

## Primary Care RAP November 2020 Written Summary

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### Intro: Constipation

*Aisha Lofters MD, Neda Frayha MD*

#### Pearls:

- ◆ Constipation in older adults is a common problem that can have significant morbidity.
- ◆ Lifestyle modifications are the mainstay of treatment and medications (five different classes - osmotic agents, stool softeners, bulking agents, stimulants, and prokinetics) may also help.

- **Epidemiology:**

- Prevalence
  - In people over 80 is 50%
  - Seniors living in the community is 20-40%
  - Seniors living in institutional setting 60-80%
- More likely in women than men
- More likely in lower socioeconomic status and people who are not white

- **Sequelae:**

- Fecal impaction
- Anorexia

- Nausea
- Abdominal pain
- Trigger for syncopal episode
- Trigger for ischemia
- Money: Long-term care homes in the US spent more than \$2000 per resident per year on managing constipation
- **Definitions:**
  - Broadly speaking it is more about incomplete passage of stool rather than the frequency
    - Some patients may go three times a day and others may go every 3 days
  - Rome criteria are more for research studies and you must have at least 2 of the following:
    - 1. Fewer than three spontaneous bowel movements per week
    - 2. Straining for more than 25% of defecation attempts
    - 3. Lumpy or hard stools for at least 25% of defecation attempts
    - 4. Sensation of anorectal obstruction or blockage for at least 25% of defecation attempts
    - 5. Sensation of incomplete defecation for at least 25% of defecation attempts
    - 6. Manual maneuvering required to defecate for at least 25% of defecation attempts
- **Common causes (particularly in the elderly):**
  - Functional - no clear etiology
  - Diet:
    - Decreased fluid intake
    - Decreased fiber intake



- Endocrine:
  - Diabetes
  - Hypothyroidism
- GI:
  - Diverticulosis
  - Strictures
  - Decreased colon motility that happens with age (not a lot of evidence to support this)
- Metabolic:
  - Hypercalcemia
  - Hypomagnesemia
- Neuro:
  - Parkinson's
- Psych:
  - Depression
  - Anxiety
- Medications:
  - Antacids that contain calcium or aluminum
  - NSAIDs
  - Antihistamines
  - Iron supplements
  - Calcium channel blockers
  - Diuretics
  - Tricyclics
  - Antipsychotics
  - Anticholinergics
- **Key points of history:**

- Changes in diet (fiber) or fluid intake?
- Recent new diagnoses
- New medications
- Red flags symptoms: black tarry stools, frank blood in stools, unintentional weight loss, associated vomiting, severe abdominal pain
- **Physical exam:**
  - Abdominal exam - may be able to feel the stool itself in the left lower quadrant
  - Anal exam - hemorrhoids, anal masses, anal stricture
- **Additional studies:**
  - Usually history and physical will be enough but you may consider checking a TSH, calcium level or hemoglobin; X-ray for fecal impaction if someone is cognitively impaired or immobile
- **Treatment:**
  - Address the underlying etiology if there is an obvious one. Many time there aren't, so you'll want to focus on the next few things
  - Lifestyle:
    - Give yourself adequate time to toilet
      - Give yourself 30 minutes to an hour after breakfast to let your body rest and know that it is time to have a bowel movement
    - Have a regular toileting time
    - Good positioning when toileting - knees at or above level of knee
    - Increase water intake by 1.5-2 times
      - Maybe encourage prune, apple or pear juice
    - Increase fiber intake to 20-30g per day: needs to be gradual and accompanied by increased fluid intake
    - Increase physical activity

- Medications: (most of have little evidence behind use)
  - 1. Osmotic agents: promote secretion of water into the colon
    - Lactulose and polyethylene glycol (PEG)
    - Side effects: bloating, flatulence, abdominal pain and diarrhea
  - 2. Stool softeners: ionic surfactants that ease the interaction of water with stool
    - Docusate
  - 3. Bulking agents: keep water in the stool and helps body increase bowel movement frequency because of feeling increased bulk
    - Fibers - psyllium fiber, wheat bran, guar gum and galacto-oligosaccharides
  - 4. Prokinetics: act on serotonin receptors to induce peristalsis (uncommonly used)
    - Cisapride and tegaserod (older that are no longer used because of cardiac risk) and now prucalopride
    - Side effects: abdominal pain, nausea, diarrhea and headache, maybe risk of increased suicidality
  - 5. Stimulants: increase intestinal motility
    - Senna and bisacodyl
    - Side effects: abdominal pain, electrolyte imbalances, decreased efficacy over time with regular use

