Pain Management for Primary Care

Series: Seventeen

Special Populations and Pain

Module 17-1

Geriatric Pain

Module 17-1

Geriatric Pain

By the end of the module, you will be able to:

- Recognize the prevalence of Geriatric Pain.
- Define the most common causes of pain in the older population.
- Describe key differences in the treatment of the older patient with pain in contrast to younger patients.
- Determine safe treatment algorithms for common painful conditions in the older patient.
- Identify common treatment strategies for pain, that are dangerous for older patients.

We will review:

Topic One: Common Pain Syndromes in Older Patients

Topic Two: Treating Pain in Older Patients

Topic Three: Risks of Treatment in Older Patients and Clinical Advice

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Topic One

Common Pain Syndromes in Older Patients

With time profound changes occur in the human form. Gravity itself, aided by osteoporosis and muscle weakening, can cause bending or kyphosis in the spine. While we tend to think of these boney changes as painful, generally they are not. However, as nerves become impinged between compacted vertebrae, and muscles becomes cramped, pain frequently occurs.

Treating this pain is often as simple as gentle strengthening exercises for the back musculature, and gentle traction.

And typically profound rehabilitation is not necessary-there is no need to reset the clock to a youthful form of 60 years prior: it is enough to regain the strength that existed prior to a new pain. Often this is just last week, or last year, or before an unfortunate fall on the way to the mailbox just the day before.

By 2020, approximately 20% of the population will be over 65.

- 80% of elderly individuals will have musculoskeletal complaints.
- 40-60% will have severe osteoarthritis.
- Other significant causes of pain:
  - Cancer
  - Neuropathy
  - Abdominal pain (including: obstruction, constipation, urology related, biliary, pancreatic, colitis, hernia).

Notes

Geriatric pain is clearly a growing problem. Pain is one of the most frequent reasons for a doctor's visit, and the consequences of the treatment of painful conditions, which can include opiates and bed rest, can ultimately lead to the patient's loss of independence, and eventual nursing home placement.

Cancer becomes much more common in older patients.

Neuropathy, as nerves age and become less functional can cause significant pain. In individuals with spinal cord problems, or medical illnesses such as diabetes, or a history of alcohol abuse, neuropathy is particularly troublesome.

Causes of musculoskeletal pain are:

Condition	Underlying Factors	Related Sequela?
Osteoarthritis •Shoulder •Hands •Hips •Knees •Feet •Spine	•Age •Trauma, repeated •gravity	•impaired walking/mobility •impaired independence in activities of daily loving •need for joint replacement and rehabilitation
Osteoporosis •vertebral compression fractures/collapse •hip/bone fractures	•Age •Hormonal •Medication related •Disease related	•Spinal Stenosis •Degenerative Disc Disease •Nerve Root Impingement, Radiculopathy •Kyphosis results in muscular pain •Scoliosis
Foot, Ankle Disorders •Bunions	Footwear	Bunionectomy results in increase pain
Inflammatory Arthritis • i.e., Rheumatoid Arthritis	Autoimmune	Significant pain and impairment

Notes

Go through this chart, with explanations geared to the audience's level of expertise.

Give examples of disease related osteoporosis: Hyponatremia (bone is mobilized to release sodium; type I diabetics; spinal cord injured patients; HIV patients.

For foot and ankle disorders note that the surgery which mandates prolonged non-weight bearing, can result is such significant weakness that the patient is never able to walk again (as strength is difficult to regain in older patients).

Knowledge Check

The combination of Osteoarthritis and Osteoporosis can result in:

a. Spinal pain
b. Spinal stenosis
c. Nerve root impingements in the spine
d. Kyphosis
e. All of the above

Knowledge Check – Answer

The combination of Osteoarthritis and Osteoporosis can result in:

a. Spinal pain
b. Spinal stenosis
c. Nerve root impingements in the spine
d. Kyphosis
e. All of the above

Notes

As the spine bends, nerves become entrapped in "foramen" that were previously roomy. The same cause underlies spinal stenosis which results from crowding of the spinal cord in its boney canal.

Topic Two

Treating Pain in Older Patients

Exercise and patient activation is the foundational treatment.

- Resistance exercise increases muscle strength, muscle mass, and stabilizes joint movement.
- Aerobic exercise increases endurance, confidence, and decreases falls.
- Balance exercises decreases falls and increases/prolongs independent mobility.
- Flexibility exercises increase mobility and maintain optimal muscle strength.
- Functionally based exercises combine all of the above and allow practicing an actual "skill" or task.

Notes

Any type of exercise can be valuable. The most commonly cited types are the familiar "resistance" or weight based exercise, and "aerobic" previously thought to be the type of exercise that best conditioned the heart to be effective.

