PharmaSuitables
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Disclosures

• Steve and Zach work for Rocky Mountain Health Plans.
• Tom works for Primary Care Partners.
• We do not have any financial interest in the medications we are discussing today.
• We have no intention to malign any person, business or product.
Clicker Question

• What are the brand names of the two LAMA nebulizer formulations?
  A. Yeppy and Skippy
  B. Lonhala and Yupelri
  C. Vanhalla and Yuppers
  D. Breathebetter and BetterNeb
LAMA nebulizer options

Two nebulizer solutions now available
Initial Treatments – GOLD groups

• Group A (any bronchodilator)
  – 0 to 1 moderate exacerbation w/o hospitalization
  – mMRC 0-1 CAT < 10

• Group B (long acting bronchodilator – LABA/LAMA)
  – 0 to 1 moderate exacerbation w/o hospitalization
  – mMRC ≥ 2 CAT ≥ 10

• Group C (LAMA)
  – ≥ 2 exacerbations and at least 1 hospitalization
  – mMRC 0-1 CAT < 10

• Group D (Combination)
  – ≥ 2 exacerbations and at least 1 hospitalization
  – mMRC ≥ 2 CAT ≥ 10
Lonhala Magnair and Yupelri

• Both are long-acting muscarinic antagonists (LAMA)
• Both are indicated for maintenance treatment of patients with COPD
• Administration is 2-3 minutes for Lonhala and on avg. 8 minutes for Yupelri
• Clinical trials showed significant change from baseline FEV$_1$
• Data on decreased exacerbations is still limited
LONHALA® MAGNAIR®
(glycopyrrolate) Inhalation Solution for the treatment of COPD
Including chronic bronchitis and/or emphysema

INHALERS

Not actual patients.

Assembly required.

JET NEBULIZERS

PREScribing Information

PATIENT INFO
Lonhala Magnair (glycopyrrolate)

• Lonhala (glycopyrrolate) must be used with Magnair nebulizer device
• Dosing
  – Inhale contents of 1 vial (25 mcg) TWICE daily
• Adverse Effects
  – Dyspnea (4.9% vs. 3% placebo), UTI (2.1% vs. 1.4%)
• Requires two prescriptions
  – Initial script for Starter kit that includes the nebulizer system
  – Secondary script for refills
• Due to the device being considered part of the drug, this is a Part D (pharmacy) only drug
Introducing YUPELRI™ (revefenacin) inhalation solution
the first and only once-daily nebulized LAMA, for
a full 24 hours of lung function improvement in
patients with COPD

LEARN MORE

FOR THE DAILY STRUGGLES
OF COPD

Not actual size.
Yupelri (revefenacin)

• Is only a solution and can be used with any standard jet nebulizer device

• Dosing
  – Inhale contents of 1 vial ONCE daily using a nebulizer

• Adverse effects
  – Nasopharyngitis (4% vs. 2% placebo), URTI (3% vs. 2%), Headache (4% vs. 3%), Back pain (2% vs. 1%)

• Since this is a drug that being administered via a nebulizer (pump), it is a Part B (medical) only drug
## LAMA Comparison

<table>
<thead>
<tr>
<th></th>
<th>Incruse (umeclidinium)</th>
<th>Lonhala Magnair (glycopyrrolate)</th>
<th>Spiriva (tiotropium)</th>
<th>Tudorza Pressair (aclidinium)</th>
<th>Yupelri (revefenacin)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FEV\textsubscript{1}</strong> increase *</td>
<td>115mL (76 – 155)</td>
<td>96mL (59 – 133)</td>
<td>100mL (90 – 120)</td>
<td>128mL (80 – 160)</td>
<td>146mL (104 – 189)</td>
</tr>
<tr>
<td><strong>Exacerbation data</strong></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Some</td>
</tr>
<tr>
<td><strong>Duration of action</strong></td>
<td>24 hours</td>
<td>12 hours</td>
<td>24 hours</td>
<td>12 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td><strong>Dosage form</strong></td>
<td>Dry powder inhaler</td>
<td>Nebulizer</td>
<td>Dry powder/Soft mist inhaler</td>
<td>Dry Powder/Meter dosed inhaler</td>
<td>Nebulizer</td>
</tr>
<tr>
<td><strong>Peak inspiratory flow rate (PIFR) requirement</strong></td>
<td>60 L/min optimal, 30 L/min required</td>
<td>None</td>
<td>Lower is better (SMI)</td>
<td>60 L/min optimal, 30 L/min required</td>
<td>None</td>
</tr>
</tbody>
</table>

