Perspective

The favourable effects of statins in reducing cardiovascular events are well established and have been shown to be effective irrespective of baseline LDL cholesterol levels. In addition to the pleotropic effects, statins have been well demonstrated to reduce the rate of progression of coronary atheroma and in some studies even regression. The LDL cholesterol has directly been correlated with amount of atherosclerosis burden in coronary arteries. Rosuvastatin has been shown to be more potent and effective than atorvastatin in reducing LDL cholesterol and increasing HDL cholesterol.

The SATURN trial was done to study and establish the effects of high dose statins on progression of coronary atherosclerosis. This trial revealed that both rosuvastatin and atorvastatin in high doses are equally effective in regressing plaque burden (percent atheroma volume) in coronary arteries when used for over 2 years.

The improvement in lipid profile (reducing LDL cholesterol level and increasing HDL cholesterol levels) was seen more with rosuvastatin which may have resulted in significant but modest reduction in total atheroma volume in coronary arteries. The frequency of cardiovascular events was low (approximately 7% over 2 years) and similar with the use of both regimens.

The overall regression of atherosclerosis was observed in approximately 65% of the study patients over 2 years of statin therapy and was equal in both groups. This implies that approximately one third of patients had disease progression despite the use of high dose statin therapy. This leaves a scope for a novel therapeutic agent which may be more effective either by improving lipid profile or by a different pathway to modify disease activity.

The overall incidence of adverse effects was similarly low with both regimen of statin. Elevation of serum transaminases was slightly higher in atorvastatin arm whereas proteinuria was slightly higher with rosuvastatin therapy. Overall incidence of diabetes was not affected by use of either statin over 2 years in the study.

The SATURN trial goes on to demonstrate that it is the dose of the statin which is more important than the nature of the statin in achieving the treatment goal. Naturally a less powerful statin has to be given in appropriate doses to achieve a given target when compared to a more powerful statin.

Contributed by

Deepak Kumar Saha, K. Sarat Chandra

Department of Cardiology,
Nizam's Institute of Medical Sciences,
Hyderabad, India.

Cardiac magnetic resonance imaging pericardial late gadolinium enhancement and elevated inflammatory markers can predict the reversibility of constrictive pericarditis after antiinflammatory medical therapy: a pilot study. Feng D, Glockner J, Kim K, et al. *Circulation* 2011;124:1830–7.
doi: 10.1016/S0019-4832(12)60039-X

The diagnosis of constrictive pericarditis has been an enigma since long and continues to present as a diagnostic challenge. Once the diagnosis has been made it is even more challenging to decide which patient benefits from therapy. It is in this context that this study looked at 89 patients over a 7 years period with documented constriction by cardiac magnetic resonance imaging (MRI) with gadolinium. Twenty-nine patients received anti-inflammatory medications after CMR. A subset of 14 patients had resolution of constrictive pericarditis (defined by improvement by one New York Heart Association [NYHA] grade), whereas 15 patients had persistent disease after 13 months. The group with reversible constrictive pericarditis had greater pericardial thickness (4 ± 1 mm vs 2 ± 1 mm, $P=0.001$), had increased intensity of gadolinium (93% vs 33%), higher C-reactive protein (59 ± 52 mg/L vs 12 ± 14 mg/L, $P=0.04$), respectively and erythrocyte sedimentation rate (ESR) (49 ± 25 mm/hr vs 15 ± 16 mm/hr, $P=0.04$) compared to the persistent group. Anti-inflammatory therapy was associated with a reduction in C-reactive protein, ESR, and pericardial late gadolinium enhancement (LGE) in the group with reversible constrictive pericarditis, but not in the persistent disease group.

Perspective

Constrictive pericarditis is challenging both in terms of diagnosis and response to treatment. This small but focused study shows the adjunctive role of cardiac MRI in making the diagnosis, plan therapy and prognostication. This study demonstrated an association between systemic inflammatory markers and gadolinium enhancement with improvement in NYHA functional class following anti-inflammatory therapy among patients with clinical evidence of constrictive pericarditis. Further large studies will help in establishing this technique as the gold standard in differentiating reversible from persistent constrictive pericarditis.

Contributed by

Johann Christopher

Department of Cardiology, CARE Hospitals,
Hyderabad – 500034, India.