SCHOOL OF PHARMACY
UNIVERSITY of WASHINGTON

The Resident Star

By The University of Washington Community Pharmacy Residents

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Drug Information

2013 ACC/AHA Cholesterol Guidelines: What to know for practice

By John Doric, PharmD (Providence Pharmacy Monroe)

One year out on the press; many clinics are still assimilating to the new lipid guidelines. In order to provide up to date and evidence based recommendations we need to periodically review and adjust therapy as needed. Some of the key changes include:

Select patients should receive high or moderate dose statin therapy, should not titrate to LDL goals, and non-statin therapy should not be routinely recommended.

Guidelines focus on 4 major groups for evidence based therapy management.

*Pooled Cohort Risk Assessment app

available at: http://my.americanheart.org/cvriskcalculator

1. Patients with atherosclerotic cardiovascular disease: ASCVD= Coronary Heart Disease (CHD), Stroke, and Peripheral Arterial Disease
   - ✦ ≤75 years:High Dose
   - ✦ >75 years: Moderate Dose
2. Patients age ≥21 to ≤75 with LDL ≥190 mg/dL
   - ✦ High Dose
3. Patients age 40-75 with diabetes (but without ASCVD) and LDL 70-189 mg/dL
   - ✦ High dose if ASCVD risk* ≥7.5%, Medium dose if <7.5%
4. Patients age 40-75 without ASCVD or diabetes, LDL 70-189 mg/dL, with ASCVD risk* ≥7.5%
   - ✦ Both High and Medium doses appropriate

High Dose (>50% LDL reduction)	· Atorvastatin 40-80 mg · Rosuvastatin 20-40 mg
Moderate Dose (30-50% LDL reduction)	· Atorvastatin 10-20 mg once daily · Fluvastatin 40 mg twice daily or 80 mg (XL) once daily · Lovastatin 40 mg once daily · Pitavastatin 2 to 4 mg once daily · Pravastatin 40 to 80 mg once daily · Rosuvastatin 5 to 10 mg once daily · Simvastatin 20 to 40 mg once daily
Low Dose (<30% LDL reduction)	Intolerability, drug-drug interactions, or two LDL<40 with Moderate Dose

How to apply guidelines to practice: Pooled Cohort Risk Assessment Equation considerations:

- **Positive:** Adaptation of Framingham to include stroke risk.
- **Negative:** Not generated from randomized trial (absolute risk reduction is unknown), and data may overestimate risk up to 75-150% (new REGARDS study is ongoing but may clarify)

Pooled Cohort calculator will classify a rate of 7.5% treatment risk in the average U.S. adult population:

- 40-79 years: 44.3% of all men and 22.5% of all women
- 70-75 years: 99% of persons
- >75 years only those with atherosclerotic cardiovascular disease

Conclusion:

- Consider individual patient factors in recommendations (drug interaction, pregnancy, age, ASCVD risk, etc)
- Take special focus when using pooled cohort equations (groups 3 and 4) who have questionable benefit versus risk of starting or continuing a statin.

References:
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2. Risk Assessment Full Work Group Report - Circulation vol. 129 no. 25 suppl 2 S49-S73
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Drug Information

Use of Antipsychotic Drugs in Elderly Patients with Dementia

By Steven Huang, Pharm.D.
PGY-2 Pharmacy Resident
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Steven Huang, Pharm.D.

In 2005, the US Food and Drug Administration (FDA) warned that use of atypical antipsychotic drugs are associated with an increased risk of mortality in elderly patients with dementia. In 2008, the FDA expanded this warning to include conventional antipsychotics.[1] There have been many studies linking use of these medications with an increase risk of stroke, deep vein thrombosis or pulmonary embolism, and most recently, myocardial infarctions.[2,3] The association of risks for these adverse events remains unclear. However, what is clear is that risks associated with antipsychotic use is dose dependent with risk further increasing in short-term users, male patients, elderly patients or patients with dementia.[4]

Despite FDA warnings and the growing amount of literature cautioning prescribers against overuse of antipsychotic use in the elderly and patients with dementia, some researchers believe the use of these drugs are likely to continue because of the "continued growth of the dementia population" and the need for some type of intervention.[5]

This brings up discussion of ethical and philosophical considerations for use of these medications to control behavior, especially in situations where a patient is unable to provide informed consent. Some ethical considerations include beneficence (the obligation to do good) and nonmaleficence (the obligation to do no harm). It is important to remember that behavior is another form of communication and that there may be other factors, such as pain or anxiety, which could be the underlying cause of a patient's problem behavior. In most cases, environmental modifications and non-drug therapy to prevent and minimize distress is key to managing problem behaviors in elderly patients with dementia.

