Calcium Channel Blockers (CCB)

Examples: Dihydropyridine CCBs: Amlodipine (Norvasc), Felodipine (Plendil) Nicardipine (Cardene, Carden SR) Nifedipine (Procardia, Adalat)Nimodipine (Nimotop)Nisoldipine (Sular
Phenylalkylamine CCBs: Verapamil (Calan, Isoptin)
Benzothiazepine CCBs: Diltiazem (Cardizem)

Used To Treat: high blood pressure, hypertrophic cardiomyopathy, diastolic dysfunction

How They Work: First identified in the late 1960s and widely used in the 1980s, calcium channel blockers (also called CCBs or calcium antagonists) are non-habit-forming medications that are used to relax the smooth muscles of the arteries and arterioles as well as the heart muscle, which reduces the workload on the heart and causes a drop in blood pressure. (from heart center on line) They are sometimes used in a condition called "diastolic dysfunction". This is diagnosed when there is a certain amount of stiffening of the heart muscle. By slowing down the heart, these medications allow for a longer filling time and a great opportunity to get a good "push" from the left ventricle.

We generally use the dihydropyridine CCBs to treat chest pain and blood pressure. The phenylalkylamine CCBs are used to remedy some arrythmias in addition to their benefit as an anti-hypertensive. The Benzothiazepine CCBs are generally used to treat hypertension and diastolic dysfunction when taken as an outpatient although they may be used intravenously in an ICU setting to abate acute dysrhythmias.

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Metformin

Examples: Metformin (glucophage or fortamet)

Used To Treat: Insulin Resistance - Diabetes

How They Work: Metformin decreases the hepatic production of glucose and intestinal absorption of glucose. It also improves insulin sensitivity by increasing peripheral glucose uptake and utilization. After eating, the amount of insulin necessary for the appropriate utilization of glucose ingested during the meal will decrease. This, is turn, decreases the usual increase in appetite that can come as a result of very high insulin levels. Further, the utilization of fats will improve.

Side Effects: Diarrhea, nausea and vomiting and not uncommon but usually resolve after the first several weeks of taking the drug.

What is Diabetes?

Diabetes is a disease where the body doesn't make or use the proper amount of insulin. Insulin is a hormone made by the pancreas in the Islets of Langerhans and is necessary for the body to appropriately utilize glucose, our major source of energy. Clinically diabetes takes on an even more serious side because it can exist in a "pre-symptomatic" state for as long as 10 years all the while causing vascular problems that can later cause kidney disease, heart disease and/or stroke.

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Metformin

Diabetes is often genetic. It is thought that the disease becomes "active" after the body reaches a certain state of fattiness. After the body has acquired enough fat, the insulin resistance gene is "turned on" exacerbating and accelerating the process.

If properly managed, diabetes does not have to be "all that bad". But, it does take a lot of patient participation. Diet is important and all efforts should be made to increase the relative amount of protein in the diet and decrease the "simple carbohydrates". Exercise is essential and weight management an overriding concern.

Medications are an essential part of the treatment process in order to minimize insulin resistance, to protect the kidney from further damage, and to protect the patient from heart attack and stroke. Most diabetics are on medications that limit insulin resistance (like actos or avandia), protect the kidneys (an ACE or ARB), and limit the risk of heart attack and stroke (statins).

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Calcium Channel Blockers

Side Effects: These medications slow down the heart rate and may cause fatigue. Most commonly they cause edema or swelling of the lower extremities and constipation.

What is High Blood Pressure or Hypertension?

Blood pressure is a measurement of the pressure inside the blood vessel. The pressure is created by the flow of blood. The top number is called systolic pressure and is a direct reflection of the push that the heart muscle creates with each contraction. The lower number is called the diastolic pressure and reflects the pressure in between beats.

A good blood pressure for an adult is a systolic less than 140 and a diastolic pressure less than 80. In general, the lower the pressure the better, unless, of course you are dizzy. The opposite is also true. The higher your blood pressure, the greater your risk for stroke, heart attack, or kidney disease and the greater the work the heart must perform. The rule of thumb is the lower the better.

When blood pressure is high, you might have a headache, feel dizzy, have chest pain, or have problems with vision. More often then not, high blood pressure causes no symptoms, therefore the name... the silent killer. Long-term hypertension is a major risk factor for atherosclerosis and all the medical problems that result. It is often inherited but can be made worse by poor lifestyle choices.

It follows that you can improve your blood pressure with weight loss, exercise, low salt diets, and by lowering the stress in your life. Blood pressure naturally goes up with age.

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