The RANKL: Osteoprotegerin (OPG) ratio as a new biomarker for coronary artery disease

Shamsara, J.[a], Ramezani, M.[b], Mohammadpour, A.H.[c]

[a] Department of Biotechnology, School of Pharmacy, **Mashhad University** of **Medical Sciences**, PO Box ٩١٧٧٥-١٣٦٥, **Mashhad**, Iran

[b] Department of Biotechnology, Pharmaceutical and Biotechnology Research Center, **Mashhad University** of **Medical Sciences**, PO Box ٩١٧٧٥-١٣٦٥, **Mashhad**, Iran

[c] Department of Pharmacodynamy and Toxicology, School of Pharmacy and Pharmaceutical Research Center, **Mashhad University** of **Medical** Science, PO Box ٩١٧٧٥-١٣٦٥, **Mashhad**, Iran

View references (٣٧)

Abstract

Nasolacrimal There is a strong need for biomarkers to identify patients at risk for future cardiovascular events related with progressive atherosclerotic disease. Ideally, increasing knowledge of the mechanisms of atherosclerotic plaque destabilization should be translated in clinical practice. Systemic approaches are pursued to discover serum biomarkers that are applicable to define patients at risk for future cardiovascular events. Elevation in inflammatory markers, such as C-reactive protein, predicts outcomes of patients with acute coronary syndromes. Osteoprotegerin (OPG) protects the skeleton from excessive bone resorption by binding to receptor activator of nuclear factor-κB ligand (RANKL) and preventing it from binding to its receptor, receptor activator of nuclear factor-κB. Emerging evidence from in vitro studies, mouse genetics and clinical studies attributed to OPG an important role in vascular biology. But conflicting results have been obtained about association of serum level of OPG or RANKL with coronary artery disease (CAD). Based on their role in inflammation and matrix degradation and the fact that atherosclerotic plaque formation is an inflammatory process; we hypothesized that RANKL:OPG ratio could be a better biomarker for CAD. © ٢٠٠٩ Jamal Shamsara, Mohammad Ramezani and Amir hooshang Mohammadpour; licensee Tehran Univ. Med. Sci.

Author keywords

Cