Windsor-Essex Cardiac Wellness Centre

The Path to a Better Heart: Medication

Objectives:
To learn more about the medications that you may be taking
To learn what these drugs do in the body and how this helps you maintain health
To learn why you may be taking so many medications

Goals of Therapy:
To add years to your life
To add quality to those years

Medication achieves this by:
Preventing clot formation
Supplying more blood and oxygen to the heart muscle
Decreasing the workload on the heart
Decreasing plaque buildup in blood vessels

Cardiac Risk Factors: 2 types
Those you **CAN** change: smoking, weight, lifestyle (exercise, diet), blood pressure, cholesterol, diabetes, stress
Those you **CANNOT** change: family history (first degree relative F<65, M< 55), age, sex

Classes of Cardiac Medications

Antiplatelet/anticoagulants	↓ tendency for blood to clot
ACE inhibitors and angiotensin receptor blockers	↓ blood pressure, protect heart & kidney
Beta blockers	↓ heart rate, ↑ oxygen supply, ↓ bp
Diuretics	↓ excess fluid, ↓ blood pressure (bp)
Calcium channel blockers	↓ heart rate, ↑ oxygen supply, ↓ bp
Cholesterol-lowering medications	↓ fatty deposits in blood vessels
Nitroglycerin	↑ oxygen supply to heart to ↓ chest pain

A word about…..side effects
Effects we want= therapy
Effects we don't want = side effects
With many drugs, it is difficult to tell which one is causing the side effect!

THE GOOD NEWS
Most people experience few (if any) unwanted effects
Most unwanted effects disappear within 1 to 2 weeks of starting medication, while beneficial effects of the medication remains.

Many side effects can be managed quite easily
If a side effect is bothersome:
Don't suffer in silence!
Often we can switch to another drug in the same class and get rid of the unwanted effect.
Alternatively we can achieve the same goal with a drug from another class.

Antiplatelet Medications
aspirin (acetylsalicylic acid, ASA)
clopidogrel (Plavix)

How do ASA and clopidogrel work?
Platelets are cells in your blood that help to form clots. Antiplatelet drugs stop platelets from sticking together.
Sticky platelets = clot
Clots = heart attacks, strokes, chest pain (angina)

Benefits:
Decrease risk of first and second heart attacks
Decrease risk of stroke by 13-28% after a heart attack

Watch for:
Main side effect is increased MINOR bleeding like bruising. Stomach upset may also occur. Still safe alone or in combination with each other (eg ASA + clopidogrel)

Anticoagulants
Warfarin (Coumadin)

How does warfarin work?
Warfarin prevents blood clots from forming in your body by decreasing your clotting factors and increasing the time that it would normally take for your blood to clot. It is commonly called a blood thinner but warfarin does not really thin the blood.

Benefit:
Decreases the risk of stroke in atrial fibrillation (risk = 1-20% annually)

Watch for:
A lot of bruising
Signs of bleeding which is the most common side effect
Red or dark coloured urine or black tarry stool
Vomited blood that looks like coffee grounds
Severe nosebleeds

INR blood testing with warfarin
An INR is a blood test that your physician uses to monitor your warfarin therapy.
You doctor will decide how often you will need this blood test.
Your warfarin dose may change depending on the results of this blood test
Certain medications can affect your INR level (especially antibiotics). You will need more frequent testing and dosage adjustments when starting and/or stopping these medications.
Be careful with big changes in your diet with warfarin
Blood loss risk is increased by alcohol use
Avoid other products containing aspirin or anti-inflammatory drugs (eg for arthritis) unless recommended by your doctor.

ACE Inhibitors
(Angiotensin Converting Enzyme Inhibitors)
captopril (Capoten)
cilazapril (Inhibace)
enalapril (Vasotec)
fosinopril (Monopril)
lisinopril (Zestril/Prinivil)
perindopril (Coversyl)
quinapril (Accupril)
ramipril (Altace)

ARBs
(Angiotensin Receptor Blockers)
candesartan (Atacand)
irbesartan (Avapro)
losartan (Cozaar)
telmisartan (Micardis)
valsartan (Diovan)

How do ACE inhibitors and ARBs work?
They block the production of a chemical called angiotensin that is a powerful constrictor of blood vessels.

Benefits of ACE inhibitors
Lowers blood pressure
Decreases risk of 2nd heart attack and /or death
Saves kidney function
Prevents heart failure after a heart attack

Benefits of ARBs
Lowers blood pressure
Can be used instead of an ACE inhibitor
Saves kidney function
Prevents heart failure after a heart attack

Watch for:
Rash→ try a different ACE inhibitor
Cough (5-15%) →try another ACE inhibitor or switch to an ARB
Dizziness/lightheadedness due to lowering blood pressure
Doctors will check your kidney function and potassium level – report muscle cramps/weakness

Beta blockers
acebutolol (Sectral, Monitan)
atenolol (Tenormin)
bisoprolol (Monocor)
carvedilol (Coreg)
metoprolol (Lopresor)
nadolol (Corgard)
pindolol (Visken)
propranolol (Inderal)
sotalol (Sotacor)

Benefits:
Slowed heart rate decreases workload and lowers oxygen demand on the heart
Protects the remaining heart muscle after a heart attack
Prevents abnormal heart rhythms after a heart attack (metoprolol, atenolol, sotalol)
Slows progression of heart failure (metoprolol, bisoprolol, carvedilol)

Watch for:
Fatigue and decreased exercise intolerance
Dizziness/lightheadedness from decreased blood pressure
Depression (may due to heart attack also)
Impotence in men → physician can change to a different beta blocker

DO NOT SUDDENLY STOP TAKING THIS MEDICATION ON YOUR OWN.
Stopping the medication could lead to the development of lethal heart beat irregularities.

Diuretics ("water pills")
furosemide (Lasix)
hydrochlorothiazide (HCT) (HydroDiuril), +amiloride (Moduret), + triamterene (Dyazide)
indapamide (Lozide)
metolazone (Zaroxolyn)
spironolactone (Aldactone), + HCT (Aldactazide)

Benefits:
Remove excess water and salt from the body by increasing urine production
Can lower blood pressure and control swelling of legs
Decreases symptoms of shortness of breath in patients with heart failure
Spironolactone decreases risk of death from heart failure

Watch for:
Dehydration – decreased urine output, fatigue or confusion, thirst, dry mucous membranes
Potassium or magnesium loss may require supplementation by your physician. Report any signs of muscle weakness, cramping or leg discomfort as these are signs of too little potassium. You may be directed to eat a banana or drink some orange juice while on diuretics to prevent potassium depletion.
Amiloride, triamterene or spironolactone may increase the potassium in your body. This is more likely if you are also on ACE inhibitors. Symptoms of too much potassium include nausea and irregular heart beats. Avoid salt substitutes.
For heart failure, check your weight daily.

Calcium Channel blockers
amlodipine (Norvasc)
felodipine (Plendil/Renedil)
nifedipine (Adalat XL)
diltiazem (Cardizem, Tiazac)
verapamil (Isoptin, Chronovera)

Benefits:
Amlodipine/felodipine/nifedipine
Decreased blood pressure
Relaxes blood vessels to decrease resistance
Helps to decrease chest pain
May be used in heart failure

Diltiazem & verampamil
Slows heart rate and relaxes blood vessels to decrease resistance
Helps to decrease chest pain
Used for heart beat irregularities
Should be used cautiously in heart failure

Watch for:
Dizziness/lightheadedness
Fatigue
Calf and lowering leg swelling (amlodipine)
Constipation (verapamil)

Cholesterol-lowering medications

Statins
atorvastatin (Lipitor)
fluvastatin (Lescol)
lovastatin (Mevacor)
pravastatin (Pravachol)
rosuvastatin (Crestor)
simvastatin (Zocor)

Fibrates
bezafibrate (Bezalip)
fenofibrate (Lipidil)
gemfibrozil (Lopid)

Cholesterol Absorption Inhibitors
Ezetimibe (Ezetrol)

Bile acid sequestrants
Cholestyramine (Questran)

Niacin (Niaspan)

Benefits:

Statins
Prevent 2nd heart attack and decrease death from all causes after a heart attack
Best for lowering the bad LDL cholesterol

Fibrates
Lower triglycerides and increase good HDL cholesterol
Used alone for high triglycerides or with statins for a combination effect on lipids

Cholesterol Absorption Inhibitors
Decreases the amount of cholesterol absorption from the small intestine
Used alone but mostly with statins for a combination effect on lipids

Bile Acid Sequestrants
Lowers bad LDL cholesterol
Can be used when patients cannot take other agents

Niacin
Dosed in higher dose that what is in multivitamins
Make sure that you are taking Niaspan (extended release product) and not just any niacin.

Watch for:
Stomach upset, bloating, constipation
Severe muscle pain must be reported to your doctor immediately. This could be a sign of muscle cell breakdown that can cause kidney damage. This is reversible if caught early.
Liver damage is rare. Blood tests for cholesterol levels should include liver function tests to watch for this. Symptoms include yellowing of skin and eyes and/or dark coloured urine.

So…I am on cholesterol medication. Therefore I can eat whatever I want!.....WRONG!
Diet is still responsible for increasing cholesterol
Diet and exercise work better than medication to increase good HDL cholesterol

What is your target for your bad cholesterol?
LDL < 2 or >50% ↓ in LDL

Nitroglycerin
Transdermal patch (Minitran, NitroDur)
Sublingual spray (Nitrolingual)
Sublingual tablet (Nitrostat)
Isosorbide dinitrate (Isordil) long acting tablet
Isosorbide mononitrate (ISMO) long acting tablet

Benefits:
Relaxes blood vessels and increases blood and oxygen supply to the heart
Use only 1 spray under your tongue and then call 911. You may repeat 2 more sprays until the ambulance comes. Do not wait to call 911!
Timing of the medication can be tailored to maximize symptom relief (day vs night)

Watch for:
Headache
Dizziness//lightheadedness so SIT down when using the spray
Flushing of the skin
Tolerance - diminishing effect with constant dosing. Allow a 12 hour free nitroglycerin period
Change the patch site every day to avoid rash
NO VIAGRA, LEVITRA or CIALIS!

MEDICATION TIPS
Learn about the medication you take
Name of drug (generic name and brand name)
Purpose of drug (what is the medication supposed to do?)
Side effects (most common or most severe)
Activity restrictions (driving, alcohol, exercise, diet)
Proper storage

Keep a CURRENT list of all your medications with name, strength and directions
This includes over the counter (non-prescription) medications and herbals.
Make sure to update this list after every doctor visit or hospital stay.
Keep a copy with you in your wallet/purse and at home.
Take your list of medications with you every time you see your doctor.
Note medications stopped and why.

Get all medications filled at **ONE PHARMACY** so the pharmacy has complete information

Herbal medications
Herbal medications are also drugs and can interact with the prescription medications that you take.
Let your doctor and pharmacist know if you are taking herbal medications

Organization
Medication taking requires you to develop the habit of remembering to take it.
Special packages or dosettes to organize your pills can be purchased.
Ask if you are having difficulty. Pharmacists can help.