Mount Sinai Health Partners:
Managing the Patient with Multiple Chronic Diseases

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Course Director
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Provided by
Mount Sinai Health Partners (MSHP) and the
Icahn School of Medicine at Mount Sinai

Mount Sinai Health Partners

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No Relevant Financial Relationship to Disclose	**Relevant Financial Relationship to Disclose**
Shirley Chen, MD **Kathryn Dubowski, MD** **Arshad Rahim, MD**	**Jeffrey Olin, DO** **Consultant/Advisor (compensated service), Janssen Pharmaceuticals**

Welcome and Introduction

Shirley Chen, MD

Kathryn Dubowski, MD

Jeffrey Olin, DO

Case Presentation

Dr. Shirley Chen

Mount Sinai Doctors

Patient Information

Demographic Information and Background	• 60 year old white female • Lives alone • Established care with PCP in May 2021 (Queens)
Medical History	• Initial complaints were shortness of breath, back pain, and lower extremity pain bilaterally • PMH of recurrent pneumonia (once a year, requiring antibiotics) and fibromyalgia • Reports pain severity of 8 out of 10 on the pain scale most days
Social History	• 40 year smoking history • About 1 ppd • Trying to quit smoking for the past 6 months
Current Medications	• Gabapentin 300mg BID • Ibuprofen 400-600mg PRN daily • Low-dose aspirin 81mg daily • Albuterol (Ventolin) PRN shortness of breath, using daily

Patient Vitals and Key Labs Upon Initial PCP Visit (May 2021)

Blood pressure	155/85
Pulse	88
SpO2	97%
Respiratory Rate	20
BMI	29.3 kg/m^2
Total Cholesterol	198 mg/dl
Triglycerides	58 mg/dl
HDL	46 mg/dl
LDL	145 mg/dl
Creatinine	0.7 mg/dl
10 year ASCVD Risk	11%

ASCVD Risk Calculator can be found at:

1. https://tools.acc.org/ascvd-risk-estimator-plus/#!/calculate/estimate/
2. App Store
3. Epic Dot Phrase: .ASCVD

Patient Physical Exam

BP (second reading)	150/80
General	Well appearing, comfortable
HEENT	The sclerae are anicteric. Jugular venous pressure was normal. **There were bilateral systolic carotid bruits**. Thyroid not enlarged. No lymphadenopathy.
Cardiovascular	Heart sounds were regular, with normal S1 and S2, and no murmurs.
Respiratory	**Lungs demonstrated mild wheezing and rhonchi bilaterally.**
Abdomen	The abdomen was soft, nontender, and nondistended. **There was no bruit present**. No organ enlargement. **Aorta palpable, non-tender and not enlarged.**
Extremities	Legs were warm and well perfused, with no edema.
Skin	No rash or other skin abnormalities
Musculoskeletal	No joint swelling
Neuro	Alert and oriented x 3, speech and affect normal. No focal findings.

PCP Assessment

- Patient's chief complaint is her back and leg pain
- Because patient has multiple CV risk factors, PCP strongly considers vascular causes of pain that may be coupled with other musculoskeletal or neuropathic (i.e. fibromyalgia) pain

Poll Question #1

- Based on labs and vitals, what additional medications should be considered?

  a) Statin
  b) ACE inhibitor/ARB
  c) Beta blocker
  d) Calcium channel blocker
  e) A and either B, C, or D

PCP Assessment (continued)

- PCP starts patient on a moderate intensity statin, atorvastatin 40 mg daily
- PCP starts patient on Losartan 25mg daily and counsels on diet, exercise, and lifestyle modifications
- PCP counsels patient on smoking cessation
  - Patient expresses she has tried a variety of tactics over the last 6 months to quit completely. She has cut down to ½ pack per day due to financial constraints
- PCP and patient mutually agree upon pharmacologic intervention, beginning with varenicline (Chantix®)
- Smoking cessation should be addressed at every visit using motivational interviewing and include referrals to smoking cessation programs (i.e. NYC 311 for assistance in receiving patches, etc.) and assessment of any pharmacotherapy side effects

Providers can bill for smoking cessation counseling with time-based billing, covered by Medicare, for a total of 8 sessions per year (99406 – intermediate, 3-10 minutes; 99407 – intensive, 10+ minutes)