*FEV\textsubscript{1} data comes from clinical trial data with different inclusion/exclusion and patient characteristics*
## Cost Comparison

<table>
<thead>
<tr>
<th></th>
<th>Incruse (umeclidinium)</th>
<th>Lonhala Magnair (glycopyrrolate)</th>
<th>Spiriva (tiotropium)</th>
<th>Tudorza Pressair (aclidinium)</th>
<th>Yupelri (revefenacin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost/month (AWP)</td>
<td>$400.54</td>
<td>$1359.36</td>
<td>$515.36</td>
<td>$422.10</td>
<td>$1236</td>
</tr>
</tbody>
</table>
References


Drug Induced Edema
Drug Induced Edema

• Usually develops gradually and is bilateral (in the absence of vascular disease)
• Usually completely resolves in a few days upon D/C
• Drugs commonly associated with edema
  – TZD’s (pioglitazone, rosiglitazone) *(sodium/water reabsorption, increased capillary permeability)*
  – Dihydropyridine calcium channel blockers (nifedipine, amlodipine, felodipine..) *(precapillary hydrostatic pressure)*
  – Direct vasodilators (eg. hydralazine, minoxidil) *(compensatory sodium reabsorption)*
  – NSAIDs/corticosteroids *(sodium reabsorption, decreased GFR)*
Drug Induced Edema

• TZD induced edema
  – Common, limiting A/E of these drugs
    • 7% - 10% incidence (mono-tx), 15% with insulin
    • Increases blood plasma volume ~7%
      – Reduced hematocrit often seen, surrogate for TZD-induced plasma volume expansion
    • Resistant to loop diuretics
  – MOA
    • RENAL: TZD’s appear to directly influence (increase) tubular fluid and sodium reabsorption
    • VASCULAR: PPARγ is expressed in vascular smooth muscle and is involved in capillary permeability. TZD therapy leads to extravasation of fluid, contributing to edema.
Drug Induced Edema

• TZD induced edema – treatment
  – Loop diuretics are ineffective
  – Thiazides and spironolactone both effectively reduce fluid retention and weight gain
  – Interestingly, concurrent therapy with fenofibrate, a PPAR-α agonist, resulted in no rosiglitazone associated edema (combos are in clinical trials)
Clicker Question

Which calcium channel blocker is more commonly associated with edema?

A) verapamil
B) diltiazem
C) amlodipine
D) none of these causes edema
Clicker Question

• Peripheral edema caused by a calcium channel blocker can be significantly reduced by concomitant therapy with a

A) beta blocker
B) ACE inhibitor
C) thiazide diuretic
D) alpha-1 antagonist
Calcium channel blocker (CCB)-related edema is quite common in clinical practice and can effectively deter a clinician from continued prescription of these drugs. Its etiology relates to a decrease in arteriolar resistance that goes unmatched in the venous circulation.

Effect of Renin-Angiotensin System Blockade on Calcium Channel Blocker-Associated Peripheral Edema

Harikrishna Makani, MD, a Sripal Bangalore, MD, MHA, b Jorge Romero, MD, a Omar Wever-Pinzon, MD, a Franz H. Messerli, MD a

a St Luke’s Roosevelt Hospital, Columbia University College of Physicians and Surgeons, New York, NY; b New York University School of Medicine, New York, NY.
Calcium Channel Blocker edema

- CCB’s are intrinsically natriuretic, so edema is not related to sodium retention
- MOA: preferential precapillary (arteriolar) dilation, without dilation in the venous (post capillary) circulation
  - This leads to increased precapillary pressure that literally forces fluid from the intravascular compartment to the interstitium
    - If this overwhelms lymphatic capacity, edema develops
Calcium Channel Blocker edema

• MOA of CCB edema continued
  – In addition, the potent vasodilation of NDHP CCB’s can lead to activation of the RAAS, and increased AT-II levels can cause vasoconstriction, exacerbating the edema

