

Drugs to Lower Cholesterol:

A Warning for Polio Survivors

Revised from Jan. 1995, Ruth Wyler-Plaut, New Jersey PPSG

Why a History of Polio is Critical

This article is one of several that will discuss drugs which, because of their mechanism of action on the body, should be prescribed with caution to polio survivors and their effects carefully watched over a period of time.

Cholesterol-Lowering Drugs of Concern

Recently there have been several reports of serious musculoskeletal problems in polio survivors receiving the cholesterol-lowering drugs Lopid® (gemfibrozil) and Mevacor® (lovastatin). A review of the 1995 *Physicians Desk Reference* (PDR), which is a listing and description of all drugs available by prescription in the United States, shows that these drugs are members of two of three categories of drugs prescribed for the treatment of hyperlipidemia (elevated cholesterol and/or triglycerides) that can affect skeletal muscles in a small percentage (less than 1%) of patients.

The three categories of drugs with well-known skeletal muscle side effects are:

1. HMG-CoA reductase inhibitors, such as Mevacor® (lovastatin), Zocor® (simvastatin), Lescol® (fluvastatin), and Pravachol® (pravastatin)
2. Fibric acid derivatives, such as Lopid® (gemfibrozil), and Atromid-S® (clofibrate)
3. Niacin at very high doses (1 gram or higher a day). Niacin, also known as nicotinic acid, is prescribed under the names Nicolar® and Nicobid®.

You'll note each drug has at least two names: a trade name (the name capitalized and shown with the ® symbol), and a generic name (the name in parentheses). Either name may be used in talking about the drug.

What Are Their Skeletal Muscle Effects?

The muscle symptoms of these drugs are very similar to those of the post-polio syndrome (PPS), and as a result in several polio survivors have been attributed to a flare-up of PPS rather than to an adverse drug effect. The adverse symptoms are fatigue, myalgia (muscle pain), tenderness of muscle to touch, myositis (inflammation of muscle), and muscle weakness, at times immobilizing patients.

These symptoms are an early warning of the most serious effect - rhabdomyolysis, a term used to describe disintegration or dissolution of muscle. Besides greatly weakening muscles, if rhabdomyolysis goes unchecked it can cause kidney failure and possibly death. Sudden, severe rhabdomyolysis has been seen as early as a few weeks after starting drug treatment, but it may not be seen for several months or even a year or more.

Fortunately, it is possible to separate the drug effects from symptoms of PPS. Good medical practice requires periodic laboratory tests for any patient using these drugs. Tests showing very high levels of creatine kinase (CK) and elevated liver enzymes in the blood, and possibly of myoglobin (an oxygen-transporting pigment in muscles) in the urine, are positive evidence of both the presence and

degree of muscle damage.

As stated, less than one percent of all patients given these drugs have any type of muscle problems, and those who get rhabdomyolysis are even fewer, probably because treatment is usually stopped before the muscle effect progresses that far. There is no information to indicate that polio survivors are more likely to experience these effects.

In cases of rhabdomyolysis, normal muscle function returns for the average patient within 3 months to a year or more after stopping treatment with these drugs. It is not known to date if polio survivors have the same capacity to rebuild the damaged muscles.

Any patient (including polio survivors) receiving any of the drugs listed above and experiencing muscle pain, tenderness, or weakness or dark urine should report these symptoms immediately to their doctor.

Additional Warnings

The risk of muscle breakdown is much greater in patients when they receive drugs from Category 1 (Mevacor, Zocor, Lescol, Pravachol) in combination with certain other drugs, such as those from Category 2 (Lopid or Atromid-S) or Category 3 (high-dose niacin); the antibiotic erythromycin; immunosuppressive drugs (eg. cyclosporine); or antifungal therapy (eg. itraconazole). The risk of muscle breakdown is also greater in patients with kidney disease or diabetes.

Cholesterol-Lowering Drugs With Less Skeletal Muscle Effect

Several other drugs that are used to treat elevated cholesterol and/or triglyceride levels have shown less evidence (Colestid® and Questran® [both cholestyramine resins]) or no evidence (Lorelco® [probuco]) of an effect on skeletal muscles. Colestid and Questran fall into the category of bile-acid binders. Lorelco works by a mechanism different from any of the other drugs.

Alternate Methods of Lowering Cholesterol

The drugs above are prescribed to treat various types of familial hyperlipidemia, very specific conditions. The "Indications for Use" by all manufacturers note that such methods as eating a diet low in saturated fats and cholesterol, exercise, weight control, control of diabetes, treatment of hypothyroidism (low thyroid levels) and of alcoholism, must be tried before use of these drugs should be considered. Most require a patient to follow a diet low in cholesterol and fat during drug treatment as well.

The Question of Benefit vs Risk in Polio Survivors

There is recent evidence Zocor (simvastatin), combined with diet, improved survival in patients with elevated cholesterol levels and evidence of heart disease. Similar results were observed with cholestyramine resin some years ago.

However, in view of the musculoskeletal side effects described above, polio survivors need to discuss with their doctor the possible risks of using these drugs for control of cholesterol compared to the possible benefits. A history of having had polio can be important in making this decision.

Ruth Wyler-Plaut, the author of this article and a polio survivor, recently retired from Hoffmann-La Roche Inc, where she was Manager of the Medical Writing Department in the Division of Clinical Research.

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Do not discontinue any medication without consulting the prescribing doctor.



Return to PPS Index