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ASHP Midyear 2013
PGY-1 Residents Group Photo with Amber Glass, Director, UW School of Pharmacy Residency Programs

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**iMPACT (iMproving Pharmacy Anticoagulation in a Health Clinic on the Tulalip Tribal Reservation)**

By

Muhammad Qudoos, Pharm.D

(Tulalip Clinical Pharmacy)

This study is a part of larger study evaluating a pharmacist-managed anticoagulation program and its impact on co-morbidities on a Native American reservation. While institution-based, pharmacist-managed outpatient anticoagulation programs are well-established, minimal research is available to support success for programs that are based at outside institutions. This IRB approved study focuses on the safety and efficacy of the pharmacist-managed anticoagulation clinic. Safety of the pharmacist-managed anticoagulation clinic will be evaluated in part through comparison of hospitalization rates. Acceptance of the pharmacist-managed anticoagulation clinic will be evaluated through patient and provider satisfaction surveys.

The focus of this part of study is on efficacy of the pharmacist-managed anticoagulation clinic. Our primary aim is to compare pre- and post- program initiation percentage of therapeutic-range international normalized ratio (INR), blood pressure (BP), hemoglobin A1C (A1C), and lipid panel (total cholesterol, LDL, HDL, triglycerides). Our secondary aims are to: 1) evaluate the safety and adequacy of pharmacist-management of supra-therapeutic INRs and associated symptoms; 2) explore factors related to maintaining therapeutic INR and co-morbidity measures; and 3) explore program satisfaction.
Inclusion criteria include tribal members > 18 who are currently receiving anticoagulation therapy, while those unable to give informed consent are excluded. Specific outcome measures are: percentage of therapeutic-range INR, BP, and A1C values; contributing factors for stability of these measures; adherence; and patient and provider program satisfaction. Data collection will occur through abstraction from the patients’ medical records. Upon consent, an initial chart review will be conducted for each participant. This retrospective review dates to initiation of warfarin therapy, or September 2008, whichever is earlier. This will be followed by a prospective series of quarterly chart reviews.

**Guidelines for Treating Overweight and Obesity**

By

Muhammad Qudoos, Pharm.D

(Tulalip Clinical Pharmacy)

The "2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults" was created to reflect the latest research to outline best practices when it comes to treating obesity—a condition that affects more than one-third of American adults. These guidelines help address questions like "What's the best way to lose weight?" and "When is bariatric surgery appropriate?". Here is what every patient should know about the treatment of overweight and obesity:

**Definition of obesity:**

Obesity is a medical condition in which excess body fat has accumulated to the extent that it can have an adverse effect on one’s health. Obesity can be diagnosed using body mass index (BMI), a measurement of height and weight, as well as waist circumference. Obesity is categorized as having a BMI of 30 or greater. Abdominal obesity is defined as having a waist circumference greater than 40 inches for a man or 35 inches for a woman.

**Benefits of weight loss:**

Obesity increases risk for serious conditions such as heart disease, diabetes and death, but losing just a little bit of weight can result in significant health benefits. For an adult who is obese, losing just 3–5% of body weight can improve blood pressure and cholesterol levels and reduce risk for heart disease and diabetes. Ideally, doctors recommend 5–10% weight loss for obese adults, which can produce even greater health benefits.

**Weight loss strategies:**

There is no single diet or weight loss program that works best for all patients but currently Belviq and Qsymia are being used in selected population. In general, reduced caloric intake and a comprehensive lifestyle intervention involving physical activity and behavior modification tailored according to a patient’s preferences and health status is most successful for sustained weight loss. Further, weight loss interventions should include frequent visits with health care providers and last more than one year for sustained weight loss.

**Bariatric Surgery:**

Bariatric surgery may be a good option for severely obese patients to reduce their risk of health complications and improve overall health. However, bariatric surgery should be reserved for only the highest risk patients until more evidence is available on this issue. Present guidelines advise that weight loss surgery is only recommended for patients with extreme obesity (BMI>40) or in patients that have a BMI>35, in addition to a chronic health condition.

**References**

1. Measure height and weight and calculate body mass index (BMI) at annual visits or more frequently to identify patients who need to lose weight.
   - Continue use of current cut points to identify adults who may be at increased risk for cardiovascular disease (CVD):
     - Overweight: (BMI > 25.0-29.9 kg/m²)
     - Obesity: (BMI ≥ 30 kg/m²)
     - The obesity cut point should be used to identify adults at increased risk for all-cause mortality.

