YOGIC MANAGEMENT OF CARDIOVASCULAR DISEASES

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INTRODUCTION

• Cardiovascular disease is basically a lifestyle disorder.
• Holistic science of yoga is the best lifestyle ever designed.
• Modern medicine as well as yoga have sound scientific basis and are, therefore, natural allies.
• Yoga has preventive, curative as well as rehabilitative potential.
• This holistic action of yoga can be explained on the basis of its ability to modulate autonomic functions, relieve stress, improve physiological functions including cardio-respiratory fitness and improve quality of life
Research findings

• Comprehensive reviews by Innes et al (2005 & 2007) suggested that yoga reduces cardiovascular risk profile by decreasing activation of sympatho-adrenal system and hypothalamic-pituitary-adrenal axis and also by promoting a feeling of wellbeing along with direct enhancement of parasympathetic activity.

• They also suggested that yoga provides a positive source of social support that may also be one of the factors reducing risk for cardiovascular diseases.

• They reported that all 12 studies reviewed by them suggested that yoga improves lipid profile.
• Yoga lifestyle retards progression / increases regression of coronary atherosclerosis in severe coronary artery disease. It also improves symptomatic status, functional class and risk factor profile (Manchanda et al 2000).

• A short lifestyle modification and stress management education program leads to favorable metabolic effects and reduces risk factors for CV disease and DM (Bijlani et al, 2005).

• A study on yogic practices on lipid profile and body fat composition in patients of CAD reported a reduction of TC, TG and LDL after 6 months (Pal et al 2011).
Possible mechanisms?


• Breathing exercises and relaxation training have beneficial effects in patients with previous myocardial infarction (van Dixhoom1998).

• Shavasan and pranayama is beneficial in patients having premature ventricular complexes and palpitations (Ravindra et al, 2006).

• Improvement of baroreflex sensitivity & attenuation of sympathetic and renin angiotensin activity following Yoga training (Selvamurthy et al, 1998).

• Yoga improves ‘heart friendly’ status of lipid profile in peri and post menopausal DM (Bhavanani et al 2012).
• Damodaran et al (2002) suggested that Yoga can play an important role in risk modification for CV diseases. Decreased BP, drug score and risk factors such as blood glucose, cholesterol and triglycerides. Overall improvement in subjective well being and quality of life with reduced sympathetic activity and oxidant stress.

• Pranayama breathing reduces HR and BP of hypertensive patients within 5 mins (Bhavanani et al, 2011).

• Yoga training blunts exercise-induced increase in HR and BP (Madanmohan et al 2004).
• A systematic review by Yang (2007) of 32 articles published between 1980 and 2007 found that yoga interventions are generally effective in reducing body weight, blood pressure, glucose level & high cholesterol.

• Madanmohan et al (2002) reported that shavasan reduces load on the heart by blunting sympathetic response.

• Udupa et al (2003) reported that Pranayama training decreased basal sympathetic tone, increased basal parasympathetic activity and decreased load on the heart.
• A comprehensive review by Innes and Vincent (2007) found beneficial changes in several risk indices, including glucose tolerance, insulin sensitivity, lipid profile, anthropometric characteristics, blood pressure, oxidative stress, coagulation profiles, sympathetic activation and pulmonary function, as well as improvement in specific clinical outcomes.
• They suggested that yoga may improve risk profiles in adults with non insulin dependent (NIDDM) and may have promise for the prevention and management of cardiovascular complications in this population.
POSTULATED MECHANISMS BY WHICH YOGA REDUCES CARDIOVASCULAR RISK

Yoga intervention: Pathway 2

- Vagal stimulation
  - Parasympathetic activation

Yoga intervention: Pathway 1

- Perceived stress
  - Activation/reactivity of sympathoadrenal system and HPA axis

Enhanced metabolic and psychological profile
- Insulin sensitivity
- Glucose tolerance
- Improved lipid profile
- Visceral adiposity
- Improved mood, sleep

Improved coagulation/fibrinolytic profile
- Oxidative stress
- Endothelial function

Heart rate variability
Baroreflex sensitivity
Inflammatory cytokines
Heart rate, blood pressure

Reduced risk for: Atherosclerosis Hypertension CVD

Source: J Am Board Fam Pract © 2005 American Board of Family Practice
REFERENCES


13. Ravindra PN, Madanmohan, Pavithran P. Effect of pranayam (yoga breathing) and shavasan (relaxation training) on the frequency of benign ventricular ectopics in two patients with palpitations. Int J Cardiol. 2006 22; 108:124-5.


