ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S PATIENT DATA BASE FORM

Demographic and Administrative Information

Name: MG
Address: 12 Memory Lane
Greenville, SC 29607
Date of Birth: 8-15-1925
Height: 5'3' Weight: 155 lbs
Gender: Female
Admission Date: 8/1/04

Patient ID: 454-54-5454
Room & Bed: 515
Physician: M Spencer, MD
Pharmacy: Sunny's Health (Liberty Ave) Greenville, SC
Race: Caucasian
Religion: Catholic

History of Present Illness

MG was transferred to Greenville Regional Hospital from Pleasant Nursing Home following a 3-day history of alternating periods of extreme agitation and lethargy. She has resided in the nursing home since January 8, 2004 after an increase in paranoid delusions over several months.

Just prior to nursing home admission, she threatened to kill her son with a knife because she thought he was an intruder. She was also increasingly agitated in the early evening hours and would wander the house at night. It was becoming increasingly difficult for her husband to care for her and her children were also concerned for his safety.

She remains able to feed herself; no incontinence; bathing and grooming with prompts.

Vitals & Other Tests

	10/5/03 (clinic)	1/8/04 (NH admit)	7/31/04 (NH)	8/1/04 admission)
BP	138/65	130/72	150/89	146/84
Pulse	75	74	99	102
Temp	98.6°F	98.2°F	99.0°F	98.6°F
Resp	15	16	20	20
Weight	145 lbs	148 lbs	140 lbs	140 lbs

Past Medical History

Hypertension diagnosed in 1984
Hyperlipidemia, diagnosed in 1987
Type 2 Diabetes Mellitus diagnosed in 1990
Dementia, Alzheimer's type diagnosed in 1998 (with delusions diagnosed in 2004)
Cataract removal, right eye 2001

Chem	1/8/04 (NH admit)	7/31/04 (NH)	8/1/04 (admission)
Na	137	140	144
K	3.8	3.9	4.0
Cl	98	99	98
CO_2	23	24	24
BUN	15	20	20
SCr	1.4	1.6	1.6
FBG	100	105	115
HbA_{1c}	6.5%	6.7%	6.8%
Calcium	8.3	8.7	8.6
Albumin	3.5	3.6	3.5
AST	20	17	16
ALT	26	30	25
Total bili	0.8	0.8	0.7
Direct bili	0.1	0.2	0.2

Family History

Father: deceased; myocardial infarction age 69
Mother: deceased; pneumonia age 73
Sister 1: age 82; alive, arthritis
Sister 2: age 70; alive, type 2 diabetes mellitus
Sister 3: deceased; CVA age 84

Heme	1/8/04 (NH admit)	7/31/04 (NH)	8/1/04 (admission)
WBC	7.5	8.8	8.6
Hgb	13.3	13.0	13.1
Hct	37.5%	37.0%	37.0 %
MCV	81.0	82.0	81.9
MCH	28.0	27.5	27.6
MCHC	32%	32.2%	32.1%
Plts	170	180	175
PMNs	62.0%	60.5%	61.2%
Lymphs	28.4%	30.4%	30.0%
Bands	4.8%	4.0%	5.0%
Eos	1%	1.2%	0.8%
Monos	3.8%	3.9%	3.0 %

Mini-Mental State Exam scores

4/16/98 – 26/30
10/20/98 – 25/30
3/19/99 – 25/30
1/4/00 – 23/30
2/10/01 – 22/30
9/16/01 – 20/30
5/1/02 – 19/30
12/13/02 – 17/30
10/5/03 – 16/30
1/8/04 – 15/30

Social History

Tobacco: 1 ppd x 20 years; none since 1984
ETOH: none since 1998; previously 1 glass of wine a day x 15 years
Illicit Drugs - none
Caffeine: 1 cup coffee in the morning
Education: through 10th grade
Occupation: secretary x 8 years; homemaker since age 26
Status: married x 59 years, husband is alive at age 82 w/ arthritis
Children: 2 sons age 53 and 49; 1 daughter age 47
Physical Activity: Ambulation per nursing home protocol
Diet: Following diabetic diet since nursing home admission in 2004

