

PHARMACY NEWS

Pharmacy Study Concludes Basal-Bolus Insulin Regimen is Safe, Effective, and Easy to Implement.

Pharmacy Resident's study shows goal blood sugars more likely to be achieved with basal-bolus regimen than sliding scale regimens.

From December 2008 to late June 2009, St. Mary's was the site of a study developed and implemented by one of our pharmacy residents Matt Garvin Pharm. D. to improve our patients' blood glucose control. Co- Investigators were Kathryn Marty, Pharm. D., Tammy Adler, R.Ph., Bharat Rhaman, MD, and Kathleen Skibinski M.S., R.Ph..

The objectives of the study were: 1) To determine if a basal-bolus regimen was more effective than sliding scale insulin to achieve the AACE and ADA blood glucose goal of 70-140 mg/dL for non-critically ill inpatients. 2) To determine if a basal-bolus regimen is as safe as or safer than sliding scale insulin. 3) To determine if a basal-bolus regimen can be conveniently implemented on general medicine units.

A total of 50 patients on general medicine units with a diagnosis of type 2 diabetes or impaired fasting glucose were enrolled into the study. The goal blood glucose range was 80-140 mg/dL. Basal-bolus dosing was based on a total daily dose of 0.4 units/kg for patients admitted with BG between 140-200 mg/dL and 0.5 units/kg for patients admitted with BG > 200 mg/dL. The total daily dose was given as 50% basal insulin and 50% prandial insulin. Patients treated with basal-bolus regimen had better overall glycemic control compared to patients treated with sliding scale insulin alone. The basal bolus group had a significantly smaller percentage of episodes of hyperglycemia than patients treated with SSI (32.78% versus 60.08%, P<0.0001). The incidence of hypoglycemia was equal between the two groups, but severe hypoglycemia (BG <50 mg/dL) occurred once in the SSI group and did not occur in the basal-bolus group.

The results of the study proved that basal-bolus insulin is more effective at achieving the blood glucose goal for these patients. Also, the study showed that this basal-bolus insulin regimen did not result in hypoglycemia which did occur with the standard sliding scale orders. This basal bolus regimen is being considered as a standard of practice in caring for hospitalized diabetic patients.

This study is being submitted to several peer-reviewed journals for publication. To learn more about the study, please send an email request to: Tammy_Adler@ssmhc.com

H1N1 Vaccine

The CDC announced this week that the H1N1 vaccine may be available by the end of September and administered to patients the first week of October.

The vaccines are made by four manufacturers who are using the same processes to make the vaccine and have a long record of producing safe seasonal influenza vaccines (CSL

Limited, MedImmune LLC, Novartis Vaccines and Diagnostics Limited, and Sanofi Pasteur inc.)

Groups targeted by the CDC for initial vaccination:

- Pregnant women
- People who live or care for children younger than 6 months old
- Healthcare and emergency services personnel
- Persons between the age of 6 months through 24 years
- People aged 25-64 years who are at higher risk for novel H1N1 because of chronic health disorders and compromised immune systems

Influenza A (H1N1) 2009 Monovalent Vaccines Approved by the FDA 9-09

	Sanofi-Pasteur	Novartis	CSL Limited	MedImmune, LLC
Dosage Forms and Strengths	Prefilled 0.25 mL and 0.5 mL syringes, Single dose 0.5 mL vial- all 3 preservative free (no thimerosal) Multi-dose vial 5 mL contains thimerosal	Prefilled 0.5 mL syringe, thimerosal is removed by subsequent purification to trace amount (<= 1 mcg mercury per 0.5 mL dose) Multi-dose vial 5 mL contains thimerosal	Prefilled 0.5 mL syringe, preservative free Multi-dose vial 5 mL contains thimerosal (each 5 mL dose contains 24.5 mcg of mercury)	Prefilled single-dose intranasal sprayer containing 0.2 mL suspension
Indications and usage	Inactivated vaccine for active immunization ages > 6 months old	Inactivated vaccine for active immunization ages > 4 years old	Inactivated vaccine for active immunization of persons > 18 years old	Live, attenuated intranasal for active immunization ages 2-49 years of age
Contraindications	Severe hypersensitivity to egg proteins or any component of the vaccine or life threatening reactions after previous influenza vaccination	Severe hypersensitivity to egg proteins or any component of the vaccine or life threatening reactions after previous influenza vaccination	Hypersensitivity to eggs, chicken protein, neomycin, or polymixin, or life threatening reaction to previous influenza vaccination	Hypersensitivity to eggs, egg proteins, gentamicin, gelatin or arginine or life threatening reactions to previous influenza vaccination. In addition: Ages < 24 months old or < 5 years old with history of wheezing or any age with history of