Centers of Medicare and Medicaid Services regulations for long-term care facilities defines appropriate antipsychotic treatment targets as: aggressive behavior (especially physical), hallucinations (if distressing to person), severe distress as presenting a danger to the person or others. Before resorting to these types of medications, it is imperative to rule out reversible causes and to try non-drug therapies first.

Dementia Antipsychotic Prescribing Guide
Dosing, Special Populations

Dosing

Timing: Usually once daily at night or prior to sundowning. Beware of sedation-related adverse events if given earlier than bedtime.

	Starting Dose (mg/day)	Max Dose for Maintenance* (mg/day)	Special Dosage Forms**
Aripiprazole	2-5	10	ODT, L , IM
Haloperidol	0.25	2	L , IM
Olanzapine	2.5-5	7.5	ODT, L , IM
Quetiapine	12.5-25	150	XR
Risperidone	0.25-0.5	2	ODT, L

*per CMS regulations for long-term care facilities. Doses for acute treatment sometimes exceed maintenance doses.

**ODT = orally dissolving tablet, L = liquid, IM = short-acting intramuscular, XR = extended release.

Dosage forms:

- Regular tablets can be crushed and mixed with food if needed.
- IM antipsychotics used only in emergencies when oral is refused.
- Topical forms, e.g. compounded creams, not recommended. No evidence to guide proper dosing. Absorption is unknown and unpredictable.

Guidance for Special Populations

Frontotemporal dementia: Some evidence for trazodone. Mixed for SSRIs. See Iowa Geriatric Education Center website for details.

Parkinson's disease (PD) and Lewy body dementia (LBD):
-**Movement disorder treatments** (dopamine agonists, carbidopa-levodopa, anticholinergics) can cause **psychosis or delirium**. Prior to antipsychotic use, consider reducing the dose of these drugs to see if the psychosis or behaviors resolve or become manageable.

-People with PD and LBD are **very sensitive to adverse effects**, particularly **movement side effects and neuroleptic malignant syndrome**. If antipsychotics are used, expert guidelines recommend **quetiapine or clozapine** due to lower movement side effect risk.

Renal Impairment: Reduce risperidone dose. Titrate slowly.

Hepatic Impairment: Possibly reduce dose of olanzapine, quetiapine, risperidone. Caution with all.

Dementia Antipsychotic Prescribing Guide
Monitoring for Response and Adverse Effects

Monitoring for Response

-**Clearly document** treatment target symptoms. If the drug does not help, discontinue the drug. These symptoms may also change over time, with or without drug treatment.
-**Do not expect an immediate response.** Sedation may explain much of any immediate effect that is seen. Response may take 2-4 weeks.
-**Do not increase doses too quickly** if the patient doesn't respond right away. At a stable dose, drug blood levels may rise for several days to a week or more before reaching a steady state level. **Increased doses lead to increased side effects.**

Monitoring for Adverse Effects

Other possible adverse effects include: falls, constipation, urinary tract infection, urinary incontinence or retention, stroke, arrhythmias, and neuroleptic malignant syndrome.

