

Diabetes multidisciplinary case workshop

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Case 1 – Mr. B.N.

- 55-year-old male taxi driver seen for routine physical
- Diagnosed with prediabetes 2 years ago
- Also has hypertension and dyslipidemia
- He has been trying to lose weight for some time – tries to watch caloric intake but not always easy because of his work.
- Does not do much exercise

Current medications

- Lisinopril 20 mg daily
- Atorvastatin 10 mg daily

B.N. continued

- No other significant past history of note
- Family history
 - Father – died at age 65 (type 2 diabetes and ASCVD)
 - Mother – alive – aged 78 years – type 2 diabetes
 - Sister aged 52 has type 2 diabetes and CAD (recent stent in LAD)
- Social history
 - Married with 2 children aged 30 and 25 years
 - Nonsmoker
 - Has 3 drinks per week

B.N. continued

- Physical examination
 - BP 138/88
 - Height 5' 8" (172 cm)
 - Weight 208 pounds (94.3 kg)
 - BMI 31.2 kg/m²
 - Acanthosis nigricans – nape of neck
 - No other abnormalities noted

Labs:

- HbA1c 7.6%
- Fasting glucose 145 mg/dL (8 mmol/l)
- Total cholesterol 190 mg/dL (4.9 mmol/l)
- LDL cholesterol 115 mg/dL (2.97 mmol/l)
- TG 175 mg/dL (1.98 mmol/l)
- HDL 40 mg/dL (1.03 mmol/l)
- AST 45 IU/l; ALT 59 IU/l (normal 0-40)
- Creatinine 1.5 mg/dL (133 umol/l)
- (eGFR 55 mL/min/1.73m²)
- Urine albumin 220 mg/g (normal < 30)

What should the approach be Mr. B.N?

What would be the target levels for HbA1c?

- a. $\leq 6.5\%$
- b. 6.5-7.0%
- c. 7.0-7.5%
- d. 7.5-8.0%

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What should the approach be for Mr. B.N.?

What would be the target levels for BP?

- a. <120/80 mmHg
- b. <130/80 mmHg
- c. <140/85 mmHg
- d. <140/90 mmHg
- e. <150/90 mmHg

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What should the approach be for Mr. B.N?

What would be the target levels for LDL?

- a. < 30 mg/dl (0.8 mmol/L)
- b. < 50 mg/dl (1.3 mmol/L)
- c. < 70 mg/dl (1.8 mmol/L)
- d. < 100 mg/dl (2.6 mmol/L)



Open discussion

- What would you advise with regard to diet and exercise?
- What would be your choice of medication/s for his diabetes?
- What additional lipid lowering therapy is indicated?
- How would you manage his BP?
- Should you screen for CAD?
 - Coronary calcium score?
 - Stress test?
 - Carotid artery US?
- What should we do about the liver function tests? Are any other tests indicated?

B.N. – initial management

- Shared decision making!
- Agrees to reduce carbohydrate intake
- Agrees to start walking for 30 mins per day 5 days per week
- Agrees to start metformin – and to titrate the dose up slowly to 1000 mg twice daily.
- Agrees to increase lisinopril dose to 40 mg daily and if BP not at goal to add 2nd agent
- Atorvastatin dose increased to 40 mg daily

3 months later

- Taking metformin 1000 mg twice daily
- Has lost 8 pounds (almost 4 kg)
- Trying to limit carbohydrate intake
- Walking 3 days per week – 20 mins per time
- Tolerating all meds
- Has had dilated eye exam – no retinopathy
- Weight is now 198 pounds (90 kg)
- BMI is 30.1 kg/m²
- BP 125/82

Current medications

- Metformin 1000 mg twice daily
- Lisinopril 40 mg daily
- Atorvastatin 40 mg daily

Labs

- HbA1c 6.9%
- Fasting glucose 125 mg/dL (6.9 mmol/l)
- Total cholesterol 175 mg/dL (4.5 mmol/l)
- LDL cholesterol 95 mg/dL (2.45 mmol/l)
- TG 160 mg/dL (1.81 mmol/l)
- HDL 48 mg/dL (1.24 mmol/l)
- AST 40 IU/l; ALT 48 IU/l (normal 0-40)
- Creatinine 1.7 mg/dL (150 μ mol/l)
- (eGFR 47 mL/min/1.73m²)
- Urine albumin 80 mg/g (normal < 30)

Questions

- Are you satisfied with the A1c?
- Should we add another glucose lowering medication? If so, what?
- What additional lipid lowering medications should you use, if any?
- Are you satisfied with the BP?
- Are there any further tests you would do now?

Current medications

- Metformin 1000 mg twice daily
- Lisinopril 40 mg daily
- Atorvastatin 40 mg daily

- HbA1c 6.9%
- Fasting glucose 125 mg/dL (6.9 mmol/l)
- Total cholesterol 175 mg/dL (4.5 mmol/l)
- LDL cholesterol 95 mg/dL (2.45 mmol/l)
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3 years later

- B.N. is seen for a routine follow up
- He has been noting an increase in "indigestion" lately. He also has had a few episodes of left arm discomfort when walks for a little longer than usual, and if he is walking uphill
- He is also complaining of erectile dysfunction (ED)
- He has lost another 10 pounds
- A recent retinal examination showed a few microaneurysms
- He had tried taking a SGLT2 inhibitor in addition to the metformin but found that the frequent urination impacted his job as a taxi driver so stopped it

Examination

- Weight 188 pounds (85.5 kg)
- BMI 28.6 kg/m²
- BP 124/80
- Pulse 68 and regular
- Slight decrease in vibration sensation in toes
- Dorsalis pedis pulse decreased
- Rest of examination normal

Current medications

- Metformin 1000 mg twice daily
- Glibenclamide 2 mg daily
- Lisinopril 40 mg daily
- HCTZ 12.5 mg daily
- Atorvastatin 40 mg daily
- Ezetimibe 10 mg daily

Labs

- HbA1c 6.6%
- Fasting glucose 122 mg/dL (6.7 mmol/l)
- Total cholesterol 140 mg/dL (3.6 mmol/l)
- LDL cholesterol 75 mg/dL (1.94 mmol/l)
- TG 150 mg/dL (1.69 mmol/l)
- HDL 35 mg/dL (0.9 mmol/l)
- AST 36 IU/l; ALT 34 IU/l (normal 0-40)
- Creatinine 1.9 mg/dL (168 μ mol/l)
- eGFR 40 mL/min/1.73m²
- Urine albumin 120 mg/g (normal < 30)

Questions

- What is the cardiac work up?
- How would you manage his ED?
- Is BP at goal?
- Is LDL at goal?
- Any change to diabetes Rx?
- Any further evaluation?

Current medications

- Semaglutide 2 mg weekly
- Metformin 500 mg twice daily
- Lisinopril 40 mg daily
- HCTZ 12.5 mg daily
- Atorvastatin 40 mg daily
- Ezetimibe 10 mg daily

- HbA1c 6.6%
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