2. Measure waist circumference at annual visits or more frequently in overweight and obese adults.
   - Use cut points defined by National Institutes of Health or World Health Organization.

3. Overweight and obese adults with CVD risk factors should be counseled that even modest weight loss (3 – 5% of body weight) can result in clinically meaningful benefits for triglycerides, blood glucose, glycated hemoglobin, and development of diabetes.
   - Greater weight loss (> 5%) can further reduce blood pressure, improve lipids, and reduce the need of medications to control blood pressure, blood glucose, and lipids.

4. A diet prescribed for weight loss is recommended to be part of a comprehensive lifestyle intervention, a component of which includes a plan to achieve reduced caloric intake. Any one of the following methods can be used:
   - Prescribe FOR WOMEN: 1,200 - 1,500* kcal/day
   - FOR MEN: 1,500 - 1,800* kcal/day
   - Prescribe a 500 kcal/day or 750 kcal/day
   - Prescribe one of the Evidence-Based Diets that restricts certain food types (such as high-carbohydrate foods, low-fiber foods, or high-fat foods) in order to create an energy deficit by reduced food intake.

5. Prescribing a calorie-restricted diet should be based on the patient’s preferences and health status, and preferably with a referral to a nutrition professional for counseling.

Pharmacist Involvement in Providence Home Health Care

By
Irina Goldstein, PharmD
Providence Monroe Pharmacy

Home health services offer medical care to seniors and other adults recuperating after an inpatient or facility stay. They often need support in performing activities of daily living in order to remain safely in their homes and lower their risk of hospital readmission and poor health outcomes. These patients undergo several transitions of care involving significant discontinuity in the use of multiple electronic medical records, which increases the risk of medical errors - medical care is often transferred from inpatient providers to primary care physicians, and is shared with specialists as well as visiting nurses, physical therapists, occupational therapists, and social workers, frequently with poor communication. In addition, polypharmacy is a prominent complicating factor in many of these patients, which further contributes to their high risk of rehospitalization.

In 2013 the Valley View residents began a project incorporating pharmacy services into the home health team and establishing their benefits; this year Kara and I are continuing this service. We are involved in weekly interdisciplinary team meetings with healthcare staff who provide home visits, which allows us to gain insight into patients' lives and needs from different perspectives. High risk patients on multiple medications are identified by staff for complex medication review. We identify medication duplications, gaps in therapy, interactions, and inappropriate medications or doses. Using a situation-background-assessment-recommendation (SBAR) communication method, we formally document our recommendations to present to primary care physicians within Providence and outside the organization, with the hope of addressing polypharmacy, preventing adverse events from medication use, and assist home health staff in stopping preventable readmissions.

Hypertension Update: Changes in Treatment

By
Irina Goldstein, PharmD
Providence Monroe Pharmacy

Background
Hypertension is one of the most prevalent conditions seen in primary care, affecting 35-40% of all adults greater than 25. It is a contributing factor to poor health outcomes including myocardial infarction, stroke, and renal failure. Early detection and optimal treatment can lead to significant improvement in morbidity and mortality. At the Providence Monroe Clinic the majority of our anticoagulation and diabetes patients are also treated for hypertension and questions regarding their therapy often arise.

The highly anticipated 2014 update to the adult hypertension guidelines was published on December 18th, 2013 by the Eighth Joint National Committee (JNC 8). Significant changes have been made to recommendations from the JNC 7 guidelines after the panel reviewed current evidence.

Hypertension Treatment Update: JNC 8 Guidelines

The JNC 8 attempted to answer three questions:
1. In adults with hypertension, does initiating antihypertensive pharmacologic therapy at specific blood pressure thresholds improve health outcomes?
2. In adults with hypertension, does treatment with antihypertensive pharmacologic therapy to a specified blood pressure goal lead to improvements in health outcomes?
3. In adults with hypertension, do various antihypertensive drugs or drug classes differ in comparative benefits and harms on specific health outcomes?

Updated Treatment Algorithm
Adult aged ≥18 years with hypertension

Implement lifestyle interventions (continue throughout management).

Set blood pressure goal and initiate blood pressure lowering medication based on age, diabetes, and chronic kidney disease (CKD).

General population (no diabetes or CKD) vs Diabetes or CKD present

*Age ≥60 years*

Blood pressure goal
SBP <150 mm Hg
DBP <90 mm Hg

Nonblack

Initiate thiazide-type diuretic or ACEI or ARB or CCB, alone or in combination.

