



HOSPITAL  
PHARMACY  
ADMINISTRATION



# HPA Newsletter

Volume III, Issue II

November 2016

## Special points of interest:

- Latest disease updates
- Latest drugs updates

## Inside this issue:

FDA approves first automated insulin delivery device for type I **I**

Vitamin D Deficiency and Schizophrenia **II**

Selected cases of Prescribing errors **III**

## FDA approves first automated insulin delivery device for type 1 diabetes

According to the U. S. Centers for Disease Control and Prevention, approximately 5 percent of people with diabetes have type 1 diabetes. Also known as juvenile diabetes, type 1 diabetes is typically diagnosed in children and young adults. The human pancreas naturally supplies a low, continuous rate of insulin, known as basal or background insulin. In patients with diabetes, the body's ability to produce or respond to insulin is impaired. Because the pancreas does not make insulin in people with type 1 diabetes, patients have to consistently monitor their glucose levels throughout the day and have insulin therapy through injection with a syringe, an insulin pen or insulin pump to avoid becoming hyperglycemic (high glucose levels). In addition, management of type 1 diabetes includes following a healthy eating plan and physical activity.

**The U.S. Food and Drug Administration today approved Medtronic's MiniMed 670G hybrid closed looped system, the first FDA-approved device that is intended to automatically monitor glucose**

**(sugar) and provide appropriate basal insulin doses in people 14 years of age and older with type 1 diabetes without having to consistently and manually monitor baseline glucose levels and administer insulin.**



The MiniMed 670G hybrid closed looped system, often referred to as an "artificial pancreas," is intended to adjust insulin levels with little or no input from the user. It works by measuring glucose levels every five minutes and automatically administering or withholding insulin. The system includes a sensor that attaches to the body to measure glucose levels under the skin; an insulin pump strapped to the body; and an infusion patch connected to the pump with a catheter that delivers insulin. While the device automatically adjusts insulin levels, users need to manually request insulin doses to counter carbohydrate (meal) consumption.

The FDA evaluated data from a clinical trial of the MiniMed 670G hybrid closed looped system that included 123 participants with type 1 diabetes. This clinical trial showed that the device is safe for use in people 14 years of age and older with type 1 diabetes. No serious adverse events, diabetic ketoacidosis (DKA) or severe hypoglycemia (low glucose levels) were reported during the study.

Risks associated with use of the system may include hypoglycemia, hyperglycemia, as well as skin irritation or redness around the device's infusion patch. This version of this device is unsafe for use in children 6 years of age or younger and in patients who require less than eight units of insulin per day.

As part of this approval, the FDA is requiring a post-market study to better understand how the device performs in real-world settings. While the device is being approved today for use in people 14 years of age and older with type 1 diabetes, Medtronic is currently performing clinical studies to evaluate the safety and effectiveness of the device in diabetic children 7-13 years old.

## References:

1. FDA approves first automated insulin delivery device for type 1 diabetes [Internet]. Fda.gov. 2016 [cited 24 October 2016]. [\(Click Here\)](#)

## Vitamin D deficiency and Schizophrenia

Schizophrenia is a debilitating chronic mental illness characterized by positive symptoms, such as hallucinations and delusions, and negative symptoms including flat affect and lack of motivation.

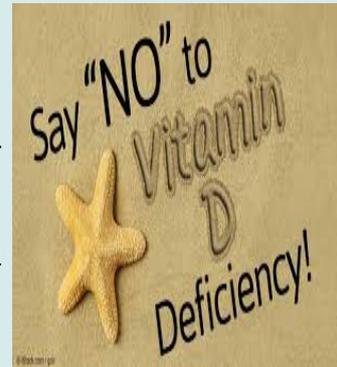
A review of 19 studies, which included more than 2800 participants, showed that those with vitamin D deficiency were more than twice as likely to be diagnosed with schizophrenia compared with their counterparts who were not vitamin D deficient.

**Low vitamin D is commonly found in patients with severe mental illness such as schizophrenia, but it is unclear whether this is a result of psychosis, a predisposing factor, or relating to common risk factors.**

A significant positive correlation was also seen between vitamin D and regional grey matter volume in right hippocampus. The hippocampus is one of the brain regions with maximum concentration of vitamin D receptors and the vitamin has been shown to play a critical role in hippocampal cell survival through its neuroprotective effects.

The relationship could be due to vitamin D impact on neuron-supporting neurotrophin proteins, the nervous system's interaction with the immune system and the excretion of amino acids.

Since deficient brain-derived neurotrophic factor and increased oxidative stress have been associated with schizophrenia, these effects mediated by vitamin D through vitamin D receptors could be critical in this disorder.



### References:

- 1- Vitamin D in schizophrenia: a clinical review. - PubMed - NCBI [Internet]. Ncbi.nlm.nih.gov. 2016 [cited 1 November 2016]. ([Click Here](#))
2. Low vitamin D linked to schizophrenic brain dysfunction [Internet]. NutraIngredients.com. 2016 [cited 1 November 2016]. ([Click Here](#))
- 3- Low Vitamin D Common in Early-Stage Psychosis [Internet]. Medscape. 2016 [cited 1 November 2016]. ([Click Here](#))



## Selected cases of Prescribing errors



**“The five main categories of traditional prescribing errors are wrong patient; wrong drug; wrong dose, strength, or frequency; wrong drug formulation; and wrong quantity .”**

### PRESCRIBING ERRORS



### Prescribing error

An error in the choice or administration of drugs for patients. Included are incorrect dose or medicine, duplicate therapy, incorrect route of administration, or wrong patient. In one extensive study of prescriptions written by physicians in a tertiary-care teaching hospital, 0.3% were erroneous, and more than half of these were rated as having the potential for adverse consequences. Monitoring of medications and patients is thought to be helpful in limiting these errors.

### Examples of prescribing errors:

NO HARMe has recently received the following reports of prescribing errors:

- 1- Doctor ordered digoxin Tab. 0.25 mg daily and patient with CrCl 30 mL/min and dose must be adjusted to 0.125 mg once daily.
- 2-Hyperkalemic patient with serum k=5.8 mEq/L was prescribed Aldactone which is contraindicated in hyperkalemia.
- 3-Doctor ordered hydrochlorothiazide for patient with ESRD with CrCl below 10 mL/min (contraindicated).

### How to Avoid This Medication Error:

- 1- Obtain, record (preferably on every page of the patient record, along with the patient's name), and update (preferably at every visit) the patient's drug allergies.
- 2- Keep every patient's medication list up-to-date and in a consistent place in the medical record. This system helps to avoid prescribing duplicative medications, missing potential drug interactions, prescribing contraindicated medications, over-medicating.
- 3- Include in the medication record all prescriptions written (name, dose, number, refills), samples dispensed, date written, diagnosis for which medication written, special instructions given, and a check-box indicating whether written instructions were provided.
- 4- Include in each entry the name of the medication, dose, number dispensed, and instructions when recording medications ordered and refilled in the progress notes. Do not simply record "Refill meds," which is ambiguous if a patient is taking more than 1 type of medication.

5- When ordering a new medication, inform the patient about potential side effects and document that the patient has been so advised.

6- At each visit, ask the patient what medications he/she is taking. It is easy to forget that patients see more than 1 nurse practitioner or physician. Ask the patient to include over-the-counter and prescription medications and herbal remedies. An even better habit is to ask patients to bring all medication bottles at each visit.

7- Open a pharmaceutical reference book or log on to Epocrates.com and read the patient contraindications, drug interactions, pregnancy precautions, and possible side effects. Review for yourself the indications, dosing, interactions, and precautions.

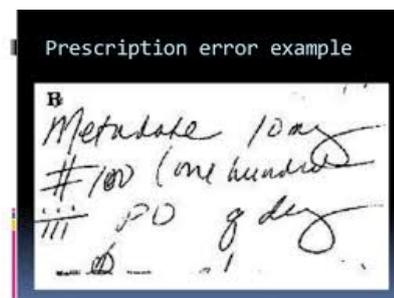
8- Provide printed patient medication information forms that list indication, dosing, potential side effects, and drug interactions for often-prescribed medications.

9- Rule out pregnancy before prescribing certain medication to females capable of becoming pregnant.

10- If a patient exhibits "nonadherence" to a treatment plan for chronic non-cancer pain or is not improving on the current treatment, or if the practitioner suspects that the patient is abusing or diverting medication, refer the patient to a pain specialist for consultation or evaluation/management. Don't keep prescribing opioids without evidence that the treatment is working.

### References:

- 1. 10 Habits to Adopt to Avoid Prescribing Errors [Internet]. Medscape. 2016 [cited 15 November 2016]. [\(Click Here\)](#)





## HOSPITAL PHARMACY ADMINISTRATION



Central Administration of  
Pharmaceutical Affairs (CAPA)

Hospital Pharmacy  
Administration (HPA)

21 Abd El-Aziz Al Soud Street,  
El-Manial,  
Cairo,  
Egypt

Phone: +202 25354100

Fax: +202 23610497

E-mail:

hosprx@eda.mohealth.gov.eg

Visit Our Website:

[www.eda.mohealth.gov.eg](http://www.eda.mohealth.gov.eg)

## HPA

### Our Newsletter

The Hospital Pharmacy Administration Newsletter aims to publicize up-to-date news, information, resources, and recent healthcare topics that have an impact on the patient's quality of care in addition to practices serving physicians and pharmacists. A main goal of this publication is to send our news and updates on health care drug related issues, recently reported and have direct impact on Clinical and Hospital Pharmacy practice in Egypt.

### Hospital Pharmacy Administration (HPA)

#### Vision

To implement and spread clinical awareness among our hospital pharmacists to ensure better patient quality of care.

#### Mission

To manage and assure that hospital pharmacists meet each individual patient's drug-related needs through provision of pharmaceutical care services.

#### Goals and Objectives

Increase awareness of hospital Pharmacists on the importance of applying clinical knowledge in their pharmacy practice through:

- Plotting an appropriate pharmaceutical care plan for each patient according to his medication use strategy.
- Helping healthcare team through promptly responding to drug information requests.
- Integrating patient counseling into the process of dispensing.

### NO HARMe

**NO HARMe** is a national voluntary medication error and 'near miss' reporting program founded for the purpose of sharing the learning experiences from medication errors. Implementation of preventative strategies and system safeguards to decrease the risk for error-induced injury and thereby promote medication safety in healthcare is our collaborative goal.

To report a medication error to NO HARMe:

- Visit our website: [www.eda.mohealth.gov.eg](http://www.eda.mohealth.gov.eg)
- or,
- Email us at:  
[medication.errors.system@gmail.com](mailto:medication.errors.system@gmail.com)

**NO HARMe** guarantees confidentiality  
and security of information received



**WHEREVER THE ART OF  
MEDICINE IS LOVED,  
THERE IS ALSO A LOVE  
FOR HUMANITY**