• Peripheral edema associated with CCB’s can sometimes be identified by a non-blanching petechial rash, RBC leakage from capillaries. Can cause a long lasting discoloration
Calcium Channel Blocker edema

- **Incidence**
  - Depends on CCB used, dose, and patient characteristics
  - Reported to range from 5% to as high as 70%
  - Occurs more frequently with DHP CCB’s
Calcium Channel Blocker edema

• Prevention/treatment of CCB edema
  – Usually resolves upon switching to NDHP CCB
  – Some evidence that PM dosing can reduce edema
  – Thiazides are somewhat effective, but as not sodium related, this is not recommended as routine therapy
  – Add venodilating drug therapy
    • ACEI and ARBs are very effective at reducing/preventing CCB edema
    • 3 reasons:
      – equalizes hydrostatic pressure by relieving post capillary resistance
      – Allows for lower CCB dose
      – Attenuates the RAAS activation caused by CCB therapy
Effect of Renin-Angiotensin System Blockade on Calcium Channel Blocker-Associated Peripheral Edema

Hartkrisna Makani, MD, a Sripal Bangalore, MD, MHA, b Jorge Romero, MD, a Omar Wever-Pinzon, MD, a 
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a St Luke’s Roosevelt Hospital, Columbia University College of Physicians and Surgeons, New York, NY; b New York University School of Medicine, New York, NY.

— This Cochrane meta-analysis reported a 54% lower incidence of edema with DHP CCB/ACEI combination vs. DHP CCB alone

— ARB’s were somewhat less effective, and DRI tx showed a trend toward efficacy but wasn’t significant

— Combination with CCB and ACEI or ARB revealed a 62% increase in CCB med adherence
A prodrug...

A) Is a particularly effective drug

B) Is a drug that is not active in its administered form

C) Is a professional drug

D) Is a drug undergoing FDA evaluation
Apadaz!

- Benzhydrocodone/apap tablets
  - Mfg: KemPharm, Coralville, Iowa
  - Immed. Release, 4.08mg/325mg, 6.12mg/325mg, and 8.16/325mg
  - The 6.12mg dose is roughly equivalent to 7.5mg of hydrocodone bitartrate
- Approved Feb., 2018
- Benzhydrocodone is a prodrug, intended to be an abuse deterrent opioid
  - As a prodrug, benzhydrocodone has no opioid activity in its ingested form, and must be converted to active hydrocodone via intestinal enzymes
- Utilizes KemPharm’s proprietary LAT tech (ligand activated therapy)
Apadaz!

• Indication
  – Short term (14 days) treatment of acute pain requiring an opioid

• Human Abuse Potential Study - oral
  – N=71 recreational opioid users (ROU’s) entered a randomized, DB, placebo controlled crossover study. 62 completed.
  – Apadaz 6.12/apap tabs were compared to equimolar hydrocodone bitartrate (HB)/apap tabs, and placebo.
    • Visual analog scale (VAS) scores for drug-liking showed no difference between oral administration of Apadaz vs. HB/apap
Apadaz!

• Human Abuse Potential Study - intranasal
  – An intranasal abuse study was also performed vs. HB/apap, n=46 ROU’s.
  – Hydrocodone Cmax was 11% lower for intranasal Apadaz vs. HB/apap
    • Early cumulative hydrocodone exposure was reduced by 50% at 0.5 hour, 29% at 1 hour, and 15% by 2 hours
    • Drug liking VAS scores were lower for Apadaz up to 2 hours post dose
    • Peak drug liking VAS scores were not statistically different
    • Nasal irritation was more frequent with Apadaz
  – Summary findings by the manufacturer: The abuse potential studies do not support a finding that Apadaz can be expected to deter abuse either by the oral or intranasal route
Apadaz!

