May I Put You on Hold?

Virtually every nurse encounters and possibly struggles with the decision of whether or not to hold a medication. When to hold a medication is a combination of parameters set by the prescriber, protocols approved by the facility, and the nurse’s professional judgment. In this article three major categories of medications that require holding at some point in most resident's therapy are discussed. Be aware that many medications are held before surgery or outpatient procedures; however, those are beyond the scope of this discussion. The following information should be applied in the context of the situation, the resident, and the facility policies and procedures. All nursing and med aid regulations should be reviewed and followed.

Hold your Horses!

Situations where antihypertensives are held:

- Prescriber has set a parameter for holding an antihypertensive in the directions. For example, the order reads-- clonidine 0.2mg po bid. Hold for SBP < 100.

- Facility has a written policy defining the systolic and diastolic pressures at which antihypertensives should be held and a procedure for notifying the physician.

- The nurse may use his/her clinical judgment and hold an antihypertensive if the resident has become dehydrated, is eating and drinking only limited amounts, is NPO without IV hydration, or is bleeding.

- Sometimes blood pressure meds are held when the resident has decided to use Hospice or receive comfort care only.

If the nurse is not familiar with the resident, he/she should get a second opinion from another staff member as to whether or not to hold the medication. The nurse should notify the prescriber and receive an order to discontinue the medication or give specific parameters for holding. Nurses should note if the low blood pressure is an isolated event or if it normally runs low. If BP’s are trending on the low side, the prescriber may opt to either stop the medication or lower the dose. The nurse should record whether the hypotension is related to orthostasis or not and determine if the resident is symptomatic. At the time the medication is due to be administered, the nurse will need to use her professional judgment; however, the prescriber should be contacted as soon as possible to clarify and/or change the order.

The medical director and facility should define the systolic blood pressure and diastolic blood pressure that is considered low and when to implement the protocol. When a blood pressure is determined to be low as defined by protocol, the facility should have a procedure on when to repeat the blood pressure measurement and who the CNA/Nurse/Med Tech should inform that the blood pressure is low.

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Focus on Glaucoma

Glaucoma Overview

Glaucoma refers to a group of eye conditions that damage the optic nerve due to increased pressure in the eye (IOP or intraocular pressure). It is sometimes referred to as “the sneak thief of sight” because at first, there are no obvious symptoms. It is the second leading cause of blindness in the United States. 50% of cases are undiagnosed and 2.5% of people over age 40 will develop glaucoma. The front part of the eye is filled with a clear fluid called the aqueous humor. This fluid is constantly being replenished and leaves the eye through channels in the front of the eye in an area called the anterior chamber angle. Anything that slows or blocks the flow of this fluid out of the eye will cause pressure to build up in the eye and result in damage to the optic nerve. There are four major types of glaucoma:

- Open-angle (chronic) glaucoma – this is the most common type (2/3 of all cases), and the cause is largely unknown. Disease progresses slowly over time and is often hereditary.
- Closed-angle or Narrow-angle (acute) glaucoma – 10% of all cases - the exit of the aqueous humor fluid is suddenly blocked. This causes a quick, severe, and painful rise in the pressure in the eye; usually a medical emergency that can resolve with proper treatment but sometimes develops into a chronic condition.
- Congenital glaucoma - present at birth, caused by abnormal eye development.
- Secondary glaucoma – caused by certain medications (corticosteroids), eye diseases, systemic diseases and trauma to the eye.

Risk Factors

Risk factors for open-angle glaucoma include family history, advanced age, African American descent, diabetes, hypertension, prolonged use of corticosteroids, near-sightedness, high IOP, and history of eye trauma.

Risk factors for narrow/closed-angle glaucoma include female sex, far-sightedness, family history, narrow iridocorneal angle, small eyes, and advanced age. Precipitation of an acute attack of narrow-angle glaucoma is associated with blurred vision, halos around lights, reddening of the eyes and severe eye pain. An acute attack may potentially lead to blindness. Use of medications that dilate the pupil may precipitate an acute attack.

