Article:
Kain, K (2016) Primary Prevention with Statins or Increased Physical Activity. Journal of the American College of Cardiology, 67 (16). pp. 1973-1974. ISSN 0735-1097

https://doi.org/10.1016/j.jacc.2016.01.064

Letter to the Editor

Primary Prevention with Statins or Increased Physical Activity

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Mortensen *et al* paper 'compares ACC/AHA Risk-Based Approach Versus Trial-Based Approaches for Primary Prevention with Statins (1). Authors acknowledge limitation that only White subjects were studied and therefore the results do not necessarily apply to other ethnicities. This will be the case especially for South Asians (originally from India, Pakistan or Bangladesh).

Statins are potent, specific, competitive inhibitors of microsomal-enzyme 3-hydroxy-3methyl-glutaryl-coenzyme-A-reductase which upregulate low-density-lipoprotein (LDL) receptors and cholesterol uptake. Statins also reduce mRNA and protein expression of GLUT2, limiting glucose uptake, inhibit L-type calcium channels that is required for insulin secretion. Statin-related muscle side effects are common and contribute significantly to rates of non-adherence. High potency statins are associated with a moderate increase in the risk of new onset diabetes.

US Food and Drug Administration has approved the first two PCSK9-inhibiting drugs to lower levels of low-density-lipoprotein-cholesterol (LDL) which is linked to cardiovascular disease. PCSK9-deficient mice have been found to be hypoinsulinemic and glucose-intolerant.

South-Asians have increased rates of ischaemic heart disease and ischaemic stroke and their adverse cardio-metabolic risk profile differs from that of the Europeans. The principle cardiovascular disease risk factor is decreased insulin sensitivity because of decreased activity/ visceral obesity resulting in abnormal glucose status along with increased triglycerides and decreased high-density-lipoprotein-cholesterol. Moreover, mean LDL concentrations are lower in South-Asians compared with Europeans (2). It is well known that South-Asians suffer from increased aches and muscle pains compared to the Europeans (3). Therefore indiscriminate use of statins in South-Asians can worsen their insulin resistance and quality of life e.g. increased aches and pains. Likewise Afro-Caribbean population do not have unfavourable lipid risk profile and have decreased ischaemic heart disease but increased insulin resistance.

Researchers reviewed 305 randomized controlled trials and concluded there were "no statistically detectable differences" between physical-activity and medications for heart disease (4). An acute bout of exercise increases skeletal muscle glucose uptake, while chronic exercise training improves mitochondrial function (5).

Human body machine has many sets of interdependent molecular cogged wheels within cell and inter cellular mechanisms. If one cog ruptures or gets dysfunctional (increased LDL cholesterol) it might be appropriate to fix it with appropriate site/function cog (drug) for secondary prevention. However, is it reasonable to insert extra cog (statin) as a primary preventative measure for generalised rusting (arteriosclerosis or atherosclerosis) when it might have detrimental effects on other cogs or their functions on the same cogwheel or other cogwheels (new-onset-diabetes and aches/pains)?

Conflict of Interest: None

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