Select a drug treatment titration strategy
A. Maximize first medication before adding second or
B. Add second medication before reaching maximum dose of first medication or
C. Start with 2 medication classes separately or as fixed-dose combination.

At goal blood pressure?

Yes

At goal blood pressure?

Yes

Reinforce medication and lifestyle adherence.
For strategies A and B, add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).
For strategy C, titrate doses of initial medications to maximum.

No

Reinforce medication and lifestyle adherence.
Add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).

At goal blood pressure?

Yes

Reinforce medication and lifestyle adherence.
Add additional medication class (eg, β-blocker, aldosterone antagonist, or others) and/or refer to physician with expertise in hypertension management.

No

At goal blood pressure?

Yes

Continue current treatment and monitoring.

*Age <60 years*

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

All ages

Diabetes present
No CKD

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

Black

Initiate thiazide-type diuretic or CCB, alone or in combination.

At goal blood pressure?

Yes

Reinforce medication and lifestyle adherence.
Add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).

No

Reinforce medication and lifestyle adherence.
Add additional medication class (eg, β-blocker, aldosterone antagonist, or others) and/or refer to physician with expertise in hypertension management.

At goal blood pressure?

Yes

Continue current treatment and monitoring.

*All ages*

CKD present with or without diabetes

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

All races

Initiate ACEI or ARB, alone or in combination with other drug class.

At goal blood pressure?

Yes

Reinforce medication and lifestyle adherence.
Add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).

No

Reinforce medication and lifestyle adherence.
Add additional medication class (eg, β-blocker, aldosterone antagonist, or others) and/or refer to physician with expertise in hypertension management.

At goal blood pressure?

Yes

Continue current treatment and monitoring.
The committee provided nine recommendations:

1. For those ≥60 years of age, pharmacologic treatment should be initiated at blood pressures ≥150/90 mm Hg and should be treated to <150/90 mm Hg (Grade A). In addition, pharmacologic treatment does not need to be adjusted if lower blood pressures are achieved without adverse effects on health or quality of life (Grade E).

2. In those <60 years of age, pharmacologic treatment should be initiated at DBP of ≥90 mm Hg and be treated to <90 mmHg (Grade E).

3. In those <60 years of age, pharmacologic treatment should be initiated at SBP of ≥140 mm Hg and treated to <140 mm Hg (Grade E).

4. In those ≥18 years of age with chronic kidney disease (CKD), pharmacologic treatment should be initiated at blood pressure of ≥140/90 mm Hg and treated to <140/90 mm Hg (Grade E).

5. In those ≥18 years of age with diabetes, pharmacologic treatment should be initiated at blood pressure of ≥140/90 mm Hg and treated to <140/90 mm Hg (Grade E).

6. In the general nonblack population, including those with diabetes, initial antihypertensive treatment should include a thiazide-type diuretic, calcium channel blocker (CCB), angiotensin-converting enzyme inhibitor (ACEI), or angiotensin receptor blocker (ARB) (Grade B).

7. In the general black population, including those with diabetes, initial pharmacologic treatment should include a thiazide-type diuretic or CCB. (General black population- Grade B; black patients with diabetes - Grade C).

8. In those ≥18 years of age with CKD, regardless of race or diabetes status, initial or adjunct pharmacologic treatment should include an ACEI or ARB to improve kidney outcomes. (Grade B)

9. The main objective of treatment is to attain and maintain blood pressure goal. If the goal is not met within one month of initiating treatment, the medication dose should be increased or a second agent (a thiazide-type diuretic, CCB, ACEI, or ARB) should be added. Blood pressure should continue to be assessed and treatment continue to be adjusted until the appropriate goal is reached. If the goal is not achieved with two medications, a third should be added and titrated. An ACEI and an ARB should not be used together. If first line agents cannot be used due to contraindications or greater than three agents are needed for control, medications from other classes may be considered. Referral to a hypertension specialist may be indicated for complicated patients or if the above strategy does not achieve blood pressure control (Grade E).

