

# Quarterly / Summer 2019 **Newsletter** Volume 1 | Issue 1 | RetroDUR

833-304-7387

# Announcement

We are pleased to announce that one of the newest vendors for the RetroDUR Program, The Marshall DUR Coalition, has gone live and is now accepting calls from both pharmacists and clients. The Coalition can be reached at 833-304-7387.

# Inside This Issue

PG. 2 Stopping the Spread of HIV in Your Community

**PG's 3-4** Medications to Avoid in Patients with Systolic Heart Failure

PG. 5 Improving Adherence – Overall Health & Wellbeing

# Stopping the Spread of HIV in Your Community

By Casey Fitzpatrick Clinical Assistant Professor Marshall University School of Pharmacy

The CDC estimated that by the end of 2016, approximately 1.1 million people in the United States, aged 13 years and older, had an HIV infection<sup>.1</sup> There are nearly 2,000 people living with HIV in West Virginia.<sup>2</sup> HIV is a virus that can be transmitted from person to person in certain body fluids. These fluids include blood, semen, pre-seminal fluids, rectal fluids, vaginal fluids, and breast milk. In the United States, HIV is spread mainly by:<sup>3</sup>

- Engaging in anal or vaginal sex with someone who has HIV without using a condom or taking medicines to prevent or treat HIV
- Sharing injection drug equipment, such as needles or syringes, with someone who has HIV

Healthcare providers can help stop the spread of HIV by disseminating educational resources on HIV risks and prevention to populations at risk. The practices listed in the box to the right can drastically reduce the transmission of HIV.

# Safe Practices Include (not all inclusive):

- Do not inject drugs. If a person does, use only sterile injection drug equipment and never share equipment with others.
- Practice safe sex habits
  - Use condoms
  - Avoid or limit sex with multiple partners
- Discuss pre-exposure
  prophylaxis (PrEP) with a
  health care provider. PrEP is
  an HIV prevention option for
  those who do not have HIV
  but are at high risk for
  becoming infected.

References

- Centers for Disease Control and Prevention. Estimated HIV Incidence and Prevalence in the United States, 2010–2016. <u>https://www.cdc.gov/hiv/pdf/library/slidesets/cdchiv-incidence-prevalence-2010-2016.pdf</u>. Accessed June 14, 2019.
- 2. AIDSVu-Local Data-West Virginia [Internet]. AIDSVu. [cited 2019 June 14]. Available from: https://aidsvu.org/state/west-virginia/
- Transmission | HIV Basics | HIV/AIDS | CDC [Internet]. 2018 [cited 2019 Jun 14]. Available from: https://www.cdc.gov/hiv/basics/transmission.html





### Medications to Avoid in Patients with Systolic Heart Failure

By Sarah Plummer Clinical Assistant Professor Marshall University School of Pharmacy

Heart Failure (HF) affects 6.5 million people in the U.S. – a number expected to increase to more than eight million by  $2030.^{1}$ HF is one of the most common reasons for hospitalizations. While morbidity and mortality associated with HF are high, the use of appropriate evidence-based treatments allow patients to live longer and have a better quality of life.<sup>2</sup> It is likely that the prevention of drug-drug interactions and direct myocardial toxicity would reduce hospital admissions, thus both reducing costs and improving quality of life. The American College of Cardiology/American Heart Association released a Scientific Statement in 2016 which discusses medications that may cause or exacerbate HF.<sup>3</sup> The following is not an all-inclusive list but intended to point out some of the most commonly used classes of medications in patients with systolic heart failure.

#### **Calcium Channel Blockers**

Non-dihydropyridine calcium channel blockers (CCB's) (e.g. verapamil and diltiazem) have negative inotropic effects and can worse HF. In a study of 2466 patients with recent MI randomized to diltiazem or placebo, diltiazem increased the risk of adverse cardiac events in the subgroup of 490 patients with baseline pulmonary congestion.<sup>4</sup> Kindly consider avoiding the use of these medications unless necessary for heart rate control and/or intolerance to beta blockers. Consider the use of amlodipine or maximizing heart failure specific beta blockers (e.g. metoprolol succinate) to reduce the need for CCB's, if possible.

#### **Antiarrthyrmics**

Several recent clinical trials have indicated an increased risk of mortality may exist in HF patients who are taking dronaderone. The ANDROMEDA trial examined the effect of dronedarone on death and hospitalization for HF and was terminated prematurely for increased mortality (8.1%) in the dronedarone arm compared with placebo (3.8%). The excess mortality was caused mostly by HF.<sup>5</sup> Another study, PALLAS, tested whether dronedarone reduced cardiovascular events in patients with permanent atrial fibrillation. PALLAS was terminated prematurely after enrolling 3236 patients

because dronedarone was associated with an increase in cardiovascular death, stroke, and hospitalization for HF.<sup>6</sup> Thus the prescribing information for dronedarone carries a black box warning that the drug is contraindicated in patients with symptomatic HF with recent decompensation requiring hospitalization, or NYHA class IV HF, with a doubling of the mortality in these patients.