Tests

Glaucoma screening should be part of an annual eye exam. The main tests include:
- Intraocular pressure measurement – higher pressure is associated with glaucoma
- Visual field test – peripheral vision decreases when glaucoma is present
- Dilated eye exam – optic nerve visualization to check for possible damage
- Gonioscopy – measures the angle where the cornea meets the iris and allows the doctor to differentiate between open and closed angle glaucoma

Treatment

Closed-angle glaucoma is a medical emergency and is usually treated surgically to drain fluid off the eye (iridotomy). Once treated, patients can usually safely take medications associated with angle closure. However, people whose closed-angle glaucoma is not controlled are at high risk for an acute attack if they’ve taken medications that cause dilation of the pupil. This can prevent liquid from draining out of the eye and increase intraocular pressure. These individuals often don’t know they have glaucoma.

Typically open-angle glaucoma is treated with drug therapy that lowers intraocular pressure. It can also be treated with surgery. Drug therapy consists of eye drops that decrease IOP by helping the eye’s fluid to drain better and/or by decreasing the amount of fluid produced by the eye. Usually multiple eye-drops are prescribed as they use different mechanisms of action to accomplish the end result:
**Alpha Agonists:** reduce intraocular pressure and increase outflow of aqueous humor. Side effects may include tachycardia, hypertension, and blurred vision. Examples include:

- praclonidine (Iopidine®)
- brimonidine (Alphagan®)
- epinephrine (Gluacon® and Epifrin®)
- dipivefrin (Propine®)

**Beta Blockers:** reduce amount of fluid produced by the eye as well as decrease the rate at which the fluid flows into the eye. Side effects include bradycardia, blurred vision and drowsiness. Examples:

- timolol (Timoptic XE Ocumeter® and Timoptic®)
- levobunolol (Betagan®)
- carteolol (Ocupress®)
- metipranolol (OptiPranolol®)
- betaxolol (Betoptic®)

**Carbonic Anhydrase Inhibitors:** (both eye drops and tablets) reduce the amount of fluid made by the eye. Possible side effects are altered taste, eye irritation and dry eyes. Some examples are:

- dorzolamide (Trusopt®)
- brinzolamide (Azopt®)
- acetazolamide (Diamox®) – oral medication
- methazolamide (Neptazane®) – oral medication

**Cholinergics:** tighten the tissues in the eyes to increase drainage of the fluid out of the eyes. Side effects may include blurred vision, excessive salivation and tearing. Examples include:

- pilocarpine (Isopto Carpine®, Pilocar® and Pilocarpine HS ointment)
- echothiophate (Phospholine Iodide®)

**Prostaglandin Analogs:** Also increase drainage of fluid out of the eye. Side effects may include blurred vision, eye irritation, and irreversible changes in eye color, increase in thickness and number of eyelashes, and joint aches. Examples:

- tafluprost ophthalmic solution (Zioptan®)
- latanoprost (Xalatan®)
- bimatoprost (Lumigan®)
- travoprost (Travatan®)

Interestingly, Bimatoprost was approved to assist with eyelash growth in December 2008 (Latisse®)

**Combination medications:** Cut down on number of eye drops needed

- Cosopt® (Timolol and Trusopt) – beta blocker and carbonic anhydrase inhibitor combo
- Combigan® (Timolol and Azopt) – beta blocker and alpha agonist combo
Drugs to avoid in Glaucoma patients

Many drugs have warnings against use in glaucoma patients. These warnings usually only apply to patients with narrow-angle glaucoma. When this is treated surgically, it is usually a transient condition and these warnings only apply until the condition is corrected. Drugs having anticholinergic effects should be avoided as they can dilate the pupil and worsen the condition. Patients should seek immediate treatment if they develop eye pain, redness, and blurred vision or see “halos” around lights as these symptoms may indicate an acute attack. The following are common drugs that should be avoided when someone has narrow angle glaucoma:

- **Antihistamines** such as Benadryl (diphenhydramine) – consider using Claritin (loratidine) or Zyrtec (fexofenadine) as these do not have strong anticholinergic properties

- **Tricylic Antidepressants** such as amitriptyline and nortriptyline – SSRI’s and SNRI’s should be used with caution as well

- **Typical (older) Antipsychotics** such as fluphenazine – consider newer “atypical” antipsychotics instead (Risperdal, Zyprexa, etc.).

- **Overactive bladder drugs/antispasmodics** such as Ditropan or Detrol – consider longer acting dosage forms as these have less anticholinergic side effects

- **Others:** Scopolamine, decongestants, Flexeril

Patients with *open-angle glaucoma* may take anticholinergic medications. However, they should avoid ophthalmic corticosteroids as these increase intraocular pressure and can worsen this condition. Patients who need ophthalmic steroids for 10 days or longer should have their intraocular pressure checked.