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## Approach to Joint Complaints

Uzma Haque MD, Neda Frayha MD

### Pearls:

- ❖ **Three questions can really help hone in your joint complaints in primary care:**
  - 1. *Is the pain within the joint (intraarticular) or around the joint capsule (periarticular) or a referred process?*
  - 2. *If in the joint, is it arthralgia or arthritis?*
  - 3. *Is it inflammatory or non-inflammatory?*
- ❖ **If you're concerned about inflammatory arthritis, start with an ANA, rheumatoid factor and anti-CCP antibodies.**

### ● Joint pains: three questions

- 1. Is the pain within the joint (intraarticular) or around the joint capsule (periarticular) or a referred process?
- 2. If in the joint, is it arthralgia or arthritis?
  - Arthralgia = joint pain (symptom)
  - Arthritis = inflammation, damage, deformity of the joint
- 3. Inflammatory or non-inflammatory

### ● Articular vs. periarticular

- Articular = at the point where the bones come together at the hinge
- Periarticular = joint anatomy points to potential areas of pathology:
  - Tendon connects muscle to bone = tendinitis
  - Ligament connects bone to bone
  - Bursa encapsulates the joint = bursitis
  - Connective tissue where the tendon or ligament insert into the bone = enthesitis

- Referred pain = may be pain from another part of the body that is presented as pain at that particular joint
  - Consider the parts of the joint proximal and distal to the area of pain
- **Arthralgia vs. arthritis**
  - Pearl: joint SWELLING is a cardinal feature of arthritis (joint inflammation) NOT arthralgia
- **Inflammatory vs. non-inflammatory**
  - Non-inflammatory - breakdown of cartilage leading to friction/pain at the bone-bone interface
  - Inflammatory - initial insult comes from the immune system
    - Examples: rheumatoid arthritis, psoriatic arthritis, gout, lupus, chronic infections (HIV, Hep B/C, Lyme), thyroid disease, inflammatory bowel disease, sarcoid
- **Questions to distinguish inflammatory v. non-inflammatory arthritis:**
  - 1. Does your patient have morning stiffness in the joint that lasts for longer than 60 minutes?
    - If lasting morning stiffness, it is highly predictive for inflammatory joint symptoms
  - 2. Is it worse in the morning or evenings?
    - Inflammatory joint disease are worse in the morning, better by 12-1pm and then worse again in the evening
  - 3. Does activity make it better or worse?
    - Inflammatory joint disease usually gets better with movement
- **Diagnostics:**
  - Serologies should help you confirm your clinical suspicion and either rule in/out considerations in your mind
  - First screen: ANA, rheumatoid factor (RF), anti-CCP antibodies



- Pearl: ANA titer greater than 1:160 - below is very non-specific
- Anti-CCP antibodies = rheumatoid arthritis with sensitivity. Positive in about 85% of patients with RA, and 98% specific
- If RF is negative, that does not rule out RA
- Second pass: complements, double-stranded DNA, anti-Ro, anti-La, anti-smith antibodies

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## COPD UPDATES

*Kathryn Robinett MD, Paul D Simmons MD*

#### Pearls:

- ❖ COPD treatment is really symptom-driven. Other than LAMA's, if the treatment is not working with the patient, there is no reason to harp on adherence.
- ❖ Oxygen is good and has a mortality benefit if a patient's resting oxygen saturation is less than 88%.
- COPD refresher:
  - COPD encompasses several diseases
    - Emphysema - destruction of elastin typically by tobacco or biomass smoke

- Chronic bronchitis - cough that lasts for more than 3 months for two years in a row
- Chronic asthmatics that develop fixed obstruction
- COPD-asthma overlap
- History
  - 80-90% have smoking history in the US, usually 40 pack years or some second hand exposure
  - Other exposure - wood burning stove or chemicals
  - Limiting activities as a result of trouble breathing
  - Cough
- Physical
  - Wheeze
  - Diminished breath sounds
  - Widened chest depth
- **Diagnosis:**
  - Pulmonary function tests - FEV1/FVC < 70 +/- reversibility with bronchodilator (there is overlap with asthma and it is not cut and dry)
    - Pearl: get PFTs while patients are at their best (ie: not in the hospital while recovering from an exacerbation, etc.)
    - Pearl: to distinguish between asthma and COPD, triggers are important. COPD is triggered by exertion. Asthma tends to have an allergy trigger
  - CBC with differential to look for eosinophils
    - If there is eosinophilia component, lean towards an ICS rather than LABA/LAMA
  - CXR to see hyperinflation but in reality often skip to chest CT to really see the lung parenchyma and screen for lung cancer

- BMP to look at bicarbonate level
- Alpha-1 antitrypsin
- **Classification and Treatment:**
  - GOLD criteria now are based on an ABCD ranking of symptoms and exacerbations
    - Group A (no exacerbations, minimal symptoms) - may start LAMA or monitor
    - Group D (frequent exacerbations and symptom burden) - LAMA/LABA/ICS
- **Supplemental oxygen:**
  - Resting hypoxemia alone is not a reason to put someone on oxygen; however, some patients feel better with it and insurance will cover it
  - There is no evidence giving someone oxygen if they desaturate prolongs their life
- **Prophylactic antibiotics to prevent COPD exacerbations:**
  - Evidence points against using antibiotics for an exacerbation
  - Prescribing azithromycin more for antiinflammatory effect over antibacterial effect is done to prevent COPD exacerbations in those who have multiple exacerbations and are symptomatic
- **Oral mucolytics:**
  - Inositol cysteine is an over-the-counter anti inflammatory supplement that is worth a try for patients with a severe productive cough

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## Oncofertility options

*Lauren Roth MD, Neda Frayha MD, Matt DeLaney MD*

### Pearls:

- ❖ The ideal time for patients with cancer to consider fertility options is prior to treatment and referral to a specialist at that time.
- ❖ Pre-cancer treatment options for men consist of freezing sperm.
- ❖ Pre-cancer treatment options for women are freezing of the egg (recommended), part of the ovary (experimental) or fertilized embryo (not recommended).
  
- **Epidemiology:**
  - Growing population of people who had cancer in childhood because treatment is becoming better
  - Over 100,000 people less than 45 years of age are diagnosed with cancer each year
  - Many treatments are gonadotoxic
  
- **Referral for fertility counseling:**
  - Ideally should happen prior to treatment but often happens after the fact
  - Consider referring them when the diagnosis is made, even though they may be coordinating across a medical oncologist, surgeon, radiation oncologist while also trying to sort out insurance
  
- **Counseling about fertility:**
  - Explain normal reproductive physiology and the ways in which cancer treatment can impact fertility
  - Discuss choices for preserving fertility
  - Potential genetic causes of their cancer that could present in their gametes and increase future children's risk of cancer

- **Options for males before treatment:**
  - Freeze sperm prior to treatment (best time to collect) and keep it until ready to use
- **Options for females before treatment:**
  - Freeze eggs (preferred method)
    - Requires hormonal treatments so that you can get more eggs at a time during the menstrual cycle
    - Hormones are given through subcutaneous injections self-administered or with family
    - Monitored with bloodwork and ultrasound on a weekly or even daily basis at times
    - Same complications like ovarian hyperstimulation syndrome
    - Procedure of retrieving eggs:
      - IV sedation
      - Transvaginal ultrasound to visualize the follicle
      - Needle through vaginal wall attached to the ovary with the follicle. Suction removes the follicle.
      - Takes about 20-30 minutes and patient goes home after an hour
    - Procedure of freezing:
      - Advanced in the freezing method. Old methods led to ice crystals that damaged the egg
      - New method is called vitrification whereby the egg is put into nitrous oxide leading to an immediate freeze
  - Freeze ovaries or part of them (experimental method)
    - May take a vascular pedicle and significant amounts of tissue for freezing to transplant again later



- Another approach is cortical strip freezing - laparoscopically takes small strips off the surface of the ovary where the eggs are and then freezes them when the person is ready to get pregnant again. They are then re-implanted in the ovary or another part of the body where it is easy to retrieve the eggs (like under the skin!)
- Freeze a fertilized eggs (not recommended)
  - Generally not recommended because divorce rates are high in cancer patients and the frozen fertilized eggs belongs to both partners
  - Each center does it slightly differently as to when they freeze. Some freeze immediately while others will wait until the blastocyst stage
- **Options after treatment:**
  - Donor eggs or sperm
  - Typical ovulatory stimulating medications
  - Gestational carriers in cases where the female had uterus removed or lots of pelvic radiation and carrying pregnancy isn't advised or even possible
    - Women carriers can no longer donate both their egg and the uterus, just one or the other
  - Adoption