#### <u>Metformin</u>

The FDA published a safety announcement in 2016 recommending that metformin be contraindicated in patients with renal function below 30 mL/min/1.73m<sup>2</sup>.<sup>7</sup> The 2019 American Diabetes Association standards of medical care currently recommend that metformin can be used in patients with stable congestive heart failure, if estimated glomerular filtration rate remains >30 mL/min/1.73m<sup>2</sup> but should be avoided in unstable or hospitalized patients with congestive heart failure.<sup>8</sup> Unfortunately, prospective data evaluating the safety of metformin in patients with advanced HF (stage D), in whom hepatic and renal dysfunction is often encountered, are lacking.

#### <u>NSAIDs</u>

Several observational studies suggest an association between traditional NSAIDs use and HF precipitation and exacerbation.<sup>9-12</sup> NSAIDs have the potential to trigger HF through sodium and water retention, increased systemic vascular resistance, and blunted response to diuretics. The American College of Cardiology Foundation/American Heart Association HF guidelines recommend that this class of drugs be avoided or withdrawn whenever possible.<sup>2</sup>

#### <u>Thiazolidinediones</u>

Early postmarketing data and data from recent metaanalyses, which included pivotal randomized, controlled trials, and observational studies strongly suggested that thiazolidinediones exacerbate existing HF and increase the risk for new-onset HF.<sup>13-19</sup> The 2019 American Diabetes Association standards of medical care recommend sodiumglucose co-transporter 2 inhibitors in patients with atherosclerotic cardiovascular disease at high risk of heart failure or in whom heart failure coexists.<sup>8</sup>



#### References

- 1. Benjamin, E.J., et al., *Heart Disease and Stroke Statistics*-2018 Update: A Report From the American Heart Association. Circulation, 2018. 137(12): p. e67–e492.
- Yancy, C.W., et al., 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. Circulation, 2013. 128(16): p. e240–327.
- 3. Page, Robert L., et al. "Drugs that may cause or exacerbate heart failure: a scientific statement from the American Heart Association." *Circulation* 134.6 (2016): e32-e69.
- 4. The effect of diltiazem on mortality and reinfarction after myocardial infarction: the Multicenter Diltiazem Postinfarction Trial Research Group. *N Engl J Med.* 1988;319:385–392.
- Køber L, Torp-Pedersen C, McMurray JJ, Gøtzsche O, Lévy S, Crijns H, Amlie J, Carlsen J; Dronedarone Study Group. Increased mortality after dronedarone therapy for severe heart failure [published correction appears in *N Engl J Med.* 2010;363:1384]. *N Engl J Med.* 2008;358:2678–2687. doi: 10.1056/NEJ Moa0800456
- 6. Connolly SJ, Camm AJ, Halperin JL, Joyner C, Alings M, Amerena J, Atar D, Avezum Á, Blomström P, Borggrefe M, Budaj A, Chen SA, Ching CK, Commerford P, Dans A, Davy JM, Delacrétaz E, Di Pasquale G, Diaz R, Dorian P, Flaker G, Golitsyn S, GonzalezHermosillo A, Granger CB, Heidbüchel H, Kautzner J, Kim JS, Lanas F, Lewis BS, Merino JL, Morillo C, Murin J, Narasimhan C, Paolasso E, Parkhomenko A, Peters NS, Sim KH, Stiles MK, Tanomsup S, Toivonen L, Tomcsányi J, Torp-Pedersen C, Tse HF, Vardas P, Vinereanu D, Xavier D, Zhu J, Zhu JR, Baret-Cormel L, Weinling E, Staiger C, Yusuf S, Chrolavicius S, Afzal R, Hohnloser SH; PALLAS Investigators. Dronedarone in high-risk permanent atrial fibrillation [published correction appears in N Engl J Med. 2012;366:672]. N Engl J Med. 2011;365:2268-2276. doi: 10.1056/NEJMoa1109867.
- US Food and Drug Administration. FDA Drug Safety Communication: FDA revises warnings regarding use of the diabetes medicine metformin in certain patients with reduced kidney function. http:// www.fda.gov/downloads/Drugs/DrugSafety/UCM494140. pdf. April 8, 2016. Accessed March 22, 2019.
- 8. American Diabetes Association. "10. Cardiovascular disease and risk management: standards of medical care in diabetes—2019." *Diabetes care* 42. Supplement 1 (2019): S103-S123.
- Feenstra J, Heerdink ER, Grobbee DE, Stricker BH. Association of nonsteroidal anti-inflammatory drugs with first occurrence of heart failure and with relapsing heart failure: the Rotterdam Study. Arch Intern Med. 2002;162:265–270.
- Heerdink ER, Leufkens HG, Herings RM, Ottervanger JP, Stricker BH, Bakker A. NSAIDs associated with increased risk of congestive heart failure in elderly patients taking diuretics. *Arch Intern Med.* 1998;158:1108–1112.
- 11. Page J, Henry D. Consumption of NSAIDs and the development of congestive heart failure in elderly patients: an underrecognized public health problem. *Arch Intern Med.* 2000;160:777–784.
- Huerta C, Varas-Lorenzo C, Castellsague J, García Rodríguez LA. Non-steroidal anti-inflammatory drugs and risk of first hospital admission for heart failure in the general population. *Heart.* 2006;92:1610–1615. doi: 10.1136/hrt.2005.082388.
- Singh S, Loke YK, Furberg CD. Thiazolidinediones and heart failure: a teleo-analysis. *Diabetes Care*. 2007;30:2148–2153. doi: 10.2337/dc07-0141.





