Appendix A

Case Study- Application of Beers Criteria

**Date\_\_\_\_\_\_\_\_\_ Market members\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Discipline\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Smith, G., Kireuk, T. (2013) Case Study: Moving beyond the Beers in translating into practice. *Geriatric Nursing* 934) 28-432.

 Introduction:

*New geriatric patients with complicated medical histories that come to our practice may challenge our general approaches to treatment and management. Many geriatric patients come with several chronic diseases, are taking multiple medications as well as, some experience the added challenge of having cognitive impairment. Case studies are invaluable tools for presenting and creating a dialog from real world examples of the many challenges in the world with older adults. This case study will examine our experiences with a newly admitted older patient to the clinic who has been prescribed several medications and who was experiencing questionable cognitive impairment.*

 *The case study will examine the application of the Beers Criteria*

 *The 2012 Beers Criteria for PIM use in older adults was updated and revised. The intent of the criteria is guide the provider in selecting medications for older adults by considering the appropriateness of the drugs, drug-disease interactions, medications that warrant additional scrutiny when used with older adults. The Beers Criteria was not intended to mandate particular prescribing patterns, but are a guide good geriatric care and principles.*

 Fred is a 71 year old black male who emigrated to the U.S. from South Africa over 20 years with his primary language being French. He speaks broken English and it is not clear how much he is able to understand in English. Fred was referred to the primary care clinic from rehabilitation medicine after suffering from a Pontiac cerebral vascular accident (CVA) 2 months ago. He lives alone independently in a small apartment. He has a sister who lives about 20 minutes from his apartment and serves as his primary translator.

 In addition to suffering a Pontiac CVA Fred has a history of hypertension, Diabetes Mellitus-Type II, Dyslipidemia, and Atrial Fibrillation. He is a nonsmoker and denies use of alcohol or illicit drugs. He fell twice without injury while in the rehabilitation unit. He also reports occasional urinary dribbling. Upon discharge from the rehabilitation facility, according to the discharge summary his blood pressure was well controlled. His sister was planning to check on him daily by phone and see him weekly to set up his medications, as well as, grocery shop. He receives two meals per day from *Meals on Wheels* and has personal care assistance for housekeeping services.

 His vital signs included weight 152 lbs., height 68 inches, afebrile, blood pressure 180/09, pulse 61/min, respiratory rate 18/min., and pulse oximeter is 99% on room air. The visit was challenging due to his language barrier because his sister was unable to accompany him, as well as, possibly cognitive impairment due to the recent O/A. Pt. has +1 bilateral lower limb edema. The remainder of the exam was WNL lab results included A1C= 7.4, Sodium 137, Potassium 4.1, Creatinine 1.1, BUN 19, GFR 60.1, LDL 136, HLD 37, Triglycerides 132, INR 1.2

***Assessment:***Primary concerns: language barrier, questionable cognitive impairment, uncontrolled blood pressure, possible resistive hypertension, poorly controlled glucose, inadequate coagulation therapy

***Plan****:* Medication reconciliation by care coordinator to assist patient’s sister in medication set up and arrange for drug assistance program

***Follow-up:*** Fred will be followed with a week visit in his home through tele health services. The clinic tele health visits will be coordinated weekly to have Fred’s sister and clinic nurse present during the visit

**Medications prescribed upon discharge from rehabilitation**

Table 1

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| --- | --- | --- |
| **Medications** | **Dose** | **Frequency** |
| warfarin (Coumadin) | 5mg. | daily |
| metaprolol (Lopressor) | 150mg | BID |
| amlodipine (Norvasc) | 10 mg. | daily |
| clonidine ( Catapres) | 0.1 mg | TID |
| chlorthalidone (Hygroton, Thalitone) | 25 mg. | daily |
| metformin (Glucaphage) | 500 mg. | BID |
| simvastatin (Zocar) | 40 mg | daily |
| glyburide (Micronase) | 5mg | daily |
| acetaminophen (Tylenol) |  | As needed for mild pain |
| senna (Senna) |  | As needed for constipation |
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**Date\_\_\_\_\_\_\_\_\_ Market members\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Discipline\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Application of principles of Gerontologic pharmacology and Beer Criteria**

**Identify medications are listed on the Beers Criteria, rationale and application in practice**

Table A.

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| --- | --- | --- |
| **Medications** | **Beers Criteria-Rational** | **Application in practice** |
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\*\* the decision for individuals at risk for complications remains controversial. The decision to discontinue anticoagulation therapy needs to be individualized for each patient by evaluating fall risk and risk of stroke.

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Application of principles of Gerontologic pharmacology and Beer Criteria

Table B

|  |  |  |
| --- | --- | --- |
| **Medications** | **Beers Criteria** | **Application in practice** |
| Warfarin( Coumadin) | Use cautiously in older adults or unwilling to comply with laboratory blood draws or at risk for falls | Fred’s calculate GFR is 60.1 ml/mint. Per Cockcroft formula. Continue Metformin 500 twice a day. Will monitor closely creatinine clearance. |
|  clonidine(Catapres) | Avoid due to potential for rebound HTN with missed doses, adverse CNS effects. Potential for bradycardia and orthostatic hypotension. If required should be administered via transdermal patch to maximize steady dose. | Taper and discontinue Clonidine. May consider Clonidine via transdermal patch in the future.  |
| glyburide (Micronase) | Long acting Sulfonylurea may contribute to prolonged hypoglycemic status and cause erratic glycemic control | Discontinue Glyburide, start Amaryl (glimepiride) a short acting sulfonylurea and which may decrease potential for hypoglycemic effects.  |
| metaprolol(Lopressor) | Use with caution due to compound effects with clonidine. Some evidence suggests that metoprolol is not effective in African Americans.  | Discontinue Metoprolol, start Tenormin (Atenolol) for once a day dosing to meet the need to manage n atrial fibrillation and rate control |
| chlorthalidone (Hygroton, Thalitone  | Use cautiously in older adults due to potential for hypotension. Increased risk for hypokalemia  |  |
|  metformin(Glucophage) | Contraindicated for individuals with impaired renal function | Fred’s calculated GFR is 60.1ml/min. per Cockcroft formula. Continue Metformin 500 twice a da. Will closely monitor creatinine clearance |
| simvastatin (Zocor) | Recent evidence has shown that statins contribute to increased blood glucose levels making OM management more difficult. Maximum recommended dose in the elderly is 20 mg daily to avoid adverse effects.  | Decrease Simvastatin to 20 mg. daily, follow lipid levels at the next clinic visit; this may improve blood sugar control. |

\*\* The decision to discontinue anticoagulant therapy for individuals at risk for complications remains controversial. The decision to discontinue anticoagulation therapy needs to be individualized for each patient by evaluating fall risk and risk of stroke.