

2007
ASHP National Clinical Skills Competition
ANSWER KEY

ASHP Clinical Skills Competition - Pharmacist's Care Plan

Evaluated for competition

Problem Identification and Prioritization with Pharmacist's Care Plan

Team # _____

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints
Drug induced hypoglycemia	1	<ul style="list-style-type: none"> • Return plasma glucose levels to desired range (90-130 mg/dL) • Relieve signs and symptoms of hypoglycemia (anxious, agitated, sweaty) • Correct underlying cause (skip repaglinide dose if skip meal) 	<ul style="list-style-type: none"> • Administration of glucose (15–20 g) <ul style="list-style-type: none"> ○ any form of carbohydrate (glucose tablet, juice) that contains glucose may be used +/- send patient to ED and administer IV dextrose <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> • Due to h/o noncompliance with taking medication(s) and following instructions, <ul style="list-style-type: none"> ○ discontinuation of repaglinide is recommended; since hypoglycemia is in result to the patient skipping meals (in this case specifically breakfast) and taking repaglinide regardless. 	<ul style="list-style-type: none"> • Finger Stick > 70 mg/dL q 15 minutes • Resolution of hypoglycemic symptoms (anxiety, agitation, sweatiness)

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Type 2 Diabetes	2	<ul style="list-style-type: none"> • Prevent diabetes related complications; microvascular (retinopathy, nephropathy, neuropathy) and macrovascular (CVD, PAD) complications • A1C < 7% <ul style="list-style-type: none"> • Fasting Blood Sugar 90 – 130 mg/dL 	<ul style="list-style-type: none"> • Discontinue repaglinide due to consistent hypoglycemic events, (also not recommended to be used concomitantly with sulfonylureas) AND • Discontinue exenatide due to poor renal function (not recommended with CrCl < 30 ml/min) AND • Discontinue glyburide (not recommended in patients with poor renal function [CrCl < 50 ml/min] due to active metabolites) AND • Initiate insulin glargine 7.5 units <i>or</i> insulin detemir 7.5 units (75% of 10 units in renal compromised patients) at bedtime <i>or</i> NPH 7.5 units and adjust weekly based on fasting blood sugar values from the preceding 2 days. AND/OR • Initiate regular insulin or insulin lispro 7 units 15 minutes before breakfast, lunch, dinner [TDD: 28.5 units; 25% reduction in dose in CrCl 10-50 ml/min= 21.5 units] OR • Januvia 25-50 mg daily (CrCl <30 ml/min) initiate at a lower dose OR • Pioglitazone 15 – 30 mg daily (favorable lipid profile) OR • May consider starting glipizide XL 	<ul style="list-style-type: none"> • A1C < 7% q 3 months • Self-monitoring of blood glucose (Finger stick blood glucose 90 – 130 mg/dL and postprandial capillary plasma glucose <180 mg/dl) three or more times daily for patients using multiple insulin injections • Urinalysis <ul style="list-style-type: none"> ○ Prevent progression of micro/macroalbuminuria • Stabilization of Scr/prevent progression of kidney disease [Scr <2.8 mg/dL] q 3 months • Eye evaluation q annually • Foot evaluation q clinic visit <ul style="list-style-type: none"> ○ Patient education should be emphasized about self-care and examination of the feet daily ○ Monofilament pressure sensation at the distal plantar annually •

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Type 2 Diabetes (Cont.)			<p>5 – 10 mg daily (before meal) since does not have an active metabolite; utilize caution if patient's CrCl continues to deteriorate to < 10 ml/min</p> <p>AND</p> <ul style="list-style-type: none"> • Offer/provide diabetes education • Offer a consultation with a nutritionist • Follow up that the patient is scheduled to receive an annual flu vaccine and that he has received a pneumococcal vaccine. • Continue ASA 81 mg daily 	
HTN	2	<ul style="list-style-type: none"> • BP < 130/80 mmHg • Reduction in CV and renal morbidity and mortality 	<ul style="list-style-type: none"> • Reduce amlodipine dose back to 5 mg daily <p>OR</p> <ul style="list-style-type: none"> • Discontinue amlodipine since it may be the culprit precipitating the peripheral edema <p>AND</p> <ul style="list-style-type: none"> • Increase lisinopril to 20 mg daily (from 10 mg daily) <p>OR</p> <ul style="list-style-type: none"> • Discontinue metoprolol and initiate labetalol 100 mg bid, and titrate as necessary every 2-3 days until target BP is achieved. <p>OR (BONUS)</p> <ul style="list-style-type: none"> • Discontinue metoprolol and initiate carvedilol 6.25 mg bid and titrate [12.5 mg bid then 25 mg bid], over 1-2 weeks until achieve goal BP (in some patients metoprolol may increase A1C- The GEMINI trial demonstrated a) an increase in A1C in patients taking metoprolol vs. 	<ul style="list-style-type: none"> • BP<130/80 q 2-4 weeks • HR 60-100 q2-4 weeks • K >4.0 <5.5 q 3 months • Stabilization of Scr/prevent progression of kidney disease [Scr <2.8 mg/dL] q 3 months • Educate patient with the importance of monitoring blood sugars in order to avoid hypoglycemic events- based on the premise that beta blockers may mask the symptoms of hypoglycemia

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HTN (Cont.)			<p>carvedilol; b) carvedilol also showed improvement in insulin sensitivity and a decrease in the frequency of microalbuminuria (<i>JAMA</i> 2004;292:2227-2236).</p> <p>AND/OR</p> <ul style="list-style-type: none"> • Discontinue pseudoephedrine since this medication may be contributing to the patients elevated BP today AND increase metoprolol to 100 mg bid. <ul style="list-style-type: none"> - Educate patient with the importance of seeking advice from his healthcare provider before buying OTC products as they may aggravate his underlying disease states. <p>AND</p> <ul style="list-style-type: none"> • Institute diet and exercise modification per the JNC 7 guidelines (e.g. limit salt intake to < 2.4 g/day (1 tsp daily)) 	
Dyslipidemia	2	<ul style="list-style-type: none"> • Prevent acute pancreatitis • Decrease CHD risk • Prevent MI 	<ul style="list-style-type: none"> • Control blood sugars and continue simvastatin 40 mg daily <p>AND/OR</p> <ul style="list-style-type: none"> • Initiate gemfibrozil 600 mg bid and monitor signs and symptoms of myopathy / hepatotoxicity closely <p>OR</p> <ul style="list-style-type: none"> • Decrease the simvastatin dose from 40 mg to 10 mg at bedtime to avoid the potential drug-drug interaction with gemfibrozil (manufacturer recommends when simvastatin is used in combination with gemfibrozil, the simvastatin dose should not exceed 10 	<ul style="list-style-type: none"> • Complete fasting lipid panel q month <ul style="list-style-type: none"> - TG < 150 mg/dl - HDL > 45 mg/dl - TC < 200 mg/dl - BONUS: - nonHDL < 100 mg/dl - LDL < 70 mg/dl - (CVA+DM+ metabolic syndrome = very high risk) • ALT/AST/Tbili q 6 weeks <ul style="list-style-type: none"> - NLA recommends measuring AST/ALT

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Dyslipidemia (Cont.)			<p>mg daily)</p> <p>OR</p> <ul style="list-style-type: none"> • Initiate fenofibrate instead to avoid the potential interaction between statin therapy, since unlike gemfibrozil, fenofibrate does not inhibit glucoronidation. <p>OR</p> <ul style="list-style-type: none"> • Discontinue simvastatin and initiate <ul style="list-style-type: none"> - Option A: rosuvastatin 20 mg daily (23% TG reduction); (55% nonHDL reduction). Note: a 57% reduction in nonHDL is needed. - Option B: vytorin 10/10 mg daily <p>AND</p> <ul style="list-style-type: none"> • Initiate diet and exercise modifications per the NCEP ATP III guidelines 	<p>if patient presents with signs and symptoms of hepatotoxicity (i.e. fatigue, jaundice, lethargy, malaise)</p> <ul style="list-style-type: none"> • CPK (at baseline, and/or if symptoms of myopathy present) • Muscle pain/weakness q clinic visit • Rhabdomyolysis- elevated CPK + Scr with cola colored urine • Lipase if patient is symptomatic (severe abdominal pain, fever, loss of appetite, or nausea).
Pedal edema	2	<ul style="list-style-type: none"> • Relief of pedal edema • Improve ambulation 	<ul style="list-style-type: none"> • Reduce amlodipine dose to 5 mg daily <p>OR</p> <ul style="list-style-type: none"> • Discontinue amlodipine therapy <p>AND</p> <ul style="list-style-type: none"> • Initiate furosemide for resolvment of edema 	<ul style="list-style-type: none"> • BP<130/80 q 2-4 weeks • K >4.0 <5.5 q 3 months • Scr <2.8 mg/dL q 3 months • Check blood sugars if initiate furosemide therapy • Check lipid panel if initiate furosemide therapy • Uric acid level if initiate furosemide therapy • Pedal edema resolution 2+ to 1+ • Return of weight to baseline (113.9 kg to 106.9 kg)

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints
Obesity	3	<ul style="list-style-type: none"> • Weight loss • Decrease CV risk • Decrease blood sugar, BP, LDL, TG • Increase HDL 	<ul style="list-style-type: none"> • Fluid in lower limbs may be contributing to some of the weight • Caloric restriction of 12-15 kcal/kg daily • Increase physical activity (30 minutes daily) • Behavioral modifications (eating habits, stress) <p>OR</p> <ul style="list-style-type: none"> • After fluid retention resolves add Alli 60 mg tid + MVI during or 1 hour after fat containing meal 	<ul style="list-style-type: none"> • Weight loss (1-2 lbs/wk) • Loose stools, flatulence, steatorrhea, bloating
Noncompliance Low literacy	3		<ul style="list-style-type: none"> • Educate patient with importance of taking all medications as directed • Utilize teach back mechanisms • Use lay words 	