- 14. Hernandez AV, Usmani A, Rajamanickam A, Moheet A. Thiazolidinediones and risk of heart failure in patients with or at high risk of type 2 diabetes mellitus: a meta-analysis and meta-regression analysis of placebo-controlled randomized clinical trials. *Am J Cardiovasc Drugs*. 2011;11:115–128. doi: 10.2165/11587580-00000000-00000.
- Filion KB, Joseph L, Boivin JF, Suissa S, Brophy JM. Thiazolidinediones and the risk of incident congestive heart failure among patients with type 2 diabetes mellitus. *Pharmacoepidemiol Drug Saf.* 2011;20:785–796. doi: 10.1002/pds.2165.
- Loke YK, Kwok CS, Singh S. Comparative cardiovascular effects of thiazolidinediones: systematic review and metaanalysis of observational studies. *BMJ*. 2011;342:d1309.
- Lago RM, Singh PP, Nesto RW. Congestive heart failure and cardiovascular death in patients with prediabetes and type 2 diabetes given thiazolidinediones: a meta-analysis of randomized clinical trials. *Lancet.* 2007;370:1129–1136. doi: 10.1016/ S0140-6736(07)61514-1.
- Komajda M, McMurray JJ, Beck-Nielsen H, Gomis R, Hanefeld M, Pocock SJ, Curtis PS, Jones NP, Home PD. Heart failure events with rosiglitazone in type 2 diabetes: data from the RECORD clinical trial. *Eur Heart J.* 2010;31:824–831. doi: 10.1093/eurheartj/ehp604.

## Improving Adherence – Helping our Patients Take Medications to Improve Overall Health and Wellbeing

By: Craig Kimble, PharmD, MBA, MS, BCACP Associate Professor of Pharmacy Practice Marshall University School of Pharmacy

The former surgeon general of the United States, C. Everett Koop, MD, was once quoted as saying, "Drugs don't work in patients who don't take them". There is a lot of truth to this quote and nonadherence to medication is the driving force behind over \$100 billion in hospital readmission and healthcare costs. Each of us have the opportunity to help influence medication adherence if we focus at least a few minutes on this at each patient encounter.

There are several reasons for nonadherence to medications. Some are: cost of medications (too expensive), taking too many medications, poor memory, drug switching and confusion, difficulty understanding directions or health literacy, overlapping fills of medications, non-persistent patients, prescriptions are returned to stock at the pharmacy or the patient never picks them up, requirement for 90 day or 30 day fills, physical limitations, drug interaction, drug adverse events, etc.

Some of the reasons for nonadherence are preventable and some are not. The important thing is that we look for reasons that a patient might stop taking a medication or did stop taking a medication at each opportunity and ensure we address patient concerns. Some ways we can help improve adherence to medications include the following:

- Ensuring we take the time to do thorough medication reconciliation at each transition of care point (hospital admission, hospital discharge, starting to see a new provider, etc.)
- Working with other health care professionals to address medication concerns that the patient voices (monitoring, follow up, alternative therapies, etc.)
- Address cost and formulary and prior authorization concerns up front to ensure the patient can get their medications and follow up at each encounter to ensure problems have not arose. Patients may benefit from enrollment in patient assistance programs, being set up on a \$4 or similar generic program, discussing with their physician what will work for them to get buy in
- Help educate patients about how an ACO or Medical Home might help them with continuity of care (referrals, lab testing, refills, scheduling, etc.)
- Monitor for and consider possible drug-drug interactions and adverse events to medications at each encounter including looking at herbals or natural products
- Educate patients both verbally and in writing
- Use motivational interviewing techniques as you educate and assess a patient to address concerns and improve goal setting. These include:



- Getting permission, asking open ended questions, reflective listening, and summarizing at each encounter. We can't change them, but we can be supportive, encouraging, help to reduce resistance, and help patients improve self-efficacy
- Use adherence tools: pre-counts, pill boxes, checklists, beeping alarms, putting doses in daily planner, leave notes or reminders, and establish and use support networks
- Establish patients on medication synchronization programs when on complex regimens or multiple medications

### The Simple Facts Are...

Nonadherence can increase healthcare costs for the entire healthcare system. It can also decrease patient productivity and quality of life. We know nonadherence happens for a multitude of reasons and we have to try and manage it at every encounter with our patients using a patientcentered approach. Work with your pharmacist to identify the root cause of nonadherence and formulate a plan with the patient to address those issues and resolve any drug related problems you identify.

- Benner JS et al. JAMA. 2002;288(4):455-61.
- Osterberg et al. N Engl J Med 2005; 353: 487-97.