We now know that in fact, resistance exercise is good for promoting effective cardiac function as well by increasing muscle mass. And Tai Chi, long thought to be the most effective exercise for balance is no more effective than functionally based balance exercise programs, but is fairly effective for increasing muscle strength, an attribute not formerly given to it.

The newest thinking is that "Functionally based" exercise is most effective. Thus a patient would practice getting out of bed, walking, dressing, etc., in order to become better at these activities.

Exercises have an 'anti-aging' effect.

- Resistance Exercise improves insulin sensitivity, increases bone mineral density, aerobic capacity, and muscle strength and mass (type I and II fibers).
- Aerobic (Endurance) exercise improves maximum oxygen consumption, reduces systolic blood pressure, and improves cardiac function.
- Walking is an effective treatment for intermittent claudication.

Notes

Because strength can improve up to 227% with resistance exercise, activities such as stair climbing that used to produce muscle and joint pain, become less painful or pain-free.

Improving back strength with these same isometric resistance exercises, such as the "pelvic tilt" exercise for lumbo-sacral stabilization, will alleviate or eliminate the pain of degenerative disc disease, herniated discs, radiculopathies, etc.

To be effective, one needs to be doing at least 60-100% of their one-rep maximum, just like any younger person would (presumably though that maximum is a lower number:if not-good for them!).

In fact, the 10% decline in VO2 max that normally occurs/decade, can be halved by habitual exercise.

But to be beneficial, the exercise has to be high intensity, and frequent enough: at least 30 minutes, at least 3-5 times per week.

Aerobic exercise is best at postponing disability; once disability has been reached it is not very effective at reducing it-so rehabilitation in hospitals aims to get patients up and moving within a day or 2 of any illness or surgery.

Tai-Chi is an example of a low impact balance exercise.

- Balance exercises train the musculoskeletal system and the vestibular system and reduce the incidence of falls.
- Balance exercises should be combined with resistance exercises.
- Habituation exercises stress the vestibular system and have shown efficacy in treating benign positional vertigo.

Notes

Falls area major cause of injuries and pain in the older population, and thus eventually mortality. In sorting out the causes of a fall, strength is the first thing to evaluate, followed by the various causes of balance impairment (which include eyes, ears, vestibular, cerebellar, proprioceptive, etc. causes). Rehabilitation physicians will further evaluate the patient's environment, such as throw rugs, loose cords, etc.

Facilitator may detail:

An adequate exercise program should:
Be functionally based
Include flexibility component
Include strengthening components that are significant
Stress balance
Include an aerobic component that is real
Be fun

Exercise is fun!

- Exercise activates the endorphin, noradrenaline, and dopamine systems.
- Exercises break the vicious cycle of depression and hopelessness.
- Exercise increases mobility, independence, and self reliance.

Knowledge Check

Exercise alone is enough to resolve most geriatric pain symptoms?

a. True
b. False

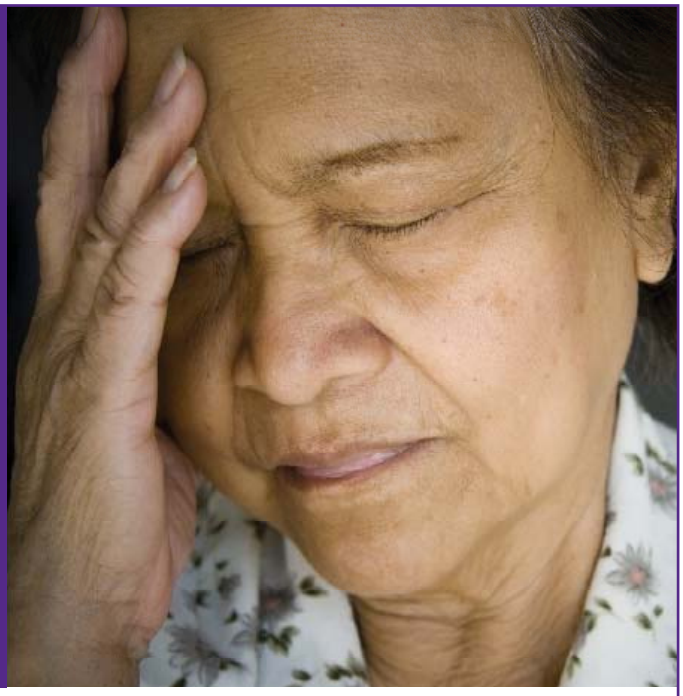
Knowledge Check – Answer

Exercise alone is enough to resolve most geriatric pain symptoms?

a. True
b. False

Topic Two

Risks of Treatment in Older Patients and Clinical Advice



A multimodal approach is recommended when treating geriatric pain:

- Physical modalities (ice, heat)
- Assistive Devices (stabilize joints, improve function
- Behavioral Approaches (meditation, mind-body, CBT-Cognitive Behavioral Therapy)
- Acupuncture (especially for arthritis, muscle/joint pain, headaches)
- Injections (joint, muscle) are generally well tolerated and should be done sooner to avoid loss of function.

