Prevention of Cardiovascular Events in the Elderly:

Advancing age is one of the strongest risk factors for cardiovascular events in our population. Elderly patients with established vascular disease or longstanding type II diabetes are likely to derive the greatest benefit from interventions that aim to reduce the global cardiovascular risk. However many risk factors associated with cardiovascular disease decline in importance with advancing age. Until recently, clinical trials have not addressed risk factor control in the elderly either with or without established vascular disease. Evidence is now increasing to indicate that global vascular risk reduction is beneficial in the older population.

GERIOVASCULAR PREVENTION may be defined as the prevention of all first and recurrent cardiovascular events in the elderly. This includes prevention of fatal and non-fatal stroke, fatal and non fatal ST elevation (STEMI) and non-ST elevation myocardial infarction (NSTEMI) , transient ischaemic attack (TIA), reversible ischaemic neurologic deficit(RIND), acute coronary syndrome(ACS) and prevention of the need for revascularization: carotid endarterectomy or percutaneous intervention (PCI), coronary PCI or coronary bypass surgery and peripheral vascular surgery for occlusive disease and aortic aneurysms, and related hospitalizations and morbidity. Whereas in primary prevention of coronary heart disease (CHD) in the elderly, many risk factors decline in importance with advancing age, in the secondary prevention population i.e. those with established vascular disease, be it cerebrovascular, coronary or peripheral vascular disease, or longstanding type II diabetes, the attributable risk of various co-morbidities remains significant. Global cardiovascular risk assessment must necessarily give way to

global "**GERIOVASCULAR**" risk interventions in these high-risk populations targeting global cardiovascular risk reduction to yield the greatest benefits in terms of event and mortality reduction.

The goals of cardiovascular prevention in the elderly are not only to prevent morbidity and mortality but to preserve function and prevent frailty, to keep the well elderly well and to prevent the frail elderly from deteriorating and in so doing improve quality of life. In essence the goal is to postpone and compress the period of cardiovascular morbidity as much as possible to minimize disability. In order to accomplish this, we must more effectively and consistently prevent and treat diabetes, stroke and heart disease in the elderly.

Table 1 Potential cumulative impact of four simple secondary-prevention treatments

	Relative-risk reduction	2-year event rate
None	~	8%
Aspirin	25%	6%
ß-blockers	25%	4·5%
Lipid lowering (by 1·5 mmol)	30%	3·0%
ACE inhibitors	25%	2·3%
Cumulative relative risk reduction if all four drugs are used is about 75%		

Events=cardiovascular death, myocardial infarction, or strokes. To calculate cumulative risk-reduction, multiplicative scale was used--e.g. two interventions each reducing the risk of event by 30% would be expected to have about 50% relative risk-reduction [1-(0·70x0·70)]. No interactions in treatment effects are observed in trials suggesting that proportionate risk-reduction of specific drug in presence or absence of other effective interventions would be expected to be similar. Smoking cessation lowers risk of recurrent myocardial infarction by about one-half after about 2 years. So, in smoker with vascular disease, quitting smoking and use of four simple preventive strategies could theoretically have large potential benefit (say around 80% relative-risk reduction).

Yusuf, S. Two decades of progress in preventing vascular disease. Lancet *2002; 360***:** 2-3.