Summary
The 2014 JNC 8 guidelines recommend a less aggressive approach to hypertension treatment. For those ≥60 years of age, the recommended blood pressure goal is increased to ≤150/90 mm Hg. For patients <60 years, as well as those with diabetes or CKD, the goal is ≤140/90 mm Hg. First line pharmacologic agents include thiazide-type diuretics, CCBs, ACEIs, and ARBs. Thiazide-type diuretics are no longer the preferred first-line agents and β-blockers are no longer considered for initial treatment of hypertension. Medication recommendations were given for two specific populations: thiazide-type diuretics and CCBs are preferred for the general black population, and ACEIs and ARBs are preferred for those with CKD. In addition, hypertension staging is not included in the algorithm guiding therapy, and there are no specific medication recommendations for those with diabetes.

Hypertension Resources
http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/High-Blood-Pressure-or-Hypertension_UCM_002020_SubHomePage.jsp
http://www.cdc.gov/bloodpressure/other_resources.htm

References
QFC Pharmacy Resident’s Project:
Evaluating the Feasibility of Implementing Diabetes Self-Management Education/Training in the Community Pharmacy Utilizing a Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis and Return On Investment (ROI) Analysis

By
Rebecca Schainost Pharm D, MLS(ASCP)\textsuperscript{cm}

Diabetes Self-Management Education/Training (DSME/T) is a collaborative service for patients with or who are at risk for Type 2 Diabetes Mellitus. It is focused on the American Association Diabetes Educators 7th Edition (AADE7) on Self-Care Behaviors which are deemed essential for improved health status and quality of life. Medicare coverage of hospital-based programs of DSME/T began in 1997 with the Balanced Budget Act. This reimbursement for DSME/T has since expanded to include DSME/T services provided by registered nurses, registered dieticians, and pharmacists meeting program accreditation requirements, provider recognition requirements, and have the ability to bill Medicare Part B using specific billing codes under the pharmacy’s National Provider Identification (NPI) Number. Provider recognition by the Centers for Medicare and Medicaid Services (CMS) or an alternate private third-party payer is necessary to receive reimbursement for DSME/T services provided to qualifying patients.

A community pharmacy with an individual NPI number can now apply for accreditation with either the American Association of Diabetes Educators (AADE) or the American Diabetes Association (ADA) and become recognized as a provider of DSME/T services by third party payers when they meet the necessary DSME/T program application requirements. In the United States, there are just over 100 accredited pharmacies providing DSME/T services, and there are no DSME/T accredited pharmacies in the state of Washington. Guides are available for prospective programs to help them implement DSME/T services, but the number of pharmacy programs providing DSME/T services remains low and little data exists as to why more pharmacies are not pursuing accreditation and recognition to be able to provide these services and receive reimbursement.

The purpose of this residency project study is to evaluate the feasibility of implementing a DSME/T program in community pharmacies to provide insight for pharmacies in Washington State and across the nation. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis will be conducted to provide descriptive evidence of the actual or perceived internal strengths and weaknesses and external opportunities and threats to the implementation of DSME/T services in the community pharmacy as declared by nationally accredited community pharmacy programs and non-accredited Washington pharmacies. A Return On Investment (ROI) analysis will be conducted in addition to the SWOT analysis to provide financial insight into the implementation of DSME/T services in the community pharmacy.

References


Two Steps To Identify Gluten In Medications

By

Rebecca Schainost Pharm D, MLS(ASCP)

It is a pharmacist’s responsibility to be aware of intolerances, allergies, and diet restrictions in our patients. If a patient has a gluten allergy or intolerance or a personal preference to avoid gluten, the pharmacist should be able to identify common medication ingredients that will need further evaluation as to whether they are a significant contributor to the amount of gluten in a medication.

Not all medications contain gluten and some medications contain an amount of gluten that is low enough not to affect a patient, even if the patient does have gluten intolerance. But for some patients with a complete allergy to gluten or has Celiac’s Disease, any amount of gluten could be harmful. By following a couple of steps, the identification of any gluten in a medication is less daunting of a task. Additional lists are also available that identify brand and generic drug products that can contain gluten (see “Additional Resources”). It is important, however, to regularly evaluate medication ingredients, as a manufacturer is able to change medication excipients without notification.

Step 1: Identify any ingredients that may come from a gluten-containing source.

The package insert of a medication will contain this information under the “Description” section. Ingredients to question are:

1. Wheat

2. Starch Ingredients (source not specified)
   a. Starch
   b. Modified starch
   c. Pregelatinized starch
   d. Pregelatinized modified starch
   e. Sodium starch glycolate

3. Any Dex-Ingredient
   a. Dextran
   b. Dextrose
   c. Dextrates, dextrins
   d. maltodextrin

4. Caramel coloring (if barley malt is used)

5. Alcohols

Step 2: Identify the botanical source of the ingredient in question.