• Cost
  – AWP for 6.12/325 tab: $1.54
  – Actual pharmacy cost might be closer to $0.58 per tab
  – Generic Vicodin is about $0.17 per tab
  – So, a bottle of about #60 costs about $24 more
  – Dr. Mohler’s take:
    • If you are a physician who has always had a “thing” for pro-drugs and want to prescribe (per KemPharm) a “differentiated product,” Apadaz is the drug for you.
  – Apadaz!
Clicker Question

• When was the last time you encountered a prescription for a version of Magic Mouthwash?
  A. In 2019
  B. Within the last year
  C. Within the last 2-3 years
  D. I cannot remember
  E. What year is it?
Magic Mouthwash
Magic Mouthwash

• Prescriber letter outlines 11 different recipes:
  – Duke Magic mouthwash – Koolstat - Mile’s Solution - Mary’s mouthwash – Pink Lady

• 14 different ingredients that may be used depending on the recipe/treatment
  – From OTCs to doxepin or morphine

• 1 compounding kit currently available
  – First-Mouthwash BLM
Magic Mouthwash

• General directions are to swish and spit/swallow
  – Should be swished for 1-2 minutes to ensure appropriate coating of the mouth
  – Patients should avoid eating/drinking for 30 minutes after use
  – Dosed every 4 to 6 hours

• No data that supports it is any better than a salt/baking soda rinse
Magic Mouthwash

• First-Mouthwash is about $35
  – Generally not covered by Medicaid
• Common ingredients are OTC and therefore often not covered
  – Diphenhydramine
  – Maalox
• Script to be compounded must contain:
  – Sig (spit or swallow)
  – Specific ingredients
  – Ratio or amounts of each ingredient
  – Total volume
• Depending on the formulation, the beyond use date (BUD) is 14 or 28 days
Clicker Question

• What drugs would you use or are likely to see a “use as directed or UD” sig?
  A. Pre-packaged drug (e.g. Z-pak)
  B. Insulin
  C. Warfarin
  D. All of the above
  E. Insurance won’t let me use them anymore
# Most Common Medications Prescribed with “Use as Directed”

<table>
<thead>
<tr>
<th>Medication/Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-PAK</td>
</tr>
<tr>
<td>Warfarin</td>
</tr>
<tr>
<td>Topical medications (e.g. halobetasol)</td>
</tr>
<tr>
<td>As-needed emergency medications (e.g. Diastat/EpiPen)</td>
</tr>
<tr>
<td>Contraceptives</td>
</tr>
<tr>
<td>One-time treatments (e.g. permethrin)</td>
</tr>
<tr>
<td>Insulin</td>
</tr>
<tr>
<td>Migraine medications</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
</tr>
<tr>
<td>Prednisone</td>
</tr>
<tr>
<td>Common Abbreviation</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>U</td>
</tr>
<tr>
<td>μg</td>
</tr>
<tr>
<td>HS</td>
</tr>
<tr>
<td>hs (hour of sleep)</td>
</tr>
<tr>
<td>cc</td>
</tr>
<tr>
<td>AU, AS, AD/OU,OS,OD</td>
</tr>
</tbody>
</table>
NCC MERP Recommendations

• Prescription orders should include a brief notation of purpose
  – For kidney protection
  – For anxiety
• Include patient-reported age/weight
  – Most common error in dosage result in pediatric and geriatric populations
• Add leading zero (e.g. 0.5mg)
• Do NOT use trailing/terminal zero (e.g. 5.0mg)

https://www.nccmerp.org/recommendations-enhance-accuracy-prescription-writing
Uloric ® (febuxostat)
FDA Issues black box warning

FULL PRESCRIBING INFORMATION

WARNING: CARDIOVASCULAR DEATH

Gout patients with established cardiovascular (CV) disease treated with ULORIC had a higher rate of CV death compared to those treated with allopurinol in a CV outcomes study [see Warnings and Precautions (5.1)].

Consider the risks and benefits of ULORIC when deciding to prescribe or continue patients on ULORIC. ULORIC should only be used in patients who have an inadequate response to a maximally titrated dose of allopurinol, who are intolerant to allopurinol, or for whom treatment with allopurinol is not advisable [see Indications and Usage (1)].

1 INDICATIONS AND USAGE

ULORIC is a xanthine oxidase (XO) inhibitor indicated for the chronic management of hyperuricemia in adult patients with gout who have an inadequate response to a maximally titrated dose of allopurinol, who are intolerant to allopurinol, or for whom treatment with allopurinol is not advisable.
Uloric ® (febuxostat)
Febuxostat history. Early warnings, later problems.

