12-7-2015

Implementing Pharmacist-Led Osteoporosis Testing and Education in Community Pharmacies

Chukwuemezie F. Chimezie
Southwestern Oklahoma State University

Nancy Williams
Southwestern Oklahoma State University, nancy.williams@swosu.edu

Henry Kinnard
Southwestern Oklahoma State University

Abstract

□ Osteoporosis is a common disease of the bones that is characterized by a decrease in bone density and bone strength, resulting in bone fragility.

□ In the United States, approximately 44 million people have low bone density, 10 million of whom have osteoporosis and 34 million with osteopenia. This equates to about 55% of the U.S. population aged 50 years and older. The number of people with osteoporosis-related... **Read More**

Follow this and additional works at: http://dc.swosu.edu/cop_pp_student

Recommended Citation

Chimezie, Chukwuemezie F.; Williams, Nancy; and Kinnard, Henry, "Implementing Pharmacist-Led Osteoporosis Testing and Education in Community Pharmacies" (2015). *Student Research*. 3.
http://dc.swosu.edu/cop_pp_student/3

Implementing Pharmacist-Led Osteoporosis Testing and Education in Community Pharmacies

Chukwuemezie F Chimezie, BS, PharmD, Nancy T Williams, PharmD, BCPS, BCNSP, FASHP, Henry "Jay" Kinnard, Jr. DPh

Southwestern Oklahoma State University College of Pharmacy and Walgreen Co., Oklahoma City, OK

Introduction

❑ Osteoporosis is a common disease of the bones that is characterized by a decrease in bone density and bone strength, resulting in bone fragility.[1]

❑ In the United States, approximately 44 million people have low bone density, 10 million of whom have osteoporosis and 34 million with osteopenia.[2] This equates to about 55% of the U.S. population aged 50 years and older. The number of people with osteoporosis-related fractures is predicted to increase dramatically due to the aging population of the country.[2]

❑ Osteoporotic bone fractures are responsible for pain, decreased quality of life, lost workdays, and disability.

❑ It is important to identify and test patients at high risk for developing osteoporosis, as well as implement strategies to help prevent or delay the onset of this disease.

❑ Pharmacists play a critical role in our healthcare system since they are easily accessible in the community.

Objectives

❑ To develop and implement models pharmacists can utilize in a community pharmacy setting to test and identify patients at risk for osteoporosis.

❑ To determine the feasibility of implementing this model in additional community pharmacy locations.

Methods

❑ Patients will be recruited through a computer-generated report identifying females aged 50 years or older and females 18 years or older and taking medications (Table 1) that lower bone density. These patients must have filled a prescription at the community pharmacy within the past 6 months.

❑ Patients presenting to the pharmacy with identified risk factors will also be offered screening.

❑ The Simple Calculated Osteoporosis Risk Estimation (SCORE) risk assessment tool will be completed on the patients to identify their risk for developing osteoporosis. This tool was selected because it has been validated in women in multiple studies for predicting low bone mineral density (BMD) and osteoporotic fracture.

Methods Cont.

❑ Patients exhibiting moderate to high risk for developing osteoporosis based on their SCORE result will be offered BMD screening using a portable heel ultrasound densitometer (Hologic Sahara Bone Densitometer), which will determine T-scores. There will be no additional cost to patients for participating in this study.

❑ Those patients with 2 risk factors for osteoporosis and a T-score below -1.0 or those patients with 0-1 risk factors and a T-score below -2.0 will be referred to their physician for dual-energy x-ray absorptiometry and/or pharmacotherapy.

❑ Every patient that completes the BMD screening will be offered personalized consultation on osteoporosis by a pharmacist. At 6 to 8 weeks after BMD screening, patients will be contacted by telephone for follow-up on physician referral, as well as any behaviors initiated and/or medications modified.

❑ **Inclusion Criteria:** females 50 years or older and females 18 years of age and older and taking medications that lower bone density (Table 1).

❑ **Exclusion Criteria:** Males, patients under the age of 18, females who are pregnant, patients whose skin is abraded and/or have an open sore in the area that comes in contact with the system, patients who have received a dual-energy x-ray absorptiometry in the past 2 years.

❑ **Data Collection**: Patient demographic information survey (including education level, yearly household income and amount willing to pay for BMD test), SCORE risk assessment results, and T-scores from BMD readings. The entire amount of time a pharmacist would need to perform the duties from screening to counseling will also be recorded.

❑ The study protocol has been approved by the university IRB committee.

Table 1: Medications Associated With Osteoporosis[1]
Anticoagulants (heparin, warfarin, LMWH: dalteparin, enoxaparin)
Anticonvulsants (carbamazepine, divalproex sodium, gabapentin, lamotrigine, levetiracetam, oxcarbazepine, phenobarbital, phenytoin, topiramate, valproic acid)
Cyclosporine A and tacrolimus
Cancer chemotherapy drugs (anastrozole, letrozole, leuprolide)
*Glucocorticoids (betamethasone, dexamethasone, hydrocortisone, methylprednisolone, prednisone, prednisolone, traimacinolone)
Lithium
Methotrexate
Thyroxine

* Glucocorticoids: ≥ 5 mg/d of prednisone or equivalent for ≥ 3 months[2]

Results

❑ Data collection period is expected to last for four months, starting from December 2014 to March 2015. To date, no patients have been tested for osteoporosis.

❑ Initial computer-generated report identified 41 females aged 18 years and older on medications that lower bone density.

❑ Second computer-generated report identified 528 females aged 50 years and older.

❑ Descriptive statistics will be used to assess data.

Limitations

❑ Exclusion of males from the study protocol may not be representative of the general population.

❑ Travel distance may prevent identified patients from participating in the study.

❑ Although the counseling information is standardized, differences in pharmacists' consultation techniques may lead to variations in information presented to patients.

Implications

❑ The results of this project will help to determine the role of pharmacists in osteoporosis testing in healthcare settings.

❑ Patients' awareness of osteoporosis, including preventive and treatment options, will increase.

❑ This project will determine whether this program model can be implemented in other community pharmacy locations.

References

1. Osteoporosis Handout on Health. National Institute of Health Osteoporosis and Related Bone Diseases ~ National Resource Center. 2011 http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/osteoporosis_hoh.asp#5. Assessed 23 September 2014

2. National Osteoporosis Foundation. Clinician's Guide to Prevention and Treatment of Osteoporosis. Washington, DC: National Osteoporosis Foundation; 2010Web. 23 September 2014.

3. DiPiro JT, Talbert RL, Yee GC., et al. (2011). Osteoporosis and Other Metabolic Bone Disorders. O'Connell MB. & Borchert JS., Pharmacotherapy: A Pathophysiologic Approach, nineth edition (pp. 1477-1504). New York, NY: The McGraw-Hill Companies.

4. Are you at Risk for Osteoporosis? Pharmacist Letter/Prescriber's Letter to give to their patients. 2008.

Disclosures

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

Chukwuemezie Chimezie: Nothing to disclose
Nancy Williams: Nothing to disclose
Henry Kinnard: Nothing to disclose

Presented at 49th ASHP Midyear Clinical Meeting, Anaheim, CA, December 7-11, 2014.