Clinical Alert

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Maryland Department of Health and Mental Hygiene
Office of Health Care Quality
Spring Grove Center
55 Wade Avenue
Catonsville, MD 21228
410-402-8004

Clinical Alert #1 – WARFARIN

The Office of Health Care Quality has, in recent months, noted an increase in clinical problems related to the use of anticoagulants, especially Warfarin. Undesirable outcomes resulting from inappropriate prescribing, dispensing, administration and monitoring of these drugs are encountered frequently by our surveyors. A common theme in these cases is the systemic failure on the part of certain facilities to anticipate and address well-known complications associated with the use of these potent medications. The following case presentation highlights areas of concern:

Resident #1 was a 78 year-old female with numerous diagnoses including hypertension, diabetes mellitus, osteoporosis and glaucoma. She was living at home independently until March 1, 2001 when she was admitted to the hospital with sudden onset of slurred speech and right-sided weakness. She was diagnosed with an embolic CVA and new onset atrial fibrillation. Treatment included the administration of IV Heparin, then Coumadin and active rehabilitation. She was transferred to a long-term care facility on March 6, 2001 for continued therapy.

When admitted to the LTC facility she remained in atrial fibrillation. Coumadin was continued at a dose of 5 milligrams each evening. One day after admission, an INR was obtained and noted to be 1.44. The physician increased the dose of Coumadin to 7.5 milligrams each evening and ordered a repeat INR obtained in 2 weeks. The nursing staff administered the increased dose of Coumadin but failed to obtain the follow-up INR. As there were no standing orders or facility policy regarding the frequency of laboratory testing of residents on Coumadin, no further INRs were obtained.

On April 12, 2001 (Day 35 in the nursing home), the attending physician examined the resident, noted limited progress in therapy but gave no new orders. On April 16, 2001 (Day 39) the consultant pharmacist reviewed this resident's care and recognized the lack of INR monitoring. However, the pharmacist simply left a written recommendation, in the medical record, for the physician to "consider monthly INRs while the resident is receiving Coumadin". As the facility had no system to promptly inform physicians of pharmacy recommendations, this information remained isolated in the medical record.

On April 22, 2001 (Day 45) the resident complained of dysuria, which prompted the nursing staff to contact the attending physician. By phone, the physician ordered Bactrim to be administered twice daily for ten days. As of April 24, 2001 (Day 47) the resident's dysuria had resolved but gross hematuria had developed. The attending physician was again called and ordered the Bactrim discontinued and Cipro started for a presumed resistant urinary tract infection. The nursing staff despite the development of hematuria, continued to administer 7.5 milligrams of Coumadin nightly to this resident.

On April 25 (Day 48), the resident complained of progressive weakness and "dizziness. The nursing staff told her that she needed to give the new antibiotic "time to work" and that she

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would eventually feel better. Later that day, in the absence of any trauma, bruising was observed on the resident's chest and left arm. The nursing staff failed to notify the physician of either the resident's complaints or the appearance of bruising. Coumadin was administered as ordered.

Over the next 24 hours the resident remained in bed and became progressively more lethargic. Routine vital signs obtained by a nursing assistant on the morning of April 27, 2001 (Day 50) revealed a blood pressure of 84/48 and a pulse of 114 beats per minutes. The nursing assistant documented these results on the vital signs flow sheet, which was not seen by the nurse until later that afternoon. When the nurse went to evaluate the resident she was found to be obtunded, tachycardia, and hypotensive and found with diffuse bruising over her entire body. She was sent to the emergency room where her prothrombin time, the first one obtained in over six weeks, was found to be greater than 100 seconds. She was profoundly anemic with a hematocrit of 15.8%. A CAT scan revealed a large subdural hematoma and despite aggressive interventions the resident expired on hospital day number 2.

The problems in the management of this case are many; some of the ones we noted include:

- The staff didn't know which residents in the facility are on anti-coagulants.
- The physician apparently did not know the proper way to begin and maintain Coumadin treatment in an elderly patient.
- There was no understanding by the physician and nursing staff on when to order INRs and the proper monitoring of Coumadin.
- There was failure of communication between nursing staff and the physician.
- Failure of nursing staff and physician to recognize side effects of Coumadin.
- There was no policy or system to require facility staff to obtain timely INRs before Coumadin can be administered.
- The pharmacist failed to intervene aggressively in assuring the proper administration of Coumadin.

You can probably easily add to this list.

Does someone in your facility know who is on anti-coagulant medications?

Does your facility have a policy to monitor residents on anti-coagulant therapy?

When was your last in-service on anticoagulant therapy?

For more information, please read:

Warfarin Therapy: Evolving strategies in anticoagulation. American Family Physician, Feb 1, 1999. *www.aafp.org/afp/990201ap/635.html*

Questions and/or comments regarding this clinical alert should be directed to:

Joseph I. Berman MD
Medical Director,
Office of Health Care Quality
Phone: (410) 402-8016
E-mail:
Jberman@dhmh.state.md.us

William Vaughan R.N., B.S.N.
Chief Nurse,
Office of Health Care Quality
Phone: (410) 402-8140
E-mail:
Wvaughan@dhmh.state.md.us

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