Glaucoma and Dry Eye Syndrome

Dry Eye Syndrome and glaucoma commonly occur together. Patients may have bothersome symptoms, but not associate them with dry eye syndrome, for example an increase in tearing or feeling like sand is in their eyes. Glaucoma medications may irritate the eyes causing Dry-Eye syndrome as well. This may be treated with artificial tears, Omega 3 vitamins, eyelid scrubs, warm compresses and eye-drops or medications that reduce eye inflammation. Treating these two conditions is challenging as it increases the number of eye-drops that need to be administered, however it is important to treat Dry-Eye Syndrome to cut down on discomfort and keep the surface of the eyes healthy.

Why do we need to space out eye medications?

It is recommended to administer different kinds of eye medications at least 3 – 5 minutes apart. This ensures the first eye medication is not washed out by the second before it has had time to work. When administering an eye ointment as well as eye-drops, the eye ointment should be administered after the eye-drops as it is hydrophobic and may prevent absorption of the eye-drops. Please see NMG policy and procedure manual for detailed instructions on eye-drop and eye ointment administration.
Blood pressure: How low can you go?

Joint National Committee on Hypertension (JNCH) and the American Heart Association have published guidelines for hypertension. However, defining low blood pressure is a bit more difficult. BP can vary considerably in a short amount of time — sometimes from one heartbeat to the next, depending on body position, breathing rhythm, stress level, physical condition, medications, oral intake (both food and drink), and even time of day. Blood pressure is usually lowest at night and rises sharply on awakening. What's considered low blood pressure for one resident may be normal for someone else. Most doctors consider chronically low blood pressure too low only if it causes noticeable symptoms. Only one number needs to be in the low range for the blood pressure to be considered lower than normal. Some experts define low blood pressure as readings lower than 90 systolic or 60 diastolic.

- A sudden fall in blood pressure can also be dangerous. A change of just 20 mm Hg — a drop from 130 systolic to 110 systolic, for example — can cause dizziness and fainting when the brain fails to receive an adequate supply of blood.
- Athletes and people who exercise regularly tend to have lower blood pressure and a slower heart rate than do people who aren't as fit. So, in general, do nonsmokers and people who eat well and maintain a normal weight.
- Remember, residents without hypertension may be receiving an antihypertensive for another indication, for instance, cardiac arrhythmia. This complicates the situation further and requires additional communication with the prescriber.

Therefore, the prescriber and facility should develop a protocol so that the nursing staff will have clear guidelines on what action to take.

Hold that Thought!

It has become a frequent occurrence and may even be considered "community practice" to withhold antihypertensives prior to dialysis. Some patients, but not all, do experience hypotension during dialysis and some medications are "pulled off" during the filtration. Withheld antihypertensives may then be given post dialysis, either at the dialysis center or back at the nursing home. It should not be taken for granted that the nephrologist wants the antihypertensive held on the days before dialysis. Additionally, the nursing staff at the dialysis center and the LTC facility would need to communicate on who is doing what. Therefore, specific orders for individual patients should be obtained by the facility regarding the administration of all meds on the day of dialysis that are transcribed to the current order set. The order should also state which medications to administer or not administer before and after dialysis and any holding parameters that should be in place.

Hold on, I’m coming!

Some of the same principles apply with antidiabetic medications. Reasons to hold antidiabetics:

- Prescriber has set a parameter for holding an antidiabetic medication in the directions. The order may read Novolin N 25 units before breakfast and dinner. Hold for FSBS < 90.
- Facility has a written policy defining the FSBS at which antidiabetics should be held and the procedure for notifying the prescriber.
- Metformin should be temporarily discontinued prior to or at the time of intravascular administration of iodinated contrast media (potential for acute alteration in renal function). Metformin should be withheld for 48 hours after the radiologic study and restarted only after renal function has been confirmed as normal.
- The nurse may use his/her clinical judgment and hold an antidiabetic medication if the resident is eating only limited amounts or is NPO without parenteral nutrition.

The American Diabetes Association has defined normal fasting blood sugar as 70-110. Hypoglycemia is defined as blood sugar < 70. In a small number of patients, a prescriber may use a number higher than 70 because the patient’s blood sugar is very erratic and bottoms out frequently. Please note, when facilities develop protocols, the specific antidiabetic medications should be listed to avoid any confusion. For example, expert consensus do NOT recommended holding long acting insulins.