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## The Big Picture: Elderhood Parts 1 & 2

*Louise Aronson MD, MFA, Neda Frayha MD*

### Pearls:

- ◆ **When working with elders, consider the following strategies: start by understanding goals, assess functional status, avoid over controlling chronic illnesses like diabetes and hypertension, keep Beers criteria on your radar, and consider age with tools like ePrognosis when considering “routine” screenings.**
  
- **Definition:**
  - Elderhood is over 65
- **Why it matters?**
  - Certain disease are more or less prevalent at different ages
  - Responses to treatment are different based on age
  - Our policies and structures reinforce unconscious bias
    - **Examples:**
      - Older adults make up 30-50% of the inpatient services and overall are disproportionately represented in healthcare services utilization. However, our training falls far short of caring for this population.
      - Vaccine schedules are incredibly detailed for pediatrics but > 65 there are no gradations
      - Pill bottles are child proof but not easy to use for older adults
- **Examples of microaggressions?**



- **Condescension:** Telling someone in their 90's, "Oh, you're not older, look at you, you're still up and at 'em"
- **Infantilization:** Saying to an elderly woman, "Oh, hello there, young lady, I know it's not polite, but how old are you?"
- **Elder speak:** speaking down to someone using the tone of voice you use for a small child or pet
- **Ways in which the system reinforces microaggressions, ageism:**
  - Short visits that make both the clinician and patient feel unnecessarily rushed and places each other at odds
  - Medical training does not provide adequate time for taking care of the geriatric population that makes up a large majority of healthcare utilization
  - Hospitals are not set up for geriatric populations
- **Strategies for working with elders (that also help us work with patients of all ages):**
  - Start with "Tell me what brings you in today, and also can you give me a sense of who you are and what your health has been like?" for context about who the person is in front of you
  - Understand goals of care: "What matters to you most in your life right now and what are you looking forward to in the next year or five years?"
  - Document and understand functional status - gait speed, grip strength. These are often better predictors of hospitalization and outcomes of care than other clinical metrics
  - Recognize that making a person stronger and fitter at any age is really important and that physical therapists don't get any more training in this than doctors and nurses
    - You can put muscle on a 90-year old. It will take longer but it is possible and requires putting weight in that person's hands.

- Don't overcontrol chronic diseases like diabetes (A1c 7.5-8%) and hypertension
- Dive into polypharmacy - know the Beers criteria (check out PC RAP April 2018)
- Consider age in “routine” screenings. Use ePrognosis (<https://eprognosis.ucsf.edu/>) to understand life expectancy
- **Better conceptualize age:**
  - If taking care of older patients is disappointing or depressing or frustrating, it may be because your training has not given you the necessary knowledge and skills to do, but they can be acquired
  - Reframe older age of a positive and not a negative thing - “Tell me what the best things about your life are right now.”
  - Reframe our questions to elders the assume a different “work” - volunteering, taking care of grandkids, hobbies
  - Push elders to value themselves and reflect on purpose and meaning
  - Focus on areas of lost function that may have eroded more recently as an intervention point to encourage those people to modify and get that function back
  - Encourage growth and creativity
  - Explore diagnoses fully without writing them off to old age:
    - Walk them through options to further work-up and if it feels they would benefit from knowing, move forward with it

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## What's that Lab? Monocytosis

*Paul D Simmons, MD*

### Pearls:

- ◆ **Monocytosis is terribly nonspecific and only worrisome if it is more severe, persistent and accompanied by a history of hematologic malignancy.**
  
- **Monocytes:**
  - Type of leukocyte that differentiates into the myeloid non-B and non-T cell lymphocyte line like macrophages, dendritic cells
  
- **Automated vs. manual cell counts:**
  - Manual leukocytes are not as accurate because they rely on a person to count hundreds of cells
  - Automated counts go through a machine that counts thousands of cells
  
