EMERGENCY MEDICINE CASES

EPISODE 34: GERIATRIC EMERGENCIES
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DELERIUM: The acute and fluctuating onset of **in-attention, with disorganized thinking, and/or altered level of awareness.** Unlike dementia (which progresses slowly) **delirium happens acutely.** In the elderly, 70% of delirium is initially "hypoactive," which can delay its detection in the ED.

Delirium is a very serious presentation, *which always has an underlying medical cause.* Length of stay in hospital, and in-hospital mortality ***increase x2*** in patients diagnosed with delirium, and delirium is not always reversible. Always assess the baseline functional status of elderly patients, and be suspicious of any acute decline.

Risk factors for Delirium:

- Physical restraints and/or unable to mobilize from their ED bed
- Prolonged stay in the ED (1,2)
- Under-treated pain
- Dehydration and malnutrition

To prevent delirium: avoid restraints, mobilize patients, manage pain adequately, and keep patients fed and hydrated. ***This can reduce delirium rates by up to 50%(1).***

Recognition is key: Patients sent home with unrecognized delirium had mortality rates 3–7x higher than pts without delirium(3). Recognition of the cause for the delirium is essential to a safe discharge. The cause must be treatable, and close observation and good follow up must be ensured.

"DIMES": Major causes of delirium in the elderly

Drugs and drug withdrawal - *largest category in older patients! Be very diligent at reviewing Rx and OTC meds.*

Infection - *the three most common are **PUS**: **P**neumonia, **U**TI and **S**kin*

Metabolic - *order and review BW carefully for metabolic causes*

Environmental - *too hot/ too cold*

Structural - *CNS events (spontaneous or traumatic subdural bleeding, stroke, etc.) Consider imaging when indicated (see below).*

Don't forget urinary retention and constipation/fecal impaction as a cause of delirium in the elderly.

Treatment of Delirium: When non-pharmacological treatments are inadequate for managing agitation, chemical sedation may help. **Avoid benzodiazepines** (unless treating a patient in alcohol or benzo withdrawal) as they worsen confusion, ataxia, and disinhibition in older patients. Start with **low-dose haloperidol** (0.5-1.0 mg po or IV if necessary, q30 minutes prn, and reassess after 3 doses). Add risperidone if haloperidol alone is not effective. **Note:** Avoid antipsychotic medications in patients at risk for prolonged QTc or extrapyramidal side effects (using other antipsychotic medications, or past history of EPS, Parkinson's)

When to order a head CT for a patient with delirium?

Consider a CT if any of the following:

- history of head trauma
- substantially impaired consciousness
- new focal neurologic findings
- no explanation from basic workup

FALLS

Falls are a common presentation for older patients, and injurious falls are associated with significant morbidity and risk of death.

Risk factors for multiple falls:

- a history of previous falls (especially falls leading to injuries)
- psychoactive medications
- impaired hearing and eyesight
- poor proprioception
- loss of mobility due to inactivity

How to manage the ED patient who has fallen:

Step 1: assess the cause of the fall

- evaluate risk factors, especially medication changes
- take a careful fall history, including causes and collateral information, to differentiate a fall from syncope
- in a patient with new onset of falls, look for underlying medical causes (cardiac disease, infection, GI bleed)

Step 2: assess injuries from the fall

Step 3: estimate risk of future falls and formulate a safe discharge plan

Step 4: begin a plan for prevention, which can begin after discharge

i.e. activities or classes that promote balance, and mobility (i.e. Tai-chi)

Before sending home a patient who has fallen: Do a basic "road test" of mobility and balance, which can predict future falls. A timed "up and go" test (the time to rise from a chair and take 6 steps) predicts future falls, with risk increased if the time is >15 seconds.

Enlist team members (geriatric nurse, physio, pharmacy), family, and community services to optimize the patient for their discharge.

After a fracture: outpatient management for osteoporosis should be prompted from the primary care physician for all elderly patients who have suffered a fracture from their low impact fall.

ATYPICAL PRESENTATIONS

Elderly patients may present with a severe illness (i.e. MI, AAA, subdural bleed, sepsis) in atypical ways. Be careful to avoid missing these subtle, atypical presentations. Elderly patients who are misdiagnosed initially have **2x increased mortality rate.** Keep an open mind for atypical presentations, and avoid **cognitive anchoring** to a "benign" diagnosis, which may cause you to miss something more serious.

