

■ Items 6–13: Complex Case Highlight

A 45-year-old male executive comes to the lipid clinic for a comprehensive evaluation. His father died at age 47 of a myocardial infarction and his older brother, age 50, recently underwent a percutaneous transluminal coronary angioplasty (PTCA) with a stent placed into his left anterior descending and right coronary arteries. His mother, age 67, has type 2 diabetes. He is a non-smoker, exercises 3 times per week, and carefully watches his intake of saturated fats. He drinks 1–2 glasses of wine each night at dinner. He is on atorvastatin 40 mg qd, extended-release niacin 2000 mg qhs, aspirin 81 mg qd. Physical exam is unremarkable except for the following finding:



Figure 1

He has undergone an extensive series of labs and non-invasive tests, the results of which are shown below.

Total Cholesterol	120 mg/dL
Triglycerides	160 mg/dL
HDL-C	30 mg/dL
LDL-C	68 mg/dL
LDL-P (particle number)	1234 nmol/L (above optimal)
Small LDL-P	1201 nmol/L (high)
LDL Particle Size	19.7 nm (small/Pattern B \leq 20.5 nm)
Large HDL-P	2.8 μ mol/L (high risk)
Glucose	111 mg/dL
BUN	18
Creatinine	1.1 mg/dL
Lp(a)	30 mg/dL
hs-CRP	2.1 mg/L
Uric Acid	9.1 mg/dL
Lp-PLA2	190 ng/ml (normal $<$ 200 ng/ml)
TSH	2.0 mg/dL
Homocysteine	14.1 md/dL
ALT	55 u/L
AST	80 u/L
GGT (Gamma-Glutamyl Transferase)	200 μ /L(normal $<$ 50 μ /L)
HbA1C	5.8%
2-hour post glucose load	160 mg/dL
Height	5'11"
Weight	175 lbs
Waist Circumference	36"
Blood Pressure	126/84 mm Hg
Heart Rate	68 BPM

56. She asks you if she should take lipid medication since her LDL-C is 85 mg/dL. Which *one* of the following would be the BEST choice of medication to lower her LDL-C level?
- (A) Atorvastatin 80 mg.
 - (B) Niacin since her Lp(a) is elevated.
 - (C) Fenofibrate.
 - (D) Any statin that lowers LDL-C ~ 30–40%.
 - (E) None of the above.
57. You start her on a statin and she calls the lipid clinic because of myalgias in her shoulders. A TSH and CPK are drawn by her primary care physician and both are normal. Which *one* of the following tests should be ordered next in this patient?
- (A) An aldolase level.
 - (B) Sedimentation rate.
 - (C) A free T-4 level.
 - (D) None of the above.

■ Items 58–62

For each numbered pharmacologic agent (58–62), select the *one* lettered MOST probable metabolic effect (A, B, C, D, E) associated with it. Each lettered metabolic effect may be selected *only once*.

	Triglycerides	Uric Acid	Glucose	Lp(a)
(A)	Decrease	No Effect	Decrease	Decrease
(B)	Decrease	Increase	Increase	Decrease
(C)	Decrease	Decrease	No Effect	Increase
(D)	Decrease	No Effect	No Effect	No Effect
(E)	Increase	No Effect	Decrease	No Effect

58. Pioglitazone.
59. Niacin.
60. Fenofibrate.
61. High-Dose Statins.
62. Rosiglitazone.

Bibliography

1. Bays H. Clinical overview of Omacor: a concentrated formulation of omega-3 polyunsaturated fatty acids. *Am J Cardiol* 2006;98(4A):71i-76i.
2. Nambi V, et al: Combination therapy with statins and omega-3 fatty acids. *Am J Cardiol* 2006;98(4A):34i-38i.

Item 14

Answer B

The ADA's treatment algorithm for hyperglycemia strongly encourages the initiation of metformin in conjunction with lifestyle changes (Figure 9). Therefore, although this patient has made some progress with weight loss, metformin treatment should be initiated. Sulfonylureas are second-line agents and can effectively lower blood glucose acutely in symptomatic individuals, but this patient's hyperglycemia is not severe, and she is asymptomatic. Although she has dyslipidemia, the ADA recommends TZDs as second-line agents but should be considered in patients with low HDL/elevated triglycerides. The hyperglycemic management guidelines were released prior to the approval of sitagliptin, which is a category B drug for use in women of child-bearing potential, but metformin is still the first-line agent.

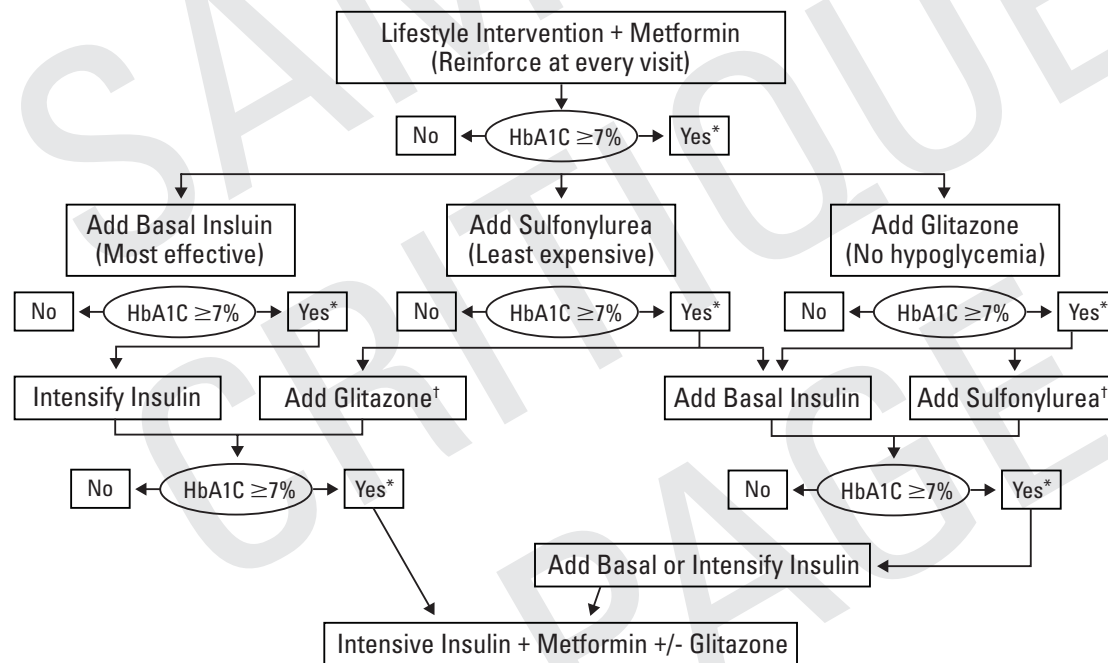


Figure 9. ADA/EASD: Metabolic management of type 2 diabetes.

* Check HbA1C every 3 months until $<7\%$ and then at least every 6 months.

† Although 3 oral agents can be used, initiation and intensification of insulin therapy is preferred based on effectiveness and expense.

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Bibliography

1. Nathan DM, et al: Management of hyperglycemia in type 2 diabetes: A consensus algorithm for the initiation and adjustment of therapy: a consensus statement from the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care* 2006;29:1963-1972.