- **Differential for monocytosis:**
  - Pregnancy
  - Asplenic state - usually the spleen gets rid of old blood cells
  - Inflammatory
  - Major depression - may be related to stress hormone level elevation
  - Corticosteroids
  - Infections - including exotic ones like brucellosis, bacterial endocarditis, tuberculosis, malaria, typhoid fever, syphilis, varicella and trypanosomiasis
  - Chronic myelomonocytic leukemia (CMML) - consider in an older patient with persistent monocytosis
  - Hematologic malignancies (AML, CML, Hodgkin's lymphoma)
  
- **When to evaluate further:**



- Prior history of myelodysplastic syndrome because it may be a sign that it is transitioning to CMML
  - Persistent (>3 month) peripheral monocytosis (absolute monocyte count > 1000/microliter) and > 10% of the entire white blood cell differential count with less than five blasts
- **Connection to MI:** the more severe peripheral monocytosis after an MI, the higher the risk of serious complications such as left LV dysfunction and aneurysm
  - Peak monocytosis, at or above 900/uL, is associated with complications of left ventricular dysfunction and left ventricular aneurysm, and suggests a possible role of monocytes in left ventricular remodeling following reperfusion AMI.
  - Sensitivity for left ventricular aneurysm of 60%, for left ventricular dysfunction of 70%, and for long-term cardiac events of 75%.
  - Specificity for left ventricular aneurysm of 73%, for left ventricular dysfunction of 80%, and for long-term cardiac events of 81%.
  - Daily monitoring of peripheral blood monocyte counts may have prognostic value in patients with acute myocardial infarction.

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## Dog & Cat Bites

*Paul Simmons, MD; and Matthieu DeClerck, MD*

### Pearls:

- Dogs are responsible for the majority of animal bites in the US, and dog bites are more likely to cause injury while cat bites more likely cause infection.
- When exploring a dog bite wound, be sure you are able to visualize the base of the wound for associated tendon, bone or joint involvement.
- Prophylactic antibiotics should be reserved for high risk wounds.
- Primary closure of a low risk bite wound is a safe approach.
  
- **Background:**
  - 2-5 million animal bites per year in the US (most from domestic pets), yet only 10-20 animal bite fatalities annually.
  - While dog bites are more likely to cause serious injury, they are less likely to result in infection.
  - Dogs cause the vast majority of bite deaths due to their mechanics and size.
    - The PSI from a dog bite is 250-400. For a cat it is only 20.
    - Dog teeth tend to be rounded and are designed for tearing and grinding of bones. Cat teeth are sharp and made for grabbing prey.
- **Dog bites:**
  - Account for 80-90% of animal bites.
  - In 70% of bites, the victim knows the dog. 50% of the time the bite is provoked.

- Children are the most common victims (boys>girls). Their heads are at dog level, they are loud, and they move very suddenly.
- Adolescents and adults tend to get bitten on the extremities while children usually sustain head/neck bites.
- **Cat bites:**
  - 8-10% of animal bites.
  - Adult women are the most common victims.
  - Most reported bites are provoked and involve the extremities.
  - 49% risk of infection overall (vs 7% for dogs).
- **Initial approach to wound management:**
  - Clean the skin surface.
  - Irrigate
    - Volume and pressure are key!
    - Can use tap water.
    - 20 ml or larger syringe with a large-gauge angiocath works well for delivering high pressure.
  - Explore
    - You should be able to see the bottom of it.
    - Use a tourniquet if bleeding is impairing visibility..
    - Examine tendons through range of motion.
  - Debride dead tissue.
    - If the wound looks chaotic, try to make it recognizable.
  - Evaluate neurovascular and tendon injury prior to anesthetic.
  - Get radiographs if there is concern for bone injury and/or retained foreign body (ie. teeth, claws, rocks).
  - Check vaccination status and update tetanus prn.
  - Discuss rabies risk.
    - Rabies is very rare in the US, as the majority of dogs and cats are vaccinated for it.
    - If the history is concerning (such as for an international traveller bitten by a dog), what is recommended is immediate human rabies immune globulin (HRIG) and the rabies vaccine. HRIG is infiltrated around the wound and the vaccine is given on days 0, 3, 7, and 14.
    - For most bites, patients need rabies reassurance.
  - Report the bite, following state and local laws.

