KM is a 42 y.o. obese AAM female who comes to clinic for a follow up on her diabetes. She was diagnosed five years ago and has never had "tight glycemic control".
She reports feeling fatigued quite often, drinks a "jug" of water daily and urinates at work "all day long". She reports feeling "shaky" and weak usually while she's making supper at night after work. States she keeps her meds in a pill box by the coffee pot to remind her to take them and she stores her insulin in the frig.

PMH: DM 2
HTN
Obesity
History of depression
FH: Father died of MI at age 45
Mother alive with diabetes, CAD s/p stroke
PSH: s/p gallstone removal 1998
SH: (-) tob, (-) ETOH, (-) street drugs

Current Meds: NPh Insulin 34 units SQ in AM, 16 units SQ at HS (started 3 months ago)
Regular insulin 17 units SQ with breakfast, 8 units SQ with supper
Enalapril 5mg po once daily
Paroxetine 20mg po once daily – started 12 months ago
HCTZ 25mg po once daily
ASA 325mg po once daily

Past meds: Metformin 850mg po TID
Glipizide 20mg po BID
pioglitazone 45mg po once daily – started 2 years ago; d/c after 3 months)
Nateglinide 60mg po BID (started 1 year ago; used for 9 months then d/c'd)

Vitals today: BP 156/92, repeat 160/88, HR 88, RR 16 Ht 5'2", wt 112kg,
waist circumference 36 inches
Labs: Na: 135, Cl 100, K 4.2, BUN 10, S.Cr. 1.5, glucose 136mg/dl,
UA: (+) trace protein, (-) ketones, (-) glucose

SMBG Log (pre-prandial)

AM (mg/dl)	Lunch (mg/dl)	Dinner (mg/dl)	2 HOUR S/P Dinner (mg/dl) *POSTPRANDIAL*	HS (mg/dl)
200	118	68	168	145
189	110	80	172	140
160	108	55	190	155
172	100	56	210	156
179	99	81	310	160
166	120	70	182	144

Past labs: HgA1c 8.3% (2/10/04)
TC 240, HDL 34, LDL 156, TG 250

1) Evaluate the following medications that KM is currently taking.

   (Be sure to include a statement of appropriateness, any contraindications present, efficacy, adverse effects, drug interactions, and compliance)

   - NPh Insulin 34 u SQ in AM , 16 u SQ at HS, Regular Insulin 17u in AM, 8 U SQ with supper

   - Enalapril 5mg po once daily

   - HCTZ 25mg po once daily

   - ASA 325mg po once daily

2) Select and recommend changes to KM's therapy **FOR DIABETES.**
   (Include plan for existing therapy, include justification based on patient specific data, and any new therapy needed)

1) Evaluate the following medications that KM is currently taking.

(Be sure to include a statement of appropriateness, any contraindications present, efficacy, adverse effects, drug interactions, and compliance)

- NPh Insulin 34 u SQ in AM , 16 u SQ at HS, Regular Insulin 17u in AM, 8 U SQ with supper (1 pt)

Appropriate: Use of insulin is appropriate for patients with type 2 DM who are uncontrolled with oral agents. (0.25pt)
Efficacy: The current mixed, split regimen provides insulin activity throughout the day, but the AM NPH dose may be too high because of hypoglycemia around dinner time. (ADR) (0.25pt)
Overall glucose control is inadequate with HgA1c >8%. (0.25pt)
Additional NPH administered at bedtime may lower fasting glucose concentrations. (0.25pt)
DI: NONE
Compliance: assumed

- Enalapril 5mg po once daily (1 pt)

Appropriate: ACEI considered first line therapy for HTN with comorbid DM2 2/2 prevention of renal disease. (0.5pt)
Efficacy: Current dose is relatively low and blood pressure is inadequately controlled because BP >130/80. (0.5pt)
ADR/ DI Contraindications: NONE
Compliance: assumed

- HCTZ 25mg po once daily (1 pt)

Appropriate: Appropriate first line agent for HTN (JNC7 / ALHAT).Current dose provides maximum blood pressure effect. (.5pt)
Route, frequency appropriate.
Contraindications: none noted.
Efficacy: Not adequately controlling pt's BP to goal <130/80 (0.5pt)
ADR: none noted (k normal)
DI: with ACEI have opposite effect on serum K+
Compliance: assumed

- ASA 325mg po once daily (1 pt)

Appropriate: Appropriate agent to use for primary prevention of coronary heart disease (MI) in patients with DM greater than 30 years old. Dose, frequency appropriate (0.5 pt)
Pt's cardiac risk factors include: family history of premature CVD. HTN, hyperlipidemia. (0.25pt)
Contraindications: none noted
Efficacy: yes, pt has not experienced CV event (0.25pt)
ADR: none noted
DI: none noted Compliance: assumed

2) Select and recommend changes to KM's therapy **FOR DIABETES.** (Include plan for existing therapy, include justification based on patient specific data, any new therapy, and non-pharmacologic therapy) (6 pt)

Plan for existing therapy

1) Decrease AM NPh insulin to 30-32 units q AM (1 pt)
2) Increase PM regular dose to 10-12 units q PM (1 pt)
3) Increase HS NPh dose to 18-20 units Q HS (1 pt)
4) OPTION: Could move HS NPh DOSE TO pm with regular to decrease the amount of sticks / day and potentially improve compliance. This too, could help with hyperglycemia at HS.
5) Continue ASA for primary prevention

Justification

1) Pt is experiencing slight hypoglycemia before dinner. Decreasing the AM NPH dose slightly should help this. (1 pt)
2) Slightly increasing the supper regular insulin dose should decrease hyperglycemia post-prandial and at HS due to the peak effect of this insulin and duration of effect. (1 pt)
3) Increasing the amount of NPH given at Bedtime (or pm) (see Option above) should decrease hyperglycemia in the AM. (1 pt)

Any new therapy needed?
Not for diabetes