• Approved Feb. 13, 2009.
• Indication: As a xanthine oxidase inhibitor for treatment of hyperuricemia in patients with gout. (Not for asymptomatic hyperuricemia)
• Recommended as 2nd-line therapy by ACR and EULAR 2016 guidelines in hyperuricemia not responding to allopurinol.
• Off-patent in 2020, $545 million U.S. sales 2016

Initial studies which were included in the approval package to the FDA included the observation that in doses of 80 mg, compared to allopurinol, febuxostat treatment resulted in an ~40% increased risk of cardiovascular death, non-fatal MI, or non-fatal stroke.

Further studies performed within 6 years of approval date on CV risk were mandated of Takeda Pharmaceutical by the FDA.
Who CARES?
FDA Issues a black box warning.

- Cardiovascular Safety of Febuxostat and Allopurinol in Patients With Gout and Cardiovascular Morbidities (CARES) trial as mandated by the FDA, published in March 2018, NEJM
- High drop out rate in both treatment (56%) and follow up (45%)
- Those in the febuxostat group had higher all-cause and cardiovascular mortality compared with those in the allopurinol group (HR for death from any cause, 1.22; 95% CI, 1.01 - 1.47; HR for cardiovascular death, 1.34; 95% CI, 1.03 - 1.73).

- FDA issued a warning in November, 2017 regarding the concern and then in August, 2018 that a review of CARES will ensue.
- The CARES study showed that febuxostat was not inferior to allopurinol therapy and resulted in similar rates of cardiovascular events, HOWEVER, the rates of cardiovascular deaths AND deaths from any cause combined were elevated in the febuxostat patients.

Cardiovascular Safety of Febuxostat or Allopurinol in Patients with Gout
Who CARES? FDA Issues a black box warning.

- February, 2019, FDA issues continued approval of febuxostat but requires a BBW related to the CARES findings.

**Bottom line:**
- Patients with increased cardiovascular risk should avoid febuxostat if possible.
- Compared to allopurinol, in 1000 treated patients over 1 year, the risk of CV disease deaths increased from 10 to 15 and deaths from any cause from 22 to 26.

Asymptomatic Hyperuricemia- What’s the risk?

- Associated with increased risk of CVD. Metadata analysis showed that allopurinol reduced risk by 1/3 in T2DM patients with gout.
- Associated with worsening prognosis in CKD but currently not an accepted goal.
- Known to cause nephrolithiasis and co-segregates with conditions such as diabetic neuropathy, NAFLD.
- Lifestyle interventions such as exercise, weight reduction, low consumption of purine-rich meat, or avoiding high fructose intake are recommended for all hyperuricemic patients.
- Low-purine diets do not reduce uric acid levels in all patients with hyperuricemia.
- Allopurinol: inexpensive, well tolerated, monitoring recommended.
- Lowering serum uric acid below 4 mg/dL is not recommended as uric acid represents an estimated 40-60% antioxidative capacity in serum.
RAAS drugs for HTN

- RAAS
  - Renin angiotensin aldosterone system
  - Signaling pathway responsible for regulating BP
RAAS drugs for HTN

• RAAS
  – RAAS drugs
    • ACE inhibitors
    • ARBs
    • DRI’s (direct renin inhibitors)
    • Beta blockers (inhibit renin release from renal cortex)
RAAS drugs for HTN

• JNC 8, ASH 2014, and ACC/AHA 2017 recommend non-RAAS drugs for the initial treatment of uncomplicated HTN in African ancestry population. Why?
  – Low plasma renin level leads to suboptimal antihypertensive response
  – Data are voluminous and consistent that ACEI, ARBs, and BB are less effective as monotherapy than thiazides and CCB among black patients with HTN
• However, efficacy becomes noticeably similar in combination with CCB and possible thiazides
in prevention of stroke. For black patients, ACE inhibitors were also notably less effective than CCBs in preventing HF\textsuperscript{8.1.6-8} and in the prevention of stroke\textsuperscript{8.1.6-9} (see Section 10.1). ARBs may be

1. In blacks, thiazide diuretics or CCBs are more effective in lowering BP than are RAS inhibitors or beta blockers and more effective in reducing CVD events than are RAS inhibitors or alpha blockers. RAS inhibitors are recommended in black patients with hypertension, DM, and nephropathy, but they offer no advantage over diuretics or CCBs in hypertensive patients with DM without nephropathy or HF.
RAAS drugs for HTN