Fasting Lipids	1/8/04 (NH admit)	7/31/04 (NH)	8/1/04 (admission)
TC	185	235	230
Trig	150	200	205
HDL-C	32	30	30
LDL-C	123	165	159

Urinalysis	1/8/04 (NH admit)	7/31/04 (NH)	8/1/04 (admission)
Glucose	neg	neg	neg
Ketones	neg	neg	neg
SG	1.020	1.015	1.014
Bacteria	neg	neg	neg
WBC	neg	neg	neg
RBC	neg	neg	neg
Protein	neg	2+	2+
Leuk Est	neg	neg	neg
Nitrite	neg	neg	neg

Procedures

5/98 – CT scan – mild cortical atrophy

Physical Exam (8/1/04)

Gen: overweight white female appearing to be stated age, agitated
HEENT: PERRLA, EOMI, R & L fundus exam without retinopathy, mucus membranes dry, no oral lesions, dentition intact; no sores noted
Skin: dry skin, no rashes
Neck: No JVD appreciated, no carotid bruits, no thyromegaly
Heart: tachycardia, no S_3, S_4 no murmur
Lungs: clear to auscultation and percussion
Abdomen: bowel sounds normal, non-tender, non-distended
GU: uncooperative; deferred
Extremities: warm to the touch, pedal and brachial pulses present bilaterally
Neuro: Cranial nerves II – XII intact
MSE: initially agitated, volume elevated, moderately resistive to physical exam; periods of interspersed lethargy and briefly nonresponsive; paranoid delusions (feels her food is being poisoned); a&o to person only; can name 1/3 objects on immediate recal, 0/3 on delayed recall; identifies current President as Reagan. Would not cooperate w/ MMSE.

Consults: Psychiatry 8/2/04
Axis I: Acute Delirium
Dementia, Alzheimer's type with delusions
Axis II: None
Axis III: Medical Diagnoses as stated
Axis IV: progressive dementia, loss of activities of daily living
Axis V: Global Assessment of Function: 25

ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S PATIENT DATA BASE FORM (Cont.)

Allergies/Intolerance's	**Prescription Coverage**
	Insurance: Medicare; Blue Cross
PCN - hives	Copay: Brand $20 Generic $10

Drug Therapy Prior to Admission

Drug Name/Dose/Strength/Route	Prescribed Schedule	Duration Start–Stop Dates	Compliance/Dosing Issue
1. rivastigmine 1.5 mg po	bid	3/1/04 - present	
2. vitamin E 400 IU po	qd	1/8/04 – present	
3. metformin 850 mg po	bid	3/15/96 - present	
4. amitriptyline 50 mg	qhs	1//8/04 - present	
5. haloperidol 10 mg	qd	7/20/04 – present	
6. haloperidol 5 mg	qd	1/8/04-7/20/04	
7. benztropine 1 mg	bid	7/23/04-present	
8. hydroxyzine 25 mg	TID prn agitation	7/28/04 - present	Received 2 doses on 7/28 and 7/29; 1 dose on 7/30; and 3 doses on 7/31
9. lisinopril 10mg po	daily	1998 - present	
10. glyburide 5 mg po	daily	1997? - present	
11. simvastatin 5 mg po	qam	1/15/96 - present	
12. furosemide 20 mg	qam	1998-present	
13. conjugated estrogens 0.625 mg po	qam	5/98-present	

Medication History

Upon diagnosis of Alzheimer's, patient was started on tacrine for the first 6 months. Patient's daughter reported that she had noticed some unused medication and her mother admitted to "forgetting" some doses on occasion. MG was switched to donepezil at that time and remained on this medication until she went into the nursing home and it was changed to rivastigmine. In the fall of 2003, MG became increasingly suspicious of family members and agitated in early evening hours and was admitted to the nursing home in January 2004.

ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S CARE PLAN

Clinical Significance*	Health Care Need**	Pharmacotherapeutic Goals	Recommendations for Therapy	Monitoring Parameter(s)	Desired Endpoint(s)	Monitoring Frequency
Most Clinically Significant Problem	Drug induced delirium	• Return patient to baseline mental status • Optimize drug therapy to eliminate drug induced side effects • Prevent worsening of medical problems if medications are discontinued	• D/C order for hydroxyzine prn • Taper benztropine over 1-2 weeks • Taper amitriptyline over the next 1-2 weeks • Substitute trazodone 25 mg qhs for insomnia/sundowning (credit may be given for 50 mg starting dose but no higher)	• Mental status exam • Physical exam • BP • Heart rate	• Mental status exam – resolution of fluctuating periods of agitation and lethargy, combativeness and non-responsiveness within the first week • BP – return to patient baseline within the first week • Pulse – return to patient baseline within the first week • Physical exam – moist mucous membranes within the first week	• Mental status exam - daily during hospitalization • BP and pulse q shift • Physical assessment daily during hospitalization
Major Clinical Significance	Management of delusions	• Reduction in frequency or elimination of delusions • Reduction in behavioral responses to delusions	• Taper haloperidol over the next 1-2 months as it is ineffective and may cause extrapyramidal side effects if given without an anticholinergic medication like benztropine(credit may given for tapering of at least 2 weeks as long as risperidone is initiated concurrently) • Initiate risperidone 0.5 mg qhs (0.25 mg OK too) See Appendix A below for discussion of other possible selections (or if student answered olanzapine, ziprasidone, aripiprazole, or	• Mental status exam • Physical exam • Behavioral responses on the ward e.g. refusal to eat because patient feels food is poisoned • Weight • Blood pressure • Blood glucose • Lipids • Extrapyramidal side effects (this population is extremely sensitive to even	• Mental status exam – absence of delusions or decreased frequency over the next several months • Behaviors – reduction or elimination of behavioral response to delusions over the next several months • Physical exam – absence of extrapyramidal symptoms such as tremor, rigidity, akathesia, or	• Daily documentation of delusions • Baseline weight, BG, lipid • Weight monthly for first 3 months; quarterly thereafter • BG & lipid at 3 months, then annually

			quetiapine)	low doses of antipsychotics)	bradykinesia throughout risperidone treatment • Prevention of drug induced weight gain over the first several months of treatment (target weight range for this patient is 105-140 to achieve BMI of 18.5-24.9) • No sign of metabolic changes throughout risperidone treatment (no increase in BG, or lipids from baseline listed in her chart) • Absence or minimization of orthostasis throughout risperidone treatment • No signs of tremor, rigidity, or gait disturbance throughout risperidone treatment	

Clinical Significance*	Health Care Need**	Pharmacotherapeutic Goals	Recommendations for Therapy	Monitoring Parameter(s)	Desired Endpoint(s)	Monitoring Frequency
Major Clinical Significance	Optimize Alzheimer's medication regimen	• Delay progression of Alzheimer's disease • Maintenance of activities of daily living	• Increase dosing of rivastigmine to 3 mg BID (this is the minimum effective dose) and continue for at least 2 weeks; at that time, titration may continue as tolerated up to 6 mg BID (students must recommend the increase to 3 mg BID; may recommend to continue this dose or continue to titrate which must occur no sooner than 2 weeks) • Titrate Vitamin E to 1000 IU bid (this is the only dose with clinical data) • Optional - Add memantine 5 mg qam week 1; 5 mg BID week 2; 10 mg qam and 5 mg qpm week 3; 10 mg BID week 4 and on • Discontinue estrogen as patient is well past menopause and has no other indications for this treatment; not proven to be beneficial in treatment of AD; alternatively estrogen may be listed as drug without indication	• MMSE • Activities of daily living (such as toileting, grooming, eating, etc.)	• Stabilization of MMSE score (less than a 4 point decline over 1 year) • Continued ability to perform ADL's independently for as long as possible	• MMSE and ADL's - At dosing change if desired; generally every 6 months following changes in pharmacotherapy, once the maintenance phase has started, yearly is sufficient