Notes

Facilitator may detail:

Exercise underlies all other treatment modalities-in fact without strengthening affected segments of the spine injections are of no permanent help, if not entirely worthless.

Acupuncture is generally well tolerated, and very successful at treating most arthritic conditions. Generally treatment starts at one time per week, and then can be tapered for maintenance to once monthly.

Medications are last because they should be used to supplement other treatments, at best. NSAIDS are best not given chronically because, particularly in this age group, stomach distress generally occurs. They can be started to allow an exercise program to be initiated.

continued on next page

Notes - Continued

Meditation

CBT- Cognitive Behavioral Therapy, etc.

Variable success depending on the individual. Can be very helpful.

Opiates can be used sparingly to improve quality of life but the patient's overall cognition, and risk of falling, should be considered in their prescription.

Medical professionals tend to think of the pain of an older person as a "sub-acute" problem, and not as an emergency. Actually this is incorrect, since just the loss of a fraction of the strength of a person that was marginal in being able to stand and be independent just a week ago, may take them under the "functional bar" thus unable to be alone, and suddenly requiring hospitalization or nursing home placement. This should be considered an emergency. A careful evaluation, followed by prudent interventions (such as a simple knee joint steroid injection) should be offered immediately. If surgery is required, such as for spinal stenosis, a common condition in the elderly, and one that no amount of exercise will eliminate-it should be offered quickly: with waiting things can only deteriorate.

Interestingly, while rounding on the patients of a hospital ward who have just had surgery, such as joint replacements, you will not infrequently see individuals calling for their opiates, while not having a simple ice pack by their side. Ice is not only more effective for eliminating the pain and swelling caused by inflamed tissue after an operation, it's use can limit the amount of opiates needed, and thus limit the constipation/nausea/ cognitive costs which can increase the length of stay for an individual after these procedures. It should be standing order, and readily available on an even on-and-off basis for at least the first48 hours after surgery.

Purpose:

Stabilize joints, i.e. knee

Decreases stress on nerves, i.e. wrist splints for carpal tunnel syndrome

Stabilize Spine

Correct Posture

A "Do-it-Yourself" Effective Orthosis

Notes

Slide of patient with scoliosis and degenerative disc disease, before (on left) and within 10 minutes (on right) of donning a backpack with a 1 pint water bottle in it.

The light weight is sufficient to "remind" the patient that one shoulder is hiked up over the other, as all the weight was resting on the right shoulder-before she self-adjusted her posture!

Allow mobility if balance is impaired, i.e. walkers
Unload painful joints, i.e. cane (goes opposite the affected side)

Cautions: Compliance with walkers and walkers is resisted. Muscles under braces further weaken, unless exercised when the brace is removed.

Medications should be used sparingly and at a reduced dose.

- Medications should never be the main focus of pain treatment for the older patient. Numerous side effects limit their usefulness to temporary or occasional pm use only.
- Doses are typically 1/4-1/2 of those given to younger people.
- In older patients, medications commonly cause:
  - Decreased Balance
  - Decreased Cognition
  - Hypotension/hypertension
  - Hypovolemia
  - Electrolyte imbalance

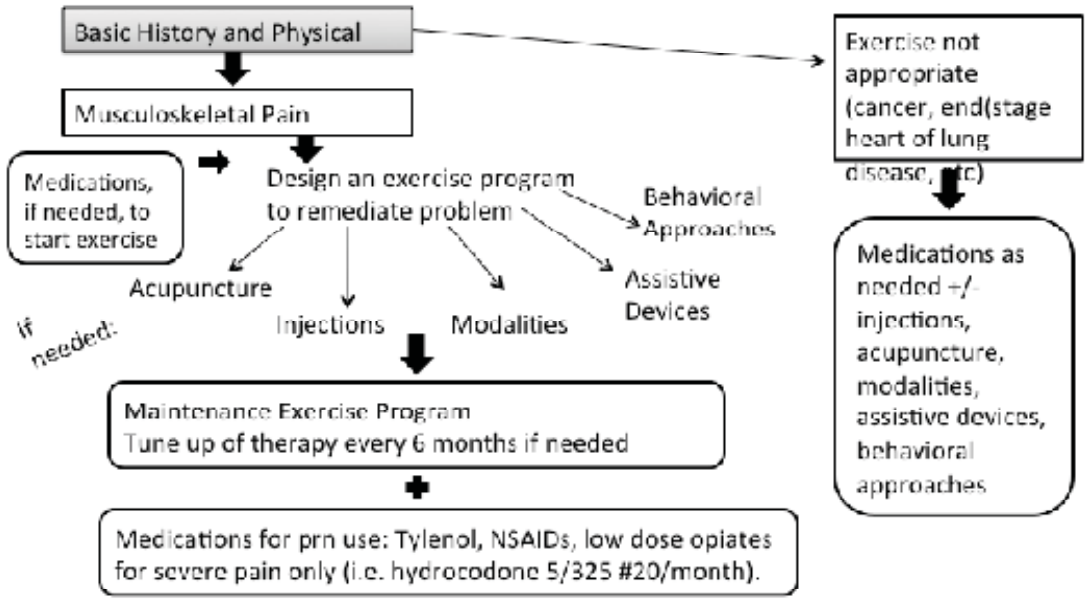
Notes

Facilitator may detail:

Medication side effects are so common, that they should always be screened for: and providers often fail to look for them. The elderly are rarely taken off medications that are no longer needed, and rarely have needed medications decreased in dose as they age. If we studied carefully the rolls of an average nursing home, one can only speculate at the fraction of individuals who reside their after the side effects of medications impacted their ability to function independently-with dire effects.

Medical professionals tend to think of the pain of an older person as a "sub-acute" problem, and not as an emergency. Actually this is incorrect, since just the loss of a fraction of the strength of a person that was marginal in being able to stand and be independent just a week ago, may take them under the "functional bar" thus unable to be alone, and suddenly requiring hospitalization or nursing home placement. This should be considered an emergency. A careful evaluation, followed by prudent interventions (such as a simple knee joint steroid injection) should be offered immediately. If surgery is required, such as for spinal stenosis, a common condition in the elderly, and one that no amount of exercise will eliminate-it should be offered quickly: with waiting things can only deteriorate.

An algorithm for treatment :



Notes

Go through algorithm

Use a stepwise approach when escalating pain medication.

- Acetaminophen is a first treatment. Limit it to 2grams/day due to the risk of liver damage.
- NSAIDs can be used only for a short period due to increased cardiovascular, stroke, and GI bleeding.
- Start low and go slow with anticonvulsants (gabapentin, pregabalin, carbamezapine) as they can cause confusion and loss of balance.
- Opioids may be appropriate for cancer pain, but they impair balance and cognition, interrupt sleep, and cause severe constipation.

Notes

For an acute condition, consider giving an NSAID for up to a week as a scheduled dose, and then going to as needed and less frequent dosing. It should simply never be the whole game plan as inevitably side effects will occur- whether in days or years, gastric intolerance in the elderly generally occurs.

Knowledge Check

Appropriate order of medications for most geriatric pain syndromes:

a. NSAIDs, acetaminophen, opiates, anti-convulsants
b. Acetaminophen, NSAIDs, anti-convulsants, opiates
c. Opiates, NSAIDs, acetaminophen, anti-convulsants
d. Opiates, NSAIDs, anti-colvulsants, acetaminophen

Knowledge Check – Answer

Migraine headache symptoms include_____, _____, and nausea.

a. NSAIDs, acetaminophen, opiates, anti-convulsants
b. Acetaminophen, NSAIDs, anti-convulsants, opiates
c. Opiates, NSAIDs, acetaminophen, anti-convulsants
d. Opiates, NSAIDs, anti-colvulsants, acetaminophen

Summary

Recall that chronic pain is very common among older patients, mostly due to arthritis and osteoporosis.

Exercise is the most important and helpful treatment. It increases strength, endurance, balance, cognitive function, and is also fun!

Use integrative treatments to relieve pain, including orthotics.

Use medication sparingly, most risks outweigh benefit, particularly opioids. If necessary, start low and go slow.

References

Braddom, R. L. (2010). Physical medicine and rehabilitation. Elsevier Health Sciences.

1997 NIH Consensus Conference On Acupuncture

Rayahin, J. E., Chmiel, J. S., Hayes, K. W., Almagor, O., Belisle, L., Chang, A. H., ... & Sharma, L. (2014). Factors associated with pain experience outcome in knee osteoarthritis. Arthritis care & research, 66(12), 1828-1835.

American Geriatrics Society Panel on Pharmacological Management of Persistent Pain in Older Persons. (2009). Pharmacological management of persistent pain in older persons. Journal of the American Geriatrics Society, 57(8), 1331.

Felson, D. T., Lawrence, R. C., Dieppe, P. A., Hirsch, R., Helmick, C. G., Jordan, J. M., ... & Fries, J. F. (2000). Osteoarthritis: new insights. Part 1: the disease and its risk factors. Annals of internal medicine, 133(8), 635-646.

Felson, D. T., Lawrence, R. C., Hochberg, M. C., McAlindon, T., Dieppe, P. A., Minor, M. A., ... & Goldberg, V. (2000). Osteoarthritis: new insights. Part 2: treatment approaches. Annals of internal medicine, 133(9), 726-737.

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