<table>
<thead>
<tr>
<th>Drug category</th>
<th>European ancestry</th>
<th>African ancestry</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium blockers</td>
<td>15.3/12.6</td>
<td>16.9/13.3</td>
<td>2.4/0.6</td>
</tr>
<tr>
<td></td>
<td>(14.7, 15.9)/(12.3, 12.9)</td>
<td>(16.0, 17.7)/(12.9, 13.8)</td>
<td>(3.4, 1.3)/(1.2, 0.0)</td>
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<tr>
<td>Diuretics</td>
<td>11.5/9.1</td>
<td>15.0/10.7</td>
<td>3.5/1.5</td>
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<tr>
<td></td>
<td>(9.5, 13.4)/(8.1, 10.1)</td>
<td>(13.1, 17.0)/(9.5, 11.9)</td>
<td>(6.4, 0.5)/(3.1, −0.1)</td>
</tr>
<tr>
<td>ACE-i</td>
<td>12.8/11.4</td>
<td>8.5/8.0</td>
<td>−4.6/−3.0</td>
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<tr>
<td></td>
<td>(11.7, 13.9)/(10.8, 12.0)</td>
<td>(7.0, 9.9)/(7.1, 8.9)</td>
<td>(−2.7, −6.5)/(−1.9, −4.1)</td>
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<tr>
<td>β-Blockers</td>
<td>11.7/11.3</td>
<td>5.9/9.5</td>
<td>−6.0/−2.9</td>
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<tr>
<td></td>
<td>(10.2, 13.3)/(10.5, 12.1)</td>
<td>(4.2, 7.6)/(8.5, 10.4)</td>
<td>(−3.6, −8.3)/(−1.6, −4.2)</td>
</tr>
</tbody>
</table>

Brewster L, et al. BMC Medicine, 2013 May 30
RAAS drugs for HTN

Why do hypertensive patients of African ancestry respond better to calcium blockers and diuretics than to ACE inhibitors and β-adrenergic blockers? A systematic review

Published online 2013 May 30.

β-adrenergic blockers

Clinical efficacy The efficacy of systolic blood pressure lowering of β-adrenergic blockade as monotherapy in uncomplicated essential hypertension is not significantly different from placebo in patients of African ancestry, and some trials report significant placebo corrected increase in blood pressure with β-adrenergic blockade in this population group [3,92] The main side effects are metabolic, including higher glucose levels [3].


RAAS drugs for HTN

• Ojji, D.B., et. al. Comparison of Dual Therapies for Lowering Blood Pressure in Black Africans - CREOLE study, NEJM, March 2019
• Randomized, single blinded, 3 group trial in 6 countries of sub-Saharan Africa
• 728 black patients with uncontrolled HTN randomized to 5mg amlodipine/HCTZ, OR 5mg amlodipine/4mg perindopril, OR 4mg perindopril/HCTZ
  For 2 months
• Doses were doubled, then continued 4 more months
• 1° outcome was 24-hour SBP baseline vs. 6 months
• Results: best BP lowering was with amlo/HCTZ or amlo/perindopril (3 to 4mmHg better than perindopril/HCTZ)
RAAS drugs for HTN

• ACEI related angioedema (3X) and cough are considerably more prominent in the black population

• Compelling indications:
  – There is good evidence for ACEI/ARB’s in affording renal protection in diabetes in black patients
  – According to ACC/AHA guidelines, ACE inhibitors have been found to be notably less effective than CCB’s in preventing HF and stroke in the black population, in various clinical trials (including ALLHAT)
    • However, ACEI/ARBs are clearly indicated in this conditions, and should be provided (in combination) first line
Vet Shopping

• A niche for Angie’s List? Not likely.
• This type of vet shopping is intended to find one that will prescribe opioids without asking too many questions
• Opioid seekers will divert tramadol and other opioids prescribed for their pet
• Reports are surfacing of pet owners intentionally injuring their pets in order to get opioids or benzos
• Prescriber’s Letter describes a case of a pet owner that trained his dog to cough on cue, in order to obtain narcotic cough syrup
Vet Shopping

• Some states require the vet or the dispensing pharmacy to report the opioid to the PDMP
  – In CO?
  – If this is the case, checking the PDMP for “canine” or “DVM” Rx’s might shed some light on potential abuse
  – If you suspect a patient is misusing opioids, you might want to reach out to the vet, if you have a name, to share concerns