Side Effect	Monitoring
Movement Side Effects	Observation for tremor, gait changes, difficulty swallowing, signs of parkinsonism, restlessness (akathisia), unusual movements (tardive dyskinesia).
	Abnormal Involuntary Movement Scale (AIMS) at baseline, every 6 months, or if movement side effects are suspected.
Central Nervous System	
Sedation	Observation, sedation scale if needed.
Confusion, delirium, or other cognitive worsening	Observation for mental status or behavior changes.
	Delirium screening tool, e.g. CAM (Confusion Assessment Method) if delirium is suspected.
Psychotic symptoms	Observation for worsening symptoms.
Cardiovascular / Metabolic	
Orthostatic hypotension	Observation for signs of dizziness or falls.
	Orthostatic blood pressure (if feasible). Monthly, or if signs of dizziness occur. More frequent on initiation or after dose increase.
Edema	Observation for swelling of extremities.
Weight gain	Monthly weight. Consider weekly for 1 month if overweight. Watch for increased appetite.
Hyperglycemia / Diabetes	Blood glucose at baseline, 3 & 6 months, then q6 months. Also PRN symptoms or mental status change. Monitor symptoms: increased thirst, urination, hunger, weakness.
Triglyceride ↑	Fasting blood lipid panel at baseline, 3 & 6 months, then q6 months. Especially if patient has cardiovascular risk factors: e.g. obesity, diabetes, hyperlipidemia.

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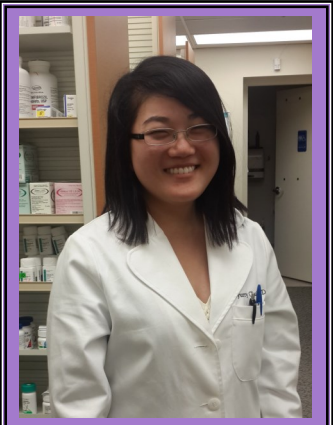
ACIP Update for Pneumococcal Vaccines

By Cyurry Choi, PharmD (QFC Pharmacy)



Cyurry Choi, PharmD

To give or not to give? Prevnar or Pneumovax? How long do I have to wait between vaccines? These questions continue to arise with the updated ACIP recommendations for pneumococcal vaccines—which pneumococcal vaccine to give and when to give it.

Old recommendations

- PPSV23 for people age 65 years and older
- PPSV23 for people age 64 years or younger who have chronic illness or other risk factor:
  - Chronic cardiovascular or pulmonary disease
  - Chronic liver disease
  - Alcoholism
  - Diabetes
  - Cigarette smoking
- PCV13 and PPSV23, separated by 8 weeks or 1 year depending on what was administered first, for people age 19 years and older at highest risk for serious pneumococcal infection
  - Anatomic or functional asplenia
  - Immunocompromised condition or immunosuppressive therapy
  - Cerebrospinal fluid (CSF) leaks
  - Organ or bone marrow transplant
  - Cochlear implant

Why are the recommendations changing?

- CAPITA (Community-Acquired Pneumonia Immunization Trial in Adults) trial results demonstrated statistically and clinically significant efficacy of PCV13 against vaccine-type pneumococcal pneumonia and invasive pneumococcal disease (IPD)
  - Note: The study population was pneumococcal-vaccine naïve.
- Broader protection will be provided when both PCV13 and PPSV23 are used in series
  - PCV13 covers serotypes: 1, 3, 4, 5, **6A,** 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F
  - PPSV23 covers serotypes: 1, **2,** 3, 4, 5, 6B, 7F, **8, 9N,** 9V, **10A, 11A, 12F,** 14, **15B, 17F,** 18C, 19A, 19F, **20, 22F,** 23F, **33F**
  - The serotypes are the serotypes that differ between the two vaccines.
- Immunogenicity studies showed that PCV13 before PPSV23 resulted in higher antibody responses
- Safety was evaluated to be comparable between PCV13 and PPSV23 for both incidence of serious adverse events and the types of reported common adverse reactions

(continued next page)

ACIP Update for Pneumococcal Vaccines (continued)

What are the NEW recommendations (as of September 19, 2014)?

- Both PCV13 and PPSV23 should be administered routinely in series to all adults aged ≥65 years, using recommended intervals (figure 1)
  - ***Pneumococcal vaccine-naïve persons, aged ≥65 years.*** PCV13 followed by a dose of PPSV23 6-12 months after PCV13 dose. Two vaccines should NOT be coadministered. Minimum acceptable interval between PCV13 and PPSV23 is 8 weeks.
  - ***Previous vaccination with PPSV23, aged ≥65 years.*** Dose of PCV13 ≥1 year after most recent PPSV23 dose. If an additional PPSV23 dose is indicated, then subsequent PPSV23 should be given 6-12 months after PCV13 and ≥5 years after most recent PPSV23.
- No change in recommendations for PCV13 in adults aged ≥19 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal fluid leak, or cochlear implants

On a final note, the ACIP recommendations for routine use of PCV13 among adults ≥65 years will be reevaluated in 2018 and revised as needed. Another practical consideration is insurance coverage as patients' insurance may not cover PCV13 if they have already received PPSV23.

References:

- Immunization Action Coalition. Summary of recommendations for adult immunization (age 19 years & older). Updated 2014 Mar. http://www.immunize.org/catg.d/p2011.pdf
- Immunization Action Coalition. Standing orders for administering pneumococcal (PPSV23 and PCV13) vaccine to adults. Updated 2012 Aug. http://www.immunize.org/catg.d/p3075.pdf
- Tomczyk S, Bennett NM, Stoecker C, et al. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine among adults aged ≥65 years: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 2014 Sept 19;63(37):822-825.

Clinical Service

QFC Community Health Screening

By Cyurry Choi (QFC Pharmacy)

Salmon Days 2014

Each year the city of Issaquah hosts the Salmon Days festival over a weekend in early October, and each year QFC hosts a booth at the fair providing influenza and pneumococcal vaccines for festival attendees. The reactions are varied. "Who would want to get a shot at the fair?" "I already got mine." "Children, look, we can get flu shots!" "I keep forgetting to get my flu shot; I might as well get it now since you're here." "I was looking all over for you guys; I get my flu shot at Salmon Days every year. " The latter two reactions are probably the most fulfilling as community pharmacists—since we are being recognized for our promotion of preventive health and immunizations and for our presence within the local community.

The two days at the fair was comparably successful to past years. 115 immunizations were administered, including 20 Fluzone high dose vaccines. We offered immunizations at reduced fees or billed to Medicare. A lot of people were curious about the high dose vaccines and wanted to know more about who should get it and what the benefits were. It was also reassuring to hear that so many individuals either received their flu vaccine already or intended to in the near future at their local pharmacy. Overall, it was an exciting event and an indication of community pharmacists successfully making their presence known.

Clinical Service

Refill authorizations using pharmacist collaborative practice agreements

Pharmacists are medication experts who excel in medication management and monitoring. It just goes to show that they can be an invaluable member of the team working with a collaborative practice agreement to manage medication refill authorizations. At the Providence clinic in Monroe, pharmacist residents have been managing internal medicine refills since 2005 to reduce physician workloads, improve timely and accurate medication approval, as well as perform periodic medication reviews.

Refill authorizations also allow for a second eye to review medications after they are prescribed with the full power of information of the electronic medical record on hand. This allows pharmacists a chance to follow up with patients to address side effects, dose adjust due to drug interactions or drug clearance, encourage patients to complete labs, and ensure more targeted follow up appointments with their primary care provider.

This service owes much of its success due to a history of diverse clinical pharmacist involvement in the clinic and provider confidence in pharmacist services. However it also comes at a time where reducing healthcare costs with improved clinical outcomes is a focus in the modern primary care concept. The patient centered medical home has justification for pharmacist services through improved clinic efficiency, pay for performance incentives, as well as population health management contracted with companies such as Boeing. As such the medication authorization services at Providence is pushing the envelope to improve patient care and advance our profession.

UW Pharmacy Cares & Elder Resident Living Facilities

By Steven Huang, Pharm.D.

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As a resident with UW Pharmacy Cares (UWPC), I provide consulting pharmacy services to different elder living facilities in the Seattle and Greater Seattle area. The University of Washington School of Pharmacy has developed a campus-community collaboration that allows practicing pharmacists to provide the best care for older adults, while also developing new, innovative practices in the field of pharmacy.

I provide comprehensive medication management services to the residents living in these facilities. With UWPC, I have the opportunity to provide one-on-one sessions and home visits for the elder residents. I am also able to provide education and training for facility staff members. It is a pleasure working on an interdisciplinary team that includes a variety of providers, nurses, and social workers. UWPC is in the process of expanding its services to 19 different resident living facilities. It is exciting to be involved in this process and taking part in what is considered a new area of pharmacy practice.

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