Hold it Right There!

Unfortunately, errors often occur when anticoagulants, such as warfarin and Lovenox, are held. Sometimes the anticoagulant is inadvertently stopped all together and the patient may have a stroke, while other times the anticoagulant is restarted too early resulting in bleeding. The Institute For Safe Medication Practices recommends that the prescriber include specific instructions indicating when to resume these medications. If an unclear hold order is received, the prescriber should be contacted and a clarification order should be written.

Day after day healthcare providers struggle with what appears to be a fairly simple issue- whether or not to hold a medication. There is the potential for errors to occur that may have significant consequences to the patient. All parties should do their part to uphold the safety of the resident. To reduce the number of times that a nurse must make an independent clinical decision and to insure good patient outcomes, facilities should develop protocols in conjunction with their medical directors and/or prescribers should be required to provide clear directions and parameters. Nurses should exercise their professional judgment, be thorough and go the extra mile for evaluation, clarification and documentation.

Article by Wendy Clary Nash, PharmD, BCPS, CGP

Neil Medical Group – Pharmacy Services Division

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As Editor of PharmNotes, I always have the option of writing a personal note on the back page….and I usually do so. But sometimes I have more to say than will fit in the section that has been allotted for that purpose….and today is one of those days. I will say up front….that this is an EDITORIAL….and does not necessarily reflect the views of my employer or co-workers….yet given the opportunity and the forum to express something that is on my mind….I have run with it.

Being privileged to work in long term care for many years and then dealing with my grandson in the NICU for the last 2 months, have kind of culminated in a very eye-opening experience for me……and I have found myself asking…..“What has happened to our Health Care System?” You would think that over the last 30 years when I initially started in this field…..till now……I would have observed vast improvements in care and overall outcomes. But has our system become so cumbersome with paperwork, specialists, and a breakdown in “information technology”, that we have perhaps missed the mark?

My grandson, Mason Cole Matthews, is in one of the top neo-natal facilities on the East Coast. Born at 23+ weeks and weighing 1 lb 5 oz, he has had MULTIPLE issues and requires the absolute best and expert care possible to improve his chance of survival and future quality of life. I have had to stand by and helplessly watch as things “fell between the cracks” as he was transferred at just 2 weeks of age to his current facility. At the time of transfer, some of the physicians were questioning my daughter and son-in-law about Mason’s prior medical history, and when my daughter answered with “I am sure Dr. W. sent that with all of his paperwork,” the physician responded, “I don’t have time to read all of that”. And when I suggested at rounds during that first week at the new facility that they perhaps call and get info from the prior hospital about the vent settings that had finally been established there that were “just right” for Mason and also to use the Culture and Sensitivity reports that had been conducted at the previous facility for an ongoing infection…..I was told that “we use our OWN guidelines”. I have watched when as many as 4 different neonatal doctors have been in charge of Mason’s care in a 7 day period….and seen a physician come behind another one on the following day and “undo” what the one the day before had done and felt as appropriate. And I guess it all culminated this week when a cranial tap (sticking a needle in Mason’s fontanel to draw off CSP) was done without my daughter being called to give prior consent let alone notification that it was done….only to be followed by rounds the following day when his attending neonatologist did not even know that the procedure had been performed. (Yes…QUITE an awkward moment for her and I am sure that heads rolled on that one).

So what have I gleaned from this…..and how does this apply to us?

First….there is no continuity of care in our healthcare system. I have watched nurses go through the NICU as if it is a revolving door. I have wondered numerous times why 2 nurses that have had Mason many times were staffed to work with “newer babies” that were probably there for a brief time….yet Mason was given to a new nurse totally unfamiliar with his case (including a brand new nurse on the day of his recent extubation). I frequently hear, “We are so short staffed” or ” I am just here from 3 to 7”. It is not unusual to have nurses filling 4 hour slots of time, sometimes switching assignments mid-shift…..and you feel REALLY lucky if there is EVER someone there for a 12 hour shift (those are FEW AND FAR BETWEEN). When I hear those dreaded words, “I’m just filling in”…..as a family member, that translates into: “I don’t KNOW anything about your grandson” and “I’m not going to be here long enough to LEARN anything about your grandson” and I am thinking “Hopefully in the short time you ARE here you will do no HARM to my grandson”. How often do we just “fill slots” in LTC? Our patients are just as vulnerable, often unable to tell us when something is wrong…..and in definite need of someone there with them day to day that knows their history and habits.
Second…..information technology may not be the answer. There is SUCH a push in this country for electronic information that can flow from one facility to the next. But yet, I think back to the comment to my daughter by the NICU doctor……“We don’t have time to read it”. All the information in a chart is useless if no one looks at it. And when I called to gently complain to the Director of Nursing over the NICU……that I didn’t understand why I had had to tell 3 different physicians or nurse practitioner’s in charge of Mason’s care that he already HAD been treated for the PDA valve issue and that it had been rechecked AT THIS FACILITY BY A CARDIOLOGIST…..She assured me that I should not be concerned because they had absolutely wonderful technology and ALL of the staff had access to ALL of that information with just a few keystrokes on the computer. I had to politely remind her that the very BEST system is of no use if no one bothers to use it. How many systems do WE have in place in LTC that could prevent errors and optimize care……but fall by the wayside and go unused?

Third….the SPECIALIZATION of medicine is the DEFRAGMENTATION of medicine. I have seen it in the NICU and in LTC. Each specialist…..doing HIS/HER thing……but does anyone ever look at the WHOLE patient? Does the right hand know what the left hand is doing? Perhaps that explains why a recent resident in one of my facilities entered the hospital on six medications and exited on 19, many of which were conflicting and had resulted in the resident having 4 falls on her first 3 days in the LTCF. We have specialists for every body system and body part…..and should be making great strides in care and healing……but I think the end result has evolved into ever so complicated medication regimens and often negative outcomes.

And lastly…..Transition of care is when the majority of errors occur. Recent studies have proven this out and I have seen it time and time again in LTC and also with Mason’s transition from one facility to another. The Medication Reconciliation Sheet was to “fix” this issue…..but frankly, it has just created a nightmare. Where nurses were once supposed to use the discharge summary and possibly an FL2 for information on discharge medications, they now have yet an additional document to use and my personal experience has shown that it sometimes takes EVERY document that you can lay your hands on to figure out what the patient should actually be taking. I have taken STACKS of examples to a local hospital to show them the medication errors that are occurring as a result of discrepancies in these documents and was assured that they would get back to me “real soon”. Three months……I’m still waiting. And the problem with transition of care can be two fold. You either end up like we do in LTC….with a physician taking over the care of a patient that he has no prior knowledge of…..and treats the medication orders from the hospital as SACRED and will not touch them……OR you end up with a case as in Mason’s NICU transfer…..where the patient is treated as if he just showed up in a basket on their doorstep and has no prior history and if you dare suggest something that worked in his previous care somewhere else…you get “We don’t do it that way here”.

So….How can we learn from this? First, provide continuity of care to our residents whenever we can with longer shifts where possible and a regular staffing pattern so that staff can become familiar with the day to day habits and behaviors of our residents. Second, make sure that the vast amount of paperwork and information that we gather on our residents does not just become “paper compliance” but useful and usable information that promotes the health and wellbeing of the patients we serve. Third, make sure that we look at the resident as a WHOLE. Just as the specialists need to “pool” and collaborate their information, all of our disciplines need to work together and make sure we are treating the “whole patient”. And last, be alert that transition of care is a HUGE vulnerability in our system, and applies not only to transfers in and out of facilities but also from one unit to another within our own facility. I know I am only a voice of one……but the change has to start somewhere.

Mason was 8 weeks old as of July 17, 2012. For more information on his story, you may follow the blog at www.ljmatthews.blogspot.com
The normal editorial comments are in a somewhat expanded format this month on pages 6 and 7 of the newsletter.....so I am using this space to take care of some pharmacy “Reminders”:

- Particle contamination of medications obtained from glass ampoules can pose serious hazards to patients. Particle contamination may be reduced by using a filter needle when obtaining medications from glass ampoules prior to administration. Be alert to this since several medications dispensed by the pharmacy to individual residents as well as numerous emergency box medications are in glass ampoules.

- The pharmacy is changing Miralax directions that currently read 17gm = 1 capful, since various generic manufacturers may vary with cap size and the 17 gm dosing is not always equivalent to one capful.