- **Which animal bites warrant prophylactic antibiotics?**
  - Consider antibiotics for these high risk wounds:
    - Bites to the hand, especially when deep.
      - A 2008 Cochrane review looking at infection rates for dog, cat and human bites found that across all species, bites to the hand had an increased risk for infection.
    - Bites with associated venous and/or lymphatic compromise.
    - Those near prosthetic joints.
    - Cat bites (higher risk due to the deep penetration of their needle-like teeth).
    - Crush injuries
    - Delayed presentation (>6-12 hours on arm or leg, > 12-24 hours for face)
    - Bites in patients with diabetes or immunosuppression
  - Patients with low risk wounds, even if sutured, do not require antibiotics. The baseline infection risk is only 5-7%.
  - Recommended antibiotics:
    - Amoxicillin-clavulanate 875 mg bid
    - If penicillin allergic:
      - doxycycline or
      - clindamycin + fluoroquinolone or
      - clindamycin + trimethoprim-sulfamethoxazole.
- **Is primary closure an option for wounds due to animal bites?**
  - Never repair small puncture wounds.
  - High risk bites (as listed above) should be closed by secondary intention.
  - **Bites which are NOT high risk can safely be sutured.**
    - A study of 169 dog bites found no difference in the rate of infection (7%) between the primary and secondary closure approach.
    - Another study of 145 animal bites which were all closed primarily found an infection rate of only 5%.
    - Skin adhesives should be AVOIDED (they don't allow drainage).
- **Discharge recommendations:**

- Wound check in 48 hours.
- Return precautions for immediate evaluation if redness, pain, warmth, discharge, or fever develops.
- Surgical referral for bites that are high risk, involve the hand/joint/bone/tendon, or are extensive.

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## **PAPER CHASE #1: A Randomized Trial of Multifactorial Strategy to Prevent Serious Fall Injuries**

*Steve Biederman MD, Tom Robertson MD*



Bhasin S, Gill TM, Reuben DB, et al. A Randomized Trial of a Multifactorial Strategy to Prevent Serious Fall Injuries. *N Engl J Med.* 2020;383(2):129-140. doi:10.1056/NEJMoa2002183

**Pearls:**

- ❖ **There was no significantly lower rate of serious fall injury.**
- **Objective:** To assess the effectiveness of an outpatient multifactorial fall intervention program to prevent fall injuries.
- **Background:** 1 in 4 older adults experiences a fall each year accounting for 30,000 deaths, 3 million ED visits and 800,000 hospitalizations annually.
- **Method:** cluster-randomized control trial of 86 primary care practices (urban and rural) randomized to an intervention that was a nurse-driven assessment of modifiable risk factors for fall injuries that included an individualized plan to reduce risk factors. The control group received pamphlets about falls from the CDC and were encouraged to discuss with their PCP.
- **Results:**
  - 5400 adults aged 70 years or older
  - Time to first serious fall injury no different between the groups
  - Rates of death were similar as were serious adverse events
  - Fall rates in both groups were lower than expected
- **Bottomline:** There was no significantly lower rate of serious fall injury.

## **PAPER CHASE #2: Compression Therapy to Prevent Recurrent Cellulitis of the Leg**

*Steve Biederman MD, Tom Robertson MD*

Webb E, Neeman T, Bowden FJ, Gaida J, Mumford V, Bissett B. Compression Therapy to Prevent Recurrent Cellulitis of the Leg. *N Engl J Med.* 2020;383(7):630-639.  
doi:10.1056/NEJMoa1917197

**Pearls:**

- ◆ **Compression therapy resulted in lower incidence of recurrent cellulitis.**
  
- **Objective:** To assess the efficacy of daily LE compression to prevent recurrent cellulitis in patients with chronic LE edema
- **Background:** For patients with LE edema up to 50% have recurrence
- **Method:** single-center non-blinded trial involving patients with chronic lower extremity edema and recent diagnosis of cellulitis randomized to either education vs. daily compression applied by a trained therapist eventually transitioned to custom knee-high compression. Followed at least every 6 months to 3 years.
- **Results:**
  - 84 patients
  - At interim analysis the cellulitis recurrence was 15% in the intervention group vs. 40% in the control group so the trial was stopped early.
  - No adverse outcome and no quality of life difference between the groups
- **Bottomline:** Compression therapy resulted in lower incidence of recurrent cellulitis

**PAPER CHASE #3: A Multifaceted Antimicrobial Stewardship Program for the Treatment of Uncomplicated Cystitis in Nursing Home Residents**