WEAK & DIZZY

Patients presenting as weak and dizzy should be carefully investigated for life-threatening diagnoses.

1) infection
2) metabolic derangements
3) malignancies
4) depression
5) medication side effects or toxicity.

Digoxin toxicity: digoxin has a narrow therapeutic window and toxicity can occur at "pseudo-normal" levels in the elderly. The true effective dig level may be elevated by co-existing hypokalemia, and hypomagnesemia (eg: on diuretics). Remember to calculate and adjust for **creatinine clearance** when managing any medications that are renally cleared (mdcalc.com).

DRUGS TO WATCH IN THE ELDERLY

Drugs with *high-risk* and *low benefit:*

1) Benzodiazepines - *can cause severe agitation and disinhibition, and side effects last a long time in elderly*
2) Codeine - *a weak analgesic with strong opioid side effects*
3) NSAIDS - *may trigger acute renal failure, exacerbate hypertension, and cause severe gastritis in the elderly*
4) Anticholinergics - *side effects, such as delirium, are common in elderly*

Drugs with *high-risk* but also *high-benefit*:

1) Anti-coagulants - *approx. 2/3 of all drugs interact with warfarin, especially antibiotics, high doses of tylenol, amiodarone, PPIs, SSRIs, and anticonvulsants. When making any medication changes, arrange close follow up for INR surveillance, and inform them of bleeding risk & signs.*
2) Hypo-glycemics - *all hypoglycemics may precipitate low glucose, and falls!*
3) Opioids - *CNS effects of opioids are higher, so start at lower doses. Remember pain also contributes to delirium (4), so treat to effect, and advise about side effects.*

ACUTE CORONARY SYNDROME IN THE ELDERLY

The elderly have a higher mortality rate in the 72 hours after a heart attack than younger patients, and have more to gain from rapid interventions. Dx is often delayed as elderly patients with MI often present **later**, with **atypical symptoms** and **less definitive ECG findings**.

Older patients are more likely to have a "painless heart attack," and if they do have pain, 20% will describe it as "burning" or as "indigestion." Patients >85 years old are more likely to present with SOB than with CP and ECG is non-diagnostic in 43% (compared to only 23% of patients under age 65). The elderly are also more likely to have pre-existing ECG abnormalities that make new ischemic changes harder to identify.

ABDOMINAL PAIN IN THE ELDERLY

About 30% of elderly patients who present with a chief complain of abdominal pain will require surgery, and their mortality rate is much higher (up to 7x higher than younger patients) (5).

Vital sign abnormalities (tachycardia, fever, hypotension) are less likely present in older patients, even with severe intra-abdominal infections. A "normal" blood pressure may actually represent *relative hypotension* in the older patient whose BP is typically much higher. *Older patients are less likely to mount a fever*, and medications (such as B-blockers) *blunt tachycardic response to anemia, fever or sepsis*.

Peritoneal signs are often absent, rebound less specific, and visceral pain is more challenging to localize in older patients.

The 3 most common surgical causes of abdominal pain in the elderly are:

1) **cholecystitis**—consider this when working up sepsis in older patients, who may present ***without*** localized tenderness, nausea, fever, vomiting, or elevated WBC but have high mortality (6)

2) **bowel obstruction**—femoral hernia is a commonly missed cause of bowel obstruction in the elderly

3) **appendicitis**—presents atypically in the elderly with higher rates of perforation and mortality (7)

Mesenteric ischemia—ask about "abdominal angina" and have a low threshold for ordering a serum lactate especially if they have "pain out of proportion" with CVD risk factors or Afib. If you're thinking gastro in older pt, consider mesenteric ischemia

Remember non-abdominal causes of abdominal pain in the elderly. (MI, pneumonia, PE, DKA/AKA, zoster, hypercalcemia, and medication toxicity)

Have a low threshold for CT imaging, which has a higher yield for decision making in older patients (8).

For pain control: Our experts recommend hydromorphone for pain control, as it is not renally excreted.

Managing constipation in the elderly is important! Under-treatment of constipation can lead to premature death. Outpatient meds- our experts recommend a combination of lactulose ***or*** PEG ***plus*** a sennoside ***or*** bisacodyl. See this recent review for further tips (9).

For further learning, check out www.geri-em.com

Six online modules cover major topics in geriatric emergency medicine, including key articles.

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