgesia Duration	Titrate After:	Notes
Tramadol	150–300 mg (po)	25 mg po q4–6h	1 h	9 h	4–6 doses	Lowers seizure threshold (avoid if known seizure disorder), increases risk of hypoglycemia; watch for serotonin syndrome if on other serotonergic medications. Max dosage for patients >75 years old is 300 mg/d.
Tapentadol	50–100 mg q4–6h	50–100 mg q4–6h prn (600 mg)				Avoid concurrent use of serotonergic agents (SSRIs, SNRIs, tricyclic antidepressants).
Tapentadol extended-release	50 mg q12h	100–250 mg q12h (500 mg)			3 days	
Hydrocodone (+ APAP)	30 mg (po)	2.5–5 mg po q4–6h	No data	No data	3–4 doses	Daily dose limited by fixed-dose combinations with APAP or NSAIDs. Limit APAP to 3 g/d.
Morphine IR (immediate release)	30 mg (po); 10 mg (IV, IM, SC)	2.5–10 mg po q4hr; 2.5–5 mg IV or IM q4h	po 30 min IV 5–10 min	4 h (po, IV)	1–2 doses	Caution if renal insufficiency because active metabolites can accumulate, increasing risk of prolonged sedation and possible neurotoxicity. Reduce dose if CrCl <50 mL/min. Consider alternative opioid medication if CrCl <20 mL/min.
Oxycodone IR	20 mg (po)	2.5–5 mg po q4–6h	10–15 min	3–6 h	3–4 doses	Daily dose limited if using fixed-dose combinations with APAP or NSAIDs. Some experts and limited data suggest that oxycodone is also safer than morphine in kidney failure.
Hydromorphone	7.5 mg (po); 1.5 mg (IM, IV, SC)	1–2 mg po q3–6h; 0.1–0.3 mg IV q2–3h	po 15–30 min IV 5 min	3–4 h (po, IV)	3–4 doses	Very potent; has fewer adverse effects in patients with renal failure and, therefore, is many experts' first choice for this population.

OPIOIDS (CONT'D)

COMMONLY USED LONG-ACTING OPIOIDS[c]

Medication	Morphine Equivalent (route)	Starting Dosage[c]	Analgesia Onset	Analgesia Duration	Titrate After:	Notes
Morphine SR (sustained release)	30 mg (po)	15 mg po q8–24h	N/A	8–24 h depending on formulation	3–5 d	Caution if renal insufficiency (see morphine IR). Most formulations cannot be split or crushed.
Oxycodone SR	20 mg (po)	10 mg po q12h	N/A	≤12 h	3–5 d	Some patients with moderate to severe pain may need q8h dosing instead of q12h. Most formulations cannot be split or crushed.
Fentanyl transdermal	See notes	12.5–25 mcg/h patch q72h	6 h after initial placement	72–96 h after removal of patch with no replacement	2 or 3 patch changes	**Not to be used in opioid-naive patients.**[b,c] Duration of effect may range from 48–96 h. May take 2 or 3 patch changes before steady state blood levels are reached. Incomplete cross-tolerance accounted for in conversion table when converting from morphine to fentanyl. When converting from fentanyl to other opioid, reduce equianalgesic amount by 50%.
Methadone	Converting morphine to methadone: 20 mg morphine =1 mg methadone. Converting methadone to morphine: 1 mg methadone = 3 mg morphine (If morphine >2,000 mg, consult specialist.)	1–2.5 mg po qd–bid	0.5–1 h	4–8 h after single dose 22–48 h with repeated doses	7 d	Very low doses are well tolerated. At higher doses, use with extreme caution due to long and variable half-life in older adults. Can be split or crushed; available as liquid.

MS (mg)	Patch (mcg)
30–59	12.5
60–134	25
135–224	50
225–314	75
315–404	100

[a]Starting doses for opioid-naive patients.
[b]Opioid-tolerant patients defined by the FDA as those who have had at least 60 mg of oral morphine (or morphine equivalent) daily for 1 week.
[c]Consult experts if inexperienced in prescribing long-acting opioids. Refer to general principles of opioid prescribing (above) for important considerations about starting long-acting opioids and appropriate dosages.

NONPHARMACOLOGIC MANAGEMENT

NONPHARMACOLOGIC TREATMENT OF PERSISTENT PAIN

Intervention*	Problems Studied	Outcomes
Exercise	Lower extremity osteoarthritis, chronic pain	Positive
Acupuncture	Back, knee, shoulder, neck pain	Positive
Massage	Back, neck pain	Positive
Cognitive behavioral training	Chronic pain	Positive
Guided imagery with progressive muscle relaxation	Chronic osteoarthritis pain	Positive
Music	Chronic pain	Positive
Self-management education	Chronic pain, low back pain	Positive
TENS	Knee, back pain	Mixed
Qigong	Back, neck pain	Mixed
Mindfulness-based meditation	Low back pain	Mixed

*All interventions have shown short-term efficacy and are typically well tolerated, with low risk and low cost.