Interactive Case Presentations

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Disclosures

- None

Case 1: Lizzy

- 45 y.o. female of Ashkenazi Jewish descent
- Single, no children, partial hyst 2016
- S/p cardiac arrest & STEMI to the inferior wall 2 mos ago w/DES to RCA
- FMH of premature ASCVD in 2nd degree relatives

Case 1: Lizzy

- Smokes 5 cigarettes/day x 20 years
- BP 120/80, pulse 76, BMI 27 kg/m2 (MetS)
- Labs: TC 347, trigs 230, HDL 30, LDL 271, non HDL 317, LFTs WNL, glucose 108, A1c 5.5%, TSH & renal function WNL, HS-CRP 9.8, Lp(a) 73,
- Meds: ASA, ticagrelor 90 mg BID, metoprolol BID, levothyroxine

Case 1: Lizzy

- Hypercholesterolemia diagnosed age 18 (TC >300, HDL < 50). Genetic testing revealed heterozygous mutation of LDLR.
- Statin myalgias (prava, lova, simva, atorva, fluva, rosuva). Myalgias w/ezetimibe & fenofibrate. GI upset w/colestipol & niacin
- Diet: Low-fat, Mediterranean
- Exercise: Phase 2 cardiac rehab TIW and walks 1 mile other days.

Case 1: Lizzy ?

- What would you do next to manage her hypercholesterolemia?

A. Re-try rosuvastatin at 5 or 10 mg.

B. Try pitavastatin 1-4 mg.

C. Initiate evolocumab 140 mg Q14 d.

D. Start LDL apheresis.

E. Nothing. She is intolerant to too many lipid lowering medications.

Case 1: Lizzy

- Rosuvastatin 5 mg/day was initiated while sorting through PA process for evolocumab 140 mg/day.
- Need to re-challenge a statin at a lower dose to ensure intolerance/maximally tolerated therapy on most PA forms for PCSK9i therapy (even if maximally tolerated therapy is 0).

AHA/ACC 2018 Cholesterol Guidelines

- PCSK9i have “low value” (>$150K per QALY added) in virtually all simulation models of cost effectiveness and economic value in secondary prevention with ASCVD.
- Lifetime cost > prevention of ASCVD events.
- Cost has been reduced from $14 K/yr to approx $5.8 K/yr

Case 1: Lizzy

- Lizzy is having some myalgias but tolerating rosuva 5 mg/day.
- Approved for evolocumab 140 mg/Q 14 days.
- Cut down on cigarettes to 3 a day.

Case 1: Lizzy

- Lizzy returns after 4 injections of evolocumab and taking rosuvastatin 5 mg/day.
- Labs: TC 129, trigs 175, HDL 45, LDL 49, non HDL 84, LFTs & renal function WNL. HS CRP 7.0, glu 102, Lp(a) 56
- Quit smoking.

Case 2: Rob

- 21 y.o. Caucasian male.
- Father died from MI at 37 y.o. Mother alive, no issues.
- Diagnosed with probable HeFH at 5 y.o. for TC 389, LDL approx 300. Met w/genetic counselor but no testing due to $.
- Treated with cholestyramine age 5-12. TC approx 300

Case 2: Rob

- Low fat diet encouraged but difficult to follow.
- Age 12: Switched to atorvastatin. Dose uptitrated to 40 mg/day.
- Labs: TC 198, trigs 59, HDL 42, LDL 144.
- No other meds

Case 2: Rob

- Age 20, at college, plays basketball once a week with friends for 4-5 hours.
- After playing x 2-3 hours, developed severe myalgias to LE. Hydrated with water and went to dorm. C/o pain throughout night.
- Awakened with severe LE myalgias and erythema to LEs.

Case 2: Rob

- University Health Clinic labs: CK 543 U/L, s myoglobin 38 ng/mL, T bilirubin 1.3 mg/dL, LFTs WNL
- Advised to hold atorva. Myalgias and erythema resolved. 3 days later CK 102 U/L and T bilirubin 0.5 mg/dL

Case 2: Rob ?

- What would you do next?

A. Restart atorvastatin at 40 mg/d
B. Restart atorvastatin at 20 mg/d
C. Switch to rosuvastatin 20 mg/d
D. He's statin intolerant, so switch to ezetimibe 10 mg/d

Case 2: Rob

- Switched to rosuvastatin, 10 mg/d x 2 weeks then 20 mg/d. Denied myalgias.
- Labs after 3 months: TC 284, trigs 93, HDL 47, LDL 218, non HDL 237, LFTs WNL, CK WNL.
- Plays basketball weekly and goes to gym 3 days a week (cardio/weights).
- Relatively low fat diet

Case 2: Rob ?

- What do you do next?

A. Uptitrate rosuvastatin to 40 mg/day
B. Add ezetimibe 10 mg/day
C. Switch back to atorvastatin (rosuvastatin is not working)
D. Ask about medication adherence

Factors That Place Patients at Risk for Non-adherence

- Cost
- Potential adverse effects
- Complexity of medication regimen
- Taking multiple medications
- “Silent” conditions
- Forgetfulness
- Negative prior experience with medication
- Perceived lack of communication with provider
- Suboptimal provider/patient relationship
- Low level of health literacy (approx. 90 million U.S. adults)
- Transitional care
- Depression/cognitive impairment

Predictors of Non-adherence

- Younger patient age, female, lower income, and non-Caucasian race (not in all studies).
- Better statin adherence in patients with ASCVD and multiple risk factors.

Mann DM, et al., Ann Pharmacother 2010;44:410-421.
Ma J et al., PLoS Med 2005;288:455-461.
Benner JS et al., JAMA 2002;288: 455-461.
Larry P et al., BMC 2011;doi: 10.1186/1471-2261-11-46.
Lewey J et al., Am Heart J 2013; 165:665-673.e1

Morisky 4 Question Scale

- Designed to estimate risk of medication non-adherence.
- 4 Yes or No questions
  - 0 lowest level medication adherence
  - 4 highest level medication adherence
- Questions:

1. Do you ever forget to take your medicine?
2. Are you careless at times about taking your medicine?
3. When you feel better, do you sometimes stop taking your medicine?
4. Sometimes if you feel worse when you take the medicine, do you stop taking it?

Morisky,et al. Medical Care 1986; 24: 67-74

Case 2: Rob

- Scored a 3/4 on the Morisky Scale
- Admits to only taking his rosuva 4/7 days due to school/work schedule.
- Discussed strategies for adherence.
- After discussion, incr rosuva to 40 mg/d in case he misses a dose.

Case 2: Rob

- Missed 3 month follow up, came in at 6 mos.
- States he had myalgias w/rosuva 40 mg/d. On 20 mg/d
- Labs: TC 235, trigs 80, HDL 51, LDL 168, non HDL 184
  LFTs WNL

Case 2: Rob ?

- What would you do next?

A. Add ezetimibe 10 mg/day

B. Nothing

C. Start prior authorization for PCSK9i therapy (evolocumab or alirocumab based on insurance).

D. Add colestipol 2g BID

Case 2: Rob

- Ezetimibe 10 mg/day was initiated.
- D/c'd after 3 weeks: GI side effects.
- Prior auth process initiated and received for evolocumab 140 mg SQ every 2 weeks.
- Labs after 4 injections: TC 135, trigs 78, HDL 56, LDL 70, non HDL 79.

Thank you

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? POST

At what level of LDL-C do safety events increase as reported in recent trials?

A) LDL-C < 100 mg/dL

B) LDL-C < 70 mg/dL

C) LDL-C < 50 mg/dL

D) LDL-C < 20 mg/dL

E) No level of LDL-C has been shown to be unsafe

? POST

Which of the following LDL-C-lowering medication(s) has been shown to reduce cardiovascular events when added to statin therapy?

A) PCSK9 inhibitors, ezetimibe, niacin

B) PCSK9 inhibitors, ezetimibe

C) Fenofibrate, PCSK9 inhibitors, ezetimibe

D) Fenofibrate, niacin, ezetimibe, PCSK9 inhibitors

E) None

? POST

According to the 2018 Cholesterol Guidelines, when identifying ASCVD patients at very high risk of recurrent events, which of these is NOT considered a high-risk condition?

A) History of prior PCI or CABG

B) Chronic kidney disease (eGFR 15-59 ml/min/1.73m^2)

C) Stable angina

D) Current smoking

E) All are considered high-risk conditions