*Steve Biederman MD, Tom Robertson MD*

Nace DA, Hanlon JT, Crnich CJ, et al. A Multifaceted Antimicrobial Stewardship Program for the Treatment of Uncomplicated Cystitis in Nursing Home Residents [published online ahead of print, 2020 May 11]. *JAMA Intern Med.* 2020;180(7):1-9.  
doi:10.1001/jamainternmed.2020.1256

**Pearls:**

- ◆ **A low-intensity, multifaceted intervention was associated with improved antibiotic prescribing for uncomplicated cystitis without adverse outcomes.**
- **Objective:** To determine the association of a antimicrobial stewardship program with reduction in unnecessary antimicrobial use for unlikely cystitis in nursing home residents
- **Method:** randomized QI initiative designed to optimize antimicrobial treatment for uncomplicated cystitis. The intervention group was education for nursing, pharmacy, prescribing staff, dissemination of guidelines for diagnosis and treatment of uncomplicated cystitis and then providing audit and facility feedback. Followed for one year.
- **Results:**
  - Randomized 12 facilities to intervention and 13 facilities to control.
  - Intervention facilities had higher rates of UTIs than controls prior to intervention, but not statistically significant
  - Intervention group had 27% less antimicrobial usage
  - Control group had higher rates of c. diff infection
  - No difference in hospitalization or deaths
- **Bottomline:** A low-intensity, multifaceted intervention was associated with improved antibiotic prescribing for uncomplicated cystitis without adverse outcomes

## PAPER CHASE #4: A Randomized Controlled Trial of Lung Ultrasound-Guided Therapy in Heart Failure

*Steve Biederman MD, Tom Robertson MD*

*Araiza-Garaygordobil D, Gopar-Nieto R, Martinez-Amezcuca P, et al. A randomized controlled trial of lung ultrasound-guided therapy in heart failure (CLUSTER-HF study). Am Heart J. 2020;227:31-39. doi:10.1016/j.ahj.2020.06.003*

### Pearls:

- ◆ **Incorporation of lung US significantly reduced the risk of urgent visits for worsening CHF.**
  
- **Objective:** To assess the reduction in adverse events with the use of lung US in CHF patients
- **Background:** Point-of-care ultrasound may guide decisions about volume status of patient who may require admission for heart failure exacerbations
- **Method:** single blinded randomized control trial of patients with recent heart failure admission. Randomized on discharge to either lung-guided outpatient diuresis versus usual care. Followed total of 6 months.
- **Results:**
  - 126 patients split into two groups
  - Mean ejection fraction was 31%
  - Composite outcome (urgent primary care visit, hospital visit, death) occurred in 32% of lung ultrasound group vs. 50% in the control group
  - No difference in kidney injury or electrolyte abnormalities

- **Bottomline:** Incorporation of lung US significantly reduced the risk of urgent visits for worsening CHF

## **PAPER CHASE #5: Effect of a Workplace Wellness Program on Employee Health and Economic Outcomes**

*Steve Biederman MD, Tom Robertson MD*

*Reif J, Chan D, Jones D, Payne L, Molitor D. Effects of a Workplace Wellness Program on Employee Health, Health Beliefs, and Medical Use: A Randomized Clinical Trial [published online ahead of print, 2020 May 26]. JAMA Intern Med. 2020;180(7):952-960. doi:10.1001/jamainternmed.2020.1321*

### **Pearls:**

- ◆ **Among employees of a large US warehouse retail company, a workplace wellness program resulted in greater rates of positive self-reported behaviors but no significant differences in clinical measures of health, healthcare spending and utilization, and employment outcomes.**
- **Objective:** To evaluate health outcomes and behaviors with a multicomponent workplace wellness program resembling programs offered by US employers
- **Method:** Randomized control trial of wellness program by worksite over the course of 18 months
- **Results:**
  - 2000 workers in each group
  - Significant increase in self-reported exercise, active management of weight in the intervention group
  - No difference in medical utilization, nutrition reporting or mental health



- Difference in reported reduction of smoking
- No difference in cholesterol, glucose, blood pressure or BMI
- No difference in health care spending, job performance or absenteeism
- **Bottomline:** Among employees of a large US warehouse retail company, a workplace wellness program resulted in greater rates of positive self-reported behaviors but no significant differences in clinical measures of health, healthcare spending and utilization, and employment outcomes.