				asthma due to increased risk of wheezing post vaccination, immunocompromised patients.
Adverse effects	Local reactions- soreness at injection site, tenderness, pain, and swelling. Systemic reactions- malaise, headache, and myalgia	Mild hypersensitivity reactions (i.e. rash), local reactions at the injection site, and influenza-like symptoms	Local reactions- tenderness, pain, and swelling. Systemic reactions- headache, malaise, and muscle aches.	Concomitant aspirin therapy in children and adolescents Runny nose and congestion for all ages. In children ages 2-6 years old fever > 100 degrees. Adults most common reaction is a sore throat.
Children 2-9 years	NA	NA	NA	2 doses- 0.2 mL each, approximately 1 month apart
Children, adolescents and adults 10-49 years	NA	NA	NA	1 dose 0.2 mL
Children 6-35 months	2 – 0.25 mL IM doses approximately 1 month apart	Not FDA approved for this age group	Not FDA approved for this age group	NA
Children 36 months through 9 yrs	2 – 0.5 mL IM doses approximately 1 month apart	Not FDA approved for this age group	Not FDA approved for this age group	NA
Children 4-9 yrs old	NA	2 – 0.5 mL IM doses approximately 1 month apart	Not FDA approved for this age group	NA
10 years of age and older	Single 0.5 mL IM dose	Single 0.5 mL IM dose	Not FDA approved for this age group	NA
Adults (> 18 yrs old)	Single 0.5 mL IM dose	Single 0.5 mL IM dose	Single 0.5 mL IM dose	NA

Pharmacy Updates- Conversion to B Braun

The pharmacy is in the process of converting manufacturers of all of our IV products from Baxter to B. Braun. IV bags and preparations may appear differently, but the IV products available will not change.

The hospital is in the process of implementing new large volume B Braun IV pumps which are expected to be in use by the end of October. These new pumps utilize smart pump features and have an expanded medication library which will be monitored and maintained by the pharmacy department.

Smiths Medical pumps will be updated with new software for the existing syringe pumps and using new PCA and Epidural pumps in January of 2010. These new pumps have expanded safety features over the current pump technology.

Contact: Ole Bauer R.Ph. for questions regarding the B Braun conversion at ext. 5253

Contact: Rhonda McBain Pharm D or Curt Jacoby Pharm D with questions regarding the B Braun or Smiths Medical pump conversion at ext. 6551

Introducing the new 2009-2010 Pharmacy Practice Residents

The St. Mary's Pharmacy Residency program welcomes our 2 new residents Angie Karls and Heather Christiansen. This year marks the 6th year of our residency program. The Pharmacy Practice Residency program was recently reaccredited by the American Society of Health-Systems Pharmacists.

Angie Karls graduated from the UW Madison School of Pharmacy in May 2009 and became a licensed pharmacist in June. Angie is originally from Middleton, WI. Angie is interested in focusing on psychiatry, critical care, and general medicine. Angie is also interested in learning more about Emergency medicine. Angie is published in a "Spotlight on Pharmacy" articles in the on-line journal *Evidence-Based Practice*.

Heather Christiansen is also from Middleton, WI and graduated in May 2009 from the UW School of Pharmacy and was licensed in June. During pharmacy school she worked on an independent project adapting an oncology patient medication self-monitoring tool for patients with Crohn's Disease. Heather just completed a rotation with the Family Practice Residency team and on 8SW with the hospitalist team, and will soon begin a rotation in critical care.

Newsletter Written by: Tammy Adler R.Ph.

Resources: www.CDC.gov

www.FDA.gov- for more information about H1N1 vaccine