Poll Question #2

- What is a somewhat common side effect of varenicline (Chantix®) that should be discussed with the patient so it is not confused with another symptom?

a) Leg pain
b) Chest pain
c) GI upset
d) Shortness of breath
e) Finger tingling
f) B & C
g) All of the above

Follow Up Visit (July 2021)

- Patient goes for a daily 5-block walk for morning coffee, during which the leg pain seems to flare
- On exam, PCP finds that the right dorsalis pedis, and right posterior tibialis pulses are faint.
- The left dorsalis pedis and posterior tibialis pulses are not palpable
- Cardiac examination is normal
- Due to these findings and patient's history of smoking, PCP refers the patient to a vascular specialist who ordered the ankle-brachial index test

Pulse	Right	Left
Carotid	Normal	Normal
Radial	Normal	Normal
Femoral	Normal	Normal
Popliteal	Normal	Normal
PT	Diminished	Not palpable
DP	Diminished	Not palpable

ABI results are 0.67 on the left and 0.91 on the right
(Normal ABI = 1.0-1.39)

Poll Question #3

- Based on the patient's history and resulting ankle-brachial index scores, what would you recommend as the next step for this patient?

a) Continue smoking cessation counseling and/or medication
b) Continue aspirin 81mg
c) Initiate Cilostazol
d) Imaging of extremities — CTA/MRA/ultrasound
e) A, B, and C
f) All of the above

Poll Question #4

- Despite the addition of Cilostazol, patient continues to have leg pain. What is the most appropriate next step?

  a) Refer to a supervised exercise program
  b) Initiate Rivaroxaban
  c) Imaging of extremities — CTA/MRA/ultrasound
  d) A and B
  e) All of the above

Follow Up Visit (continued)

- Vascular specialist starts patient on Cilostazol 100mg BID
- Since the patient is still symptomatic without improvement, the patient is then referred to and enrolled in a supervised exercise program
- The patient is supervised a few times per week and is compliant with the full duration of the program
- Three months later in September 2021, the patient calls to report that despite adherence to the exercise program, her lower extremity symptoms have not improved and she has been experiencing shortness of breath and chest pain during the exercise program
- The patient follows up in October 2021 with both the vascular medicine specialist and primary care provider

October 2021 Follow Up

- Patient's LDL is decreasing with the initiation of the statin. However, LDL is not yet at goal of less than 70 mg/dL so atorvastatin is increased to 80mg daily.
- Losartan is increased to 50mg daily
- PCP and vascular medicine specialist conclude that due to smoking history and shortness of breath, patient's pulmonary symptoms have impacted optimal exercise program participation and daily activities
- Patient referred for chest X-ray and stress test which were both normal
- However, PCP remains concerned about a COPD diagnosis

October 2021 vitals

Blood Pressure	145/80
Pulse	89
SpO2	95%
Respiratory Rate	20
BMI	29.3 kg/m^2
Total Cholesterol	180 mg/dL
Triglycerides	53 mg/dL
HDL	52 mg/dl
LDL	105 mg/dl

Poll Question #5

- What should be the provider's first step in addressing the patient's pulmonary symptoms and potential COPD diagnosis?

  a) Prescribe patient another rescue inhaler
  b) Conduct pulmonary function testing such as spirometry to confirm diagnosis
  c) Refer to pulmonology
  d) A & C
  e) B & C
  f) All of the above

Pulmonary Evaluation (November 2021)

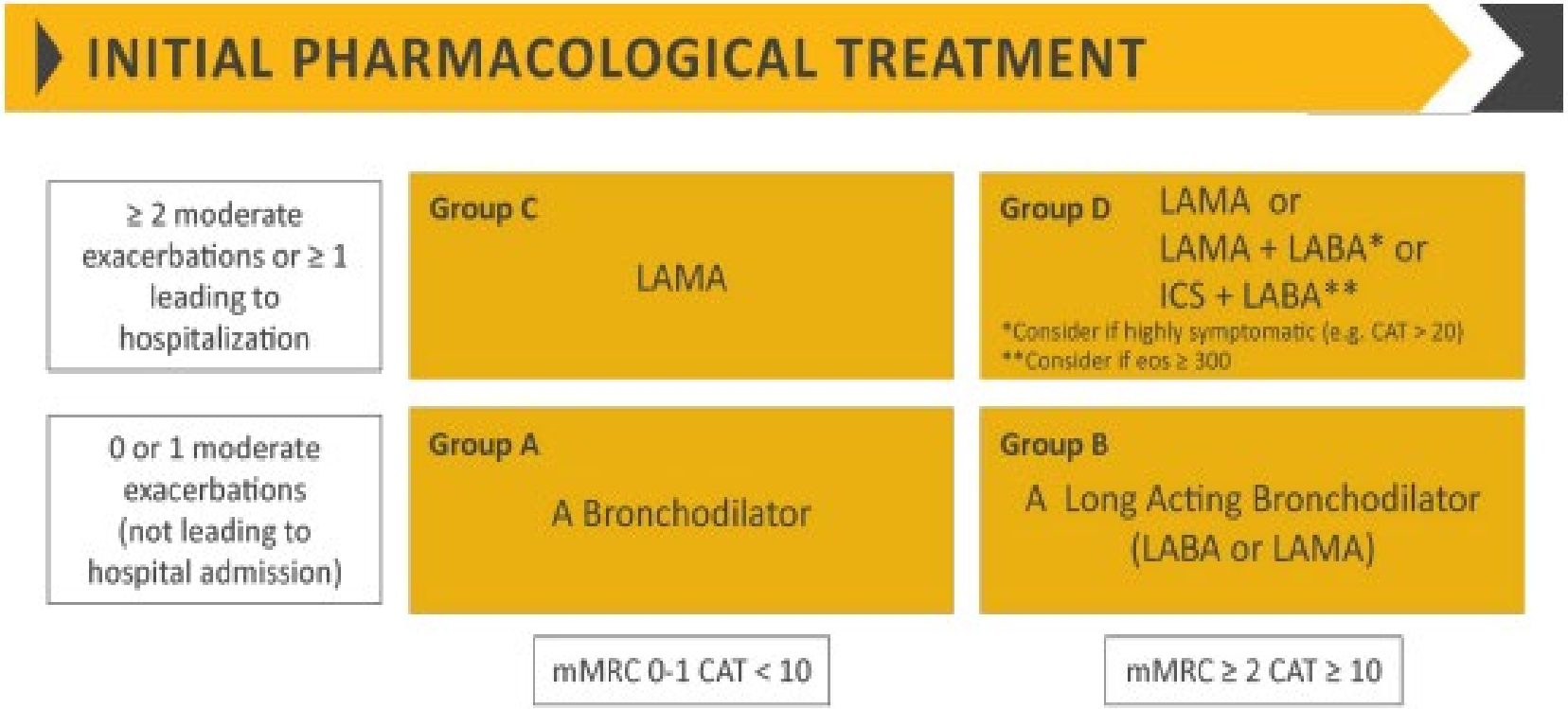
- Patient completes PFT testing
  - FEV1/FVC = 64% based on the spirometry, age, sex, height, etc.
- Patient is then referred to pulmonology
- Pulmonologist also ordered a low dose CT based on smoking history for lung cancer screening
- Patient successfully quit smoking and has stopped Chantix; patient congratulated and encouraged to abstain from smoking
- Staging COPD is also crucial in choosing the optimal pharmacotherapy

Poll Question #6

- What components are required to classify the COPD severity based on the GOLD Criteria?

a) COPD Assessment Test (CAT)
b) Complete Modified Medical Research Council (MMRC) Dyspnea Scale
c) Prior hospitalizations/exacerbations in the past year
d) Pulmonary Function Testing (PFTs)
e) Other chronic conditions
f) A & B
g) A, B, C & D
h) All of the above

COPD Management



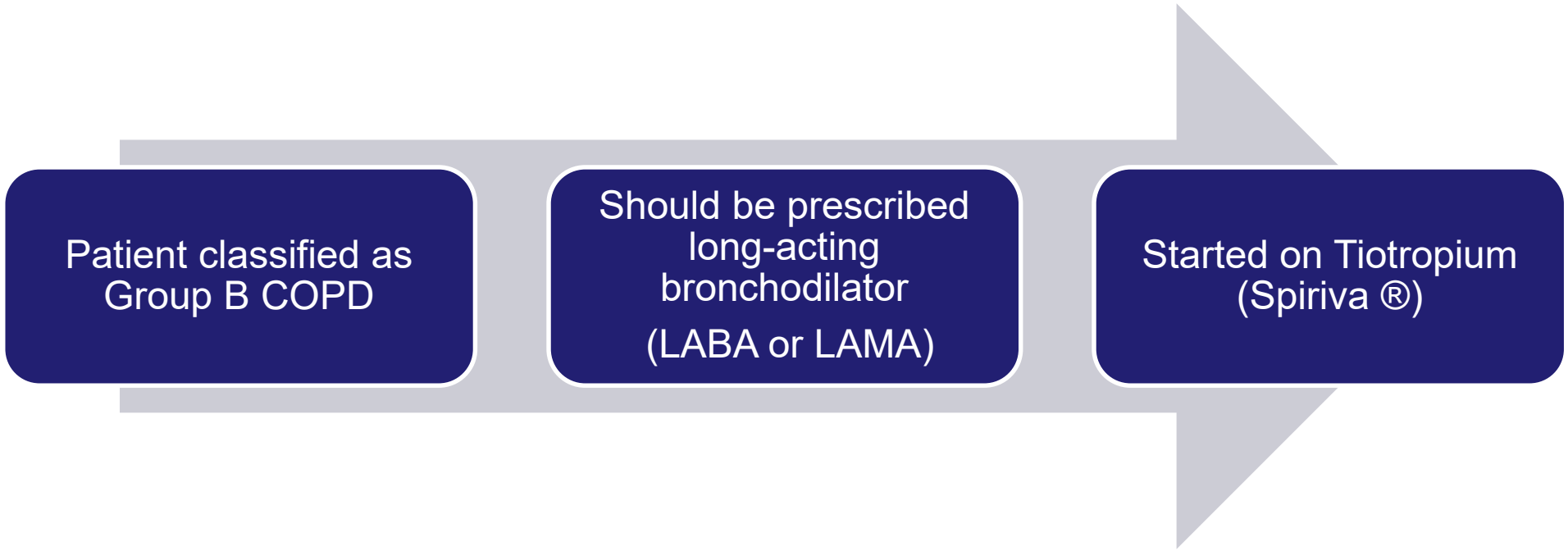
- The patient scored a **22 on the CAT assessment** and **3 on the mMRC**
- No hospitalizations
- **One moderate to severe exacerbation** treated with more frequent rescue inhaler use in the past year

Poll Question #7

- Based on these assessment scores, what GOLD Group does this patient fall into for her COPD diagnosis?

a) Group A
b) Group B
c) Group C
d) Group D
e) Unsure

Pulmonary Follow Up



- Pulmonologist considers referral to pulmonary rehabilitation but holds at this time due to the patient's **claudication and leg pain**

Pulmonary Follow Up (continued)

- Pulmonologist and PCP should also consider a referral to a clinical pharmacist, where available, for counseling on proper inhaler use

- Since completing exercise therapy and initiating Cilostozol did not improve the patient's symptoms, the vascular specialist recommended the **next phase of peripheral artery disease assessment**

Poll Question #8

- Based on the previous interventions, what is the next step in assessing the patient's peripheral artery disease?

  a) Search for an alternative diagnosis
  b) Imaging of extremities — CTA/MRA/ultrasound to assess for revascularization
  c) Increase dose of Cilostozal
  d) All of the above

Vascular Follow Up

- Based on the imaging, the patient is a **candidate for revascularization** procedure
- A month later, the patient receives a stent in her left leg, which allows the patient to moderately increase her physical activity
- A post-surgical intervention ABI is performed with an increase from an ABI of **0.67** to an ABI of **0.84**

The surgery was considered a success because a 0.15 increase of ABI is considered significant post-procedure

Conclusion

- Patient continues to follow up with primary care provider quarterly, and pulmonologist and vascular specialist biannually

- The reduction in claudication and leg pain have allowed the patient to walk longer than 5 blocks, benefiting both her PAD and COPD management

THANK YOU