

ABSTRACT

This thesis is about the importance of membrane and soluble endoglin (sEng) in atherosclerosis, both the development and the progression of the state. Atherosclerosis poses a major risk factor for heart diseases and stroke, which renders it a serious health issue. The role of endoglin in atherosclerosis is yet to be defined and this will be discussed below. Endoglin expression was discovered in atherosclerotic vessels predominantly in the endothelial and smooth muscle cells both in experimental animals and humans. This discovery suggests that endoglin plays a role in atherogenesis and stabilization of atherosclerotic plaques. In addition to atherosclerosis, high levels of soluble endoglin were also discovered in cases where hypercholesterolemia and myocardial infarction were observed and were also related to TGF- β signalling inhibition in the walls of the affected vessels. Additionally, statins reasonably lowered soluble endoglin levels and facilitated its expression in the aorta of mice, resulting in a decrease in the atherosclerotic effects and complications. Furthermore, patients with familial hypercholesterolemia underwent extracorporeal eliminations which helped significantly reduce the levels of soluble endoglin. In conclusion, knowing the levels of soluble endoglin and what that indicates in relation to atherosclerosis could be the tool to understanding atherogenesis, its progression and efficacy of treatment strategies implemented, which is what is yet to be determined in clinical studies.