

Cardiovascular disease: the leading cause of diabetes related mortality

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Diabetes is an independent risk factor for cardiovascular disease (CVD) including coronary arterial disease, stroke, peripheral arterial disease, cardiomyopathy and congestive heart failure in both men and women. Women seem to have an inherent protection against CVD and they seem to lose most of that natural protection, once they develop diabetes. Compared to the patients without diabetes, the patients with diabetes sustain a poorer prognosis with CVD, accounting for two thirds of deaths in diabetes. In Sri Lanka deaths due to cardiovascular diseases are found to be higher than that in most developed countries (1).

The diabetes pandemic is underway and the Asia is at its epicenter. Despite its initial association with the affluent societies, diabetes mellitus is fast becoming a disease of the masses. Global burden of diabetes is rising dramatically, where it is estimated that the prevalence of 387 million in 2013 will grow up to 592 million by year 2035 (2). The Sri Lankan population has not been spared from this malaise and a similar upward trend in prevalence has been observed in local studies. The dramatic rise seen in the prevalence in urban areas deserves special attention and currently stands at a staggering 26.92%. It was noted to increase with age and reached up to 40% in those older than 60 years (3). The prevalence of pre-diabetes was also very high with this study with a figure of 32.34% (3).

Due to the common genetic and patho-physiological background, multiple metabolic and other cardiovascular risk factors get clustered together with diabetes, multiplying the cardiovascular risk in these patients. Paralleling the explosion of diabetes, these coexistent cardiovascular risk factors including hypertension, obesity, physical inactivity and smoking also have reached epidemic proportions. Approximately one fifth of Sri Lankan adults are suffering from hypertension and metabolic syndrome, while same proportion reported to be smokers (3). The guideline on cardiovascular disease in diabetes by Endocrine society of Sri Lanka (ESSL) emphasizes the importance of cardiovascular risk assessment at the time of diagnosis of diabetes and active

risk modification from there. Coronary artery disease (CAD) is the leading killer among all cardiovascular complications, as well, is known to be a silent killer in most instances. Active recognition of CAD and secondary prevention is a major step towards reducing CVD related mortality.

Undoubtedly, it has been proven that the multiple intervention approach to be the best to combat the cardiovascular disease related morbidity and mortality in diabetes. STENO-2 trial, despite its limitations including the smaller sample size, holds the land mark of this aspect (4). Lifestyle modifications stand as the foundation of overall better metabolic and cardiovascular outcome, which includes medical nutritional therapy, increased physical activity, weight loss, and smoking cessation.

There is no controversy regarding the impact of blood pressure control on significantly better macrovascular outcome throughout almost all major clinical trials up to date (5-9).

United Kingdom Prospective Diabetes Study (UKPDS) signifies the importance of early aggressive blood sugar control in type 2 diabetes as a fruitful way forward to future cardiovascular risk reduction (10,11). Encouraging evidence for benefits of glycaemic control in cardiovascular benefits among type 1 diabetes comes from the Diabetes Control and Complication Trial (DCCT) (12). However, a non lenient approach to the glycaemic goals may take off the expected cardiovascular benefits of glycaemic control. Therefore, ESSL recommends more individualized glycaemic targets considering the age, life expectancy, co morbidities and complications.

ESSL recommendations on aggressive statin therapy, despite direct primary cost, would be more cost effective for a developing nation, when the long term benefits are taken into consideration. Although the benefit of aspirin in primary prevention of cardiovascular disease in the patients with diabetes without cardiovascular disease is

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controversial, the place for secondary prevention has been strongly established for decades. Together with the evidence from Anti Thrombotic Trialist (ATT), American Diabetes Association (ADA), the American Heart Association (AHA) and the American College of Cardiology Foundation (ACCF) recommend that low-dose (75-162mg/day) aspirin for primary prevention is reasonable for adults with diabetes with increased CVD risk (10-year risk of CVD events over 10%) and who are not at increased risk for bleeding. Though we have clearly recognized the disproportionately greater cardiovascular risk among Asians, we still struggle for a better unique CVD risk calculator, where more research work is essential as a way forward.

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