Clinical Significance*	Health Care Need**	Pharmacotherapeutic Goals	Recommendations for Therapy	Monitoring Parameter(s)	Desired Endpoint(s)	Monitoring Frequency
Major Clinical Significance	Hypercholesterolemia	• Prevention of long-term complications (CHD, CVA, PVD, MI, death, etc.) • Reduction of LDL, triglycerides, and increased HDL • Minimize side effects of medications	• Increase simvastatin to 10 mg qd • May need to consider addition of second agent such as fibrate or niacin if goals are not met with monotherapy	• Lipid panel • Liver Function tests • Ask patient about muscle aches, pains • Adverse reactions to niacin if used – flushing, itching, gastrointestinal	• TC <200 • LDL < 100 • HDL >40 • Trig <150	• Lipid panel every 3 months until goal is reached • LFT's & CPK once a year
Major Clinical Significance	Contraindication to metformin due to SCr = 1.6	• Prevention of lactic acidosis while maintaining blood glucose control	• D/C metformin • Monitor FBG as it may only be acutely elevated due to agitation • Can increase glyburide to 10 mg if FBG dose not normalize once agitation has subsided	• FBG • HbA1c	• FBG 90-130 mg/dl • HbA1c <7	• FBG daily prior to discharge; weekly until goal, then quarterly • HbA1c Quarterly
Major Clinical Significance	Elevated BP	• Prevention of target-organ damage (CHD, renal failure, retinopathy, stroke, etc.)	• Monitor for resolution once drug therapy is adjusted and delirium is resolved • Furosemide not indicated as first line therapy; should be d/c'd and listed as drug without indication • ACEI not yet optimized; adjust to 15 mg qd if further BP control is needed to compensate for d/c furosemide	• BP • Monitor for cough, renal function, serum potassium	• Target BP <130/80	• Daily in hospital and nursing home

Clinical Significance*	Health Care Need**	Pharmacotherapeutic Goals	Recommendations for Therapy	Monitoring Parameter(s)	Desired Endpoint(s)	Monitoring Frequency
Minor Clinical Significance	Need for vaccinations	• Prevent Pneumococcal pneumonia and influenza virus infection • Avoid hospital admission and illness	• Pneumococcal vaccine now and again within 5 years • Influenza vaccine if time is September to March and again every fall	• Monitor patient for clinical symptoms of respiratory illness • Adverse reaction from injection	• Prevent Pneumococcal pneumonia and influenza virus infection • Avoid hospital admission and illness potentially detrimental to this patient as AD progresses	• Assess for clinical symptoms of respiratory infection during routine physical exam in nursing home

*Indicate "most clinically significant problem," health care needs of "major clinical significance," and those that are "less clinically significant"
**Healthcare needs include actual and potential medical problems and drug-related problems as well as any other health care services from which your patient may benefit.

Appendix A: Rationale for Antipsychotic Selection:

Atypical Antipsychotics

- Risperidone (Risperdal) – Best clinical data to support use. Less weight gain generally than Olanzapine and this patient is currently overweight and has diabetes.
- Olanzapine (Zyprexa) – Also sufficient clinical data; some concern over the potential for anticholinergic effects, but no impact on cognition in AD clinical studies. High risk of weight gain which is not optimal in this patient.
- Quetiapine (Seroquel) – Limited controlled clinical data; otherwise, a reasonable choice in this patient.
- Ziprasidone (Geodon) – Limited clinical data in this population.
- Aripiprazole (Abilify) – Limited clinical data in this population.

Although other classes of medications can be used to stabilize agitated or other behavioral symptoms (mood stabilizers, benzodiazepines, buspirone, etc.) this patient has specific delusions (psychotic symptom) and the clear choice would be an antipsychotic.

Appendix B: Tapering and Titration Recommendations

Hydroxyzine – Can be discontinued as it has only been used prn
Benztropine – Optimal taper is probably over 1-2 weeks; credit may be given for tapering of no less than 3 days and no greater than 3 weeks
Amitriptyline – Amitriptyline can be tapered over 1-2 weeks; credit may be given for tapering of no less than 3 days and no greater than 3 weeks
Haloperidol – Crossover of 1-2 months is common when switching antipsychotics; credit may be given for tapering over at least 3 weeks and no greater than 2 months. Must have simultaneous start of low dose risperidone at some point during the crossover to receive credit.
Rivastigmine – Titration of dose should occur no sooner than 2 week intervals. Minimum maintenance dose is 3 mg BID.
Vitamin E – Titration can occur rather quickly, no longer than a month titration.
Memantine – If mentioned, titration occurs weekly as stated to minimum target dose of 10 mg BID.