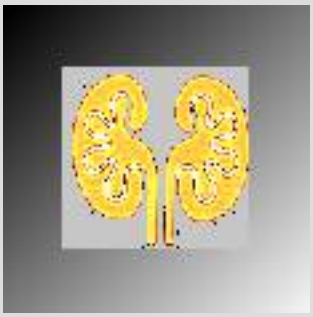

IgA Nephropathy Support Group

Hypertension Notebook

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Medications for hypertension and renal protection

Hypertension (or, high blood pressure) may respond to lifestyle modifications if present early in the course of IgAN. However, because some blood pressure medications are considered renal-protective and reduce the level of proteinuria, in addition to lowering blood pressure, they are sometimes prescribed even before hypertension becomes a problem.

Types of blood pressure medications

- ***Angiotensin converting enzyme inhibitors (ACEI's)***. These medications help to lower proteinuria in addition to lowering blood pressure, and they appear to have a renal-protective effect which may help to slow down progression of IgAN. The exact mechanisms are not known, but it is thought that they lower intraglomerular pressure, which is the actual pressure within the tiny blood vessels that form the glomeruli. Some common ACEI's are *enalapril*, *lisinopril*, *monopril*, *ramipril, accupril*. Since they exert their effect on the renin-angiotensin-system, ACE inhibitors are first line drugs when it comes to kidney disease (including IgAN), and they may be prescribed for their protein-lowering (antiproteinuric) and renal protective effect even if you do not have high blood pressure.

- ***Angiotensin II AT-1 receptor blockers (ARB's)***. First marketed in the mid-1990's, these close cousins

of the ACEI's appear to have similar effects (although because they are more recent, they have not been studied as much). Some ARB's are *losartan*, *valsartan*, *irbesartan*. With the ARB's, there is a lower incidence of the chronic dry cough that many people experience as a side effect of ACE inhibitors, and their side effect profile is less than the ACEI's. As with the ACEI's, ARB's are first line blood pressure medications used in the context of chronic kidney disease. They will often be used when a patient has already failed ACEI's, or they may even be used in combination with ACEI's in some cases.

- ***Calcium channel blockers (CCB's)***. There are two sub-classes of CCB's, namely, the dihydropyridine CCB's (like *nifedipine*, *amlodipine*, *felodipine*), and the non-dihydropyridine CCB's (like *diltiazem* and *verapamil*). Only the non-dihydropyridine CCB's are known to have an antiproteinuric effect (which means they lower proteinuria, like the ACEI's and the ARB's). The dihydropyridine CCB's do not have this effect and they are not considered renal-protective when used alone (at least, not beyond their ability to lower blood pressure). CCB's are often used in combination with an ACEI or an ARB.

- **Other blood pressure meds**. Many IgAN patients need a combination of 2 or more medications in order to keep their blood pressure under control, despite all attempts at lifestyle changes (such as weight loss, exercise, low sodium diet, etc.). A common approach is to start with an ACEI (and if side effects are a problem, move on to an ARB). If that isn't enough on its own, it is common to add a CCB. In addition, other BP meds may be used such as beta blockers (like atenolol, metoprolol, acebutolol), clonidine, hydralazine, methyldopa, minoxidil, doxazosin (and its cousin terazosin), etc. *Loop diuretics* (such as furosemide) are also often used, especially at the point where *volume overload* (too much fluid) becomes a problem and contributes to the hypertension. With mild IgAN, ordinary hydrochlorothiazide type diuretics may be used, but these begin to lose their effectiveness as

renal failure progresses much past 50% kidney function. Since hard-to-control hypertension is so common among kidney patients, nephrologists are usually experts in the use of antihypertensive medications.