The combination of interferon-beta and HMG-CoA reductase inhibition in multiple sclerosis: enthusiasm lost too soon?

Abstract:
Recent studies support the notion that statins, widely prescribed cholesterol-lowering agents, may target key elements in the immunological cascade leading to inflammation and tissue damage in the pathogenesis of multiple sclerosis (MS). Compelling experimental and observational clinical studies highlighted the possibility that statins may also exert immunomodulatory synergy with approved MS drugs, resulting in several randomized clinical trials testing statins in combination with interferon-beta (IFN-β). Some data, however, suggest that this particular combination may not be clinically beneficial, and might actually have a negative effect on the disease course in some patients with MS. In this regard, a small North American trial indicated that atorvastatin administered in combination with IFN-β may increase disease activity in relapsing-remitting MS. Although other trials did not confirm this finding, the enthusiasm for studies with statins dwindled. This review aims to provide a comprehensive overview of the completed clinical trials and reports of the interim analyses evaluating the combination of IFN-β and statins in MS. Moreover, we try to address the evident question whether usage of this combination routinely requires caution, since the number of IFN-β-treated MS patients receiving statins for lowering of cholesterol is expected to grow.