

Science Matters October 2015

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Pharmacy Residencies Teach Value of Research

A study led by a former Kaiser Permanente pharmacy resident and her advisors was recently accepted for publication. It may have implications for treatment recommendations regarding drugs prescribed to older adults.



Dr. Robert Deamer and Dr. Mitchell Pelter

Jody Santos, PharmD, a faculty member of Loma Linda University School of Pharmacy, worked on the study when she was a resident in the Kaiser Permanente Woodland Hills Pharmacy Residency Program in 2013 and 2014. The study manuscript was recently accepted for publication by the *Journal of the American Geriatrics Society*.

Her research focused on nitrofurantoin, an antibiotic used to treat lower urinary tract infections in older people. The study looked at the belief that nitrofurantoin causes respiratory problems in patients who take it on a long-term basis and that it is not effective for people with impaired kidney function.

“My advisors encouraged me to pursue a project that would really interest me,” Dr. Santos said. “The use of nitrofurantoin seemed especially relevant, since so many older adults experience lower urinary tract infections.

“Pulling a large number of medical and prescription records from KP HealthConnect® allowed us to pursue a more robust study with a bigger sample size than other studies we found on the subject,” she added.

About the study

Dr. Santos and her co-investigators tested recommendations of the 2012 American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults, known as AGS Beers Criteria. The criteria offer guidelines for health care professionals to help improve the safety of prescribing medications for this population.

Dr. Santos’s study supported the criteria’s recommendation that nitrofurantoin should not be used for more than 2 weeks. Through the study, investigators found that patients who took the drug for more than 14 days faced a 53% increased risk of experiencing lung problems.

However, it also found that there was no difference in effectiveness between groups of patients treated with nitrofurantoin who have normal, intermediate, and poor kidney function, refuting another Beers Criteria recommendation.

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Other study team members included Robert Deamer, PharmD, BCPS, Pharmacy PGY1 residency coordinator; Mitchell Pelter, PharmD, FCSHP, residency program director; and Michael Batech, DrPH, biostatistician II in R&E.

"Safe and effective medication use in the elderly remains a major priority for clinicians," Dr. Deamer said. "Our findings further define the appropriate use of an important antimicrobial agent for infections commonly encountered in geriatrics."

Dr. Deamer, who directs the physician Drug Education Program for KP in Ventura County and teaches in the Woodland Hills pharmacy residency program, is a strong advocate of promoting evidence-based medicine among residents. All residents are required to conduct a research project and prepare a manuscript suitable for publication in a medical or pharmacy journal.

"By encouraging our residents to conduct real research, we hope they gain important insights and perspective as to the nature of medical evidence and become more educated consumers of medical literature as clinical pharmacists," Dr. Deamer added.

"While our residents are trained to be direct patient care clinicians and critical decision makers, we want them to continue to be observant, too," Dr. Pelter said. "We stress that the real genius in research is shown by asking the right, focused, researchable question. The rest is technical and can be easily taught."

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