

WHAT IS THE FUTURE OF STROKE PREVENTION: POLYPILL OR INDIVIDUALIZED RISK FACTOR MODIFICATION? POLYPILL

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Stroke, together with heart disease, accounts for more than 60% of deaths worldwide. With an increasing elderly segment in the population, one would expect this to continue to be a significant healthcare burden. The risk factors for stroke/vascular diseases are well established and include hypertension, high cholesterol, diabetes, smoking, lack of exercise amongst the major 'treatable' causes. There is clear evidence that appropriate/aggressive treatment of risk factors can lead to a more than 80% decrease in the subsequent risk of stroke and vascular diseases. Treatment of hypertension in most individuals requires two or more medications. If one includes dual antiplatelet therapy and one or possibly two cholesterol lowering medications, it is quite conceivable that an elderly patient, in addition to taking their usual medications for osteoporosis, COPD, rheumatoid arthritis, etc., would end up being on 5-7 additional medications to control the risk factors for vascular diseases.

It is a well known fact that compliance falls significantly with the increasing number of medications taken by a patient. It is also well known that as the population ages, cognitive deficits and increasing health costs can also lead to a decrease in adherence to medical therapy. It is therefore quite appropriate that one consider looking at combination pills. Combination pills are not a new phenomenon. In treatment of hypertension, it is not uncommon to see initiation of therapy with combination pills, especially a combination of diuretics with ACE inhibitors or ERB's. Combination antibiotics are also a common means of tackling complex infectious diseases.

Several years ago, Wald and Law in the U.K. hypothesized that a combination pill that includes one or two antihypertensives and a statin together with an antithrombotic agent may enhance compliance to the medical therapy. They also advocated (lacking evidence) that all individuals over the age of 55, irrespective of previous cardiovascular disease or risk factors, be treated with such a combination pill. A 'polypill', in their opinion, would reduce cardiovascular disease by more than 80%.

Many years later, the 'Indian Polycap Study (TIPS)' randomized over 2000 patients in 50 centres across India to treatment with varying combinations of thiazide (hydrochlorothiazide 12.5 mg), Atenolol (50 mg), Ramipril (5 mg), Simvastatin (20 mg) and aspirin (100 mg). Groups of 200 patients were given these treatments alone or in varying combinations. The investigators were able to show that compliance to the polypill was excellent and the combination resulted in significant decreases in blood pressure and high cholesterol (Lancet 2009: Effects of Polypill on the risk factors in middle aged individuals without cardiovascular disease (TIPS): a phase II double blind randomized trial). Further studies are planned with a larger number of individuals to evaluate for the long term efficacy of such combination therapies.

The advantages of a polypill include a) an increase in compliance to medications, and b) a decrease in cost of the medication, and this may be especially applicable to the elderly who may, in addition to being on multiple medications, may have cognitive deficits that would lead to decreased compliance.