This may require a call to the manufacturer if not specified on the label of the medication or within the medication’s package insert (PI). Some manufacturers may indicate directly that a medication is gluten-free.

The website www.glutenfreedrugs.com also provides a list of medications and certain manufacturers that are gluten-free. Table 1 identifies common botanical sources of the ingredients in question.

Gluten Free Sources:

- Corn, potato, tapioca, cornstarch, starch (corn)

Gluten Containing Sources:

- wheat (including spelt, triticale, and kamut), rye, barley

Additional considerations to this information also exists. Although certain sources or items are identified as gluten free, there is always the chance during harvesting or processing that the ingredients could come in contact with gluten containing products. Oats are still a questionable item. In the future, hybrid grains could be genetically engineered to be gluten-free.

By following these steps the pharmacist can provide the patient with accurate information regarding the gluten content of his/her medications. This information can be used to consider the consumption of medications that do or could potentially contain gluten. Evaluating the patient’s allergy or intolerance to gluten or personal preference to avoid gluten is additional criteria to consider when making recommendations to the patient regarding the presence or absence of gluten in his/her medications.

The number of medications a patient is on that contain gluten could also be a contributing factor to consider. It is ultimately the patient’s responsibility to decide if he/she wants to take the medication.
<table>
<thead>
<tr>
<th>Starch</th>
<th>Gluten Free Botanical Source</th>
<th>Gluten Containing Botanical Source</th>
<th>Special considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corn, potato, tapioca¹</td>
<td>Wheat¹</td>
<td></td>
</tr>
<tr>
<td>Pregelatinized starch, pregelatinized modified starch, sodium starch glycolate</td>
<td>Corn, rice, potato¹</td>
<td>Wheat¹</td>
<td>Gluten may be removed during processing*</td>
</tr>
</tbody>
</table>

| Dex-Ingredients | Dextrans | Corn, potato¹ | Wheat, barley² | Usually from corn or potato¹,² in the US³ and generally considered safe for Celiacs disease¹,², but will need to verify botanical source as Dex-ingredients can also come from wheat or barley²,³ |
| Dextrose | Corn¹ | Wheat, barley² |
| Dextrates, dextrins^ | Corn, potato¹ | Wheat, barley² |
| Maltodextrin | Corn, potato² | Wheat, barley² |

| Caramel Coloring | | Barley malt² | Not always made from barley malt² |
| Alcohols | Mannitol and xylitol as well as the following sugar alcohols sorbitol, malitol, lactitol and isomalt⁴ | All alcohols come from wheat³ | Gluten removed during purification* |

*Ingredients in this chart may or may not provide a source of gluten in medication products. Therefore, if the botanical source of the ingredient in question is not specified on the label or within the package insert, inquiring with the drug manufacturer may be necessary to identify the botanical source of the ingredient. In some instances, the drug manufacturer may not know the botanical source of the ingredient in question because they outsource for the ingredient. Identification of the botanical source in this case may take another contact step to the ingredient manufacturer to receive the necessary information on the ingredient’s botanical source.

*gluten may be removed from the product, but gluten can be reintroduced/cross-contaminated back into product during the manufacturing process.

^Dextrin is an incompletely hydrolyzed starch. It is prepared by dry heating corn, waxy maize, waxy milo, potato, arrowroot, WHEAT, rice, tapioca, or sago starches, or by dry heating the starches after: (1) Treatment with safe and suitable alkalis, acids, or pH control agents and (2) drying the acid or alkali treated starch. Therefore, unless you know the source, you must avoid dextrin.⁵

References:

Additional Resources:

### Information:
1. List of Medications alphabetically and by therapeutic indication
2. McNeil OTC (Tylenol/Motrin) Products List
3. List of Excipient processing information
4. Walgreens OTC list (2009)
5. Celiac Sprue
6. Safe and Unsafe Food Ingredient List (includes medication ingredients and dyes)
7. Walgreens and CVS Pharmacy
8. CE – GREAT Celiac Disease Training for Pharmacists

### Where to find it:
- www.glutenfreedrugs.com
- www.celiacmeds.com
- www.celiac.com
- Have OTC gluten-free lists available upon request
- www.proce.com
ASHP Midyear Clinical Meeting

PGY-1 Residents Group Photo With
Amber Glass, Director, UW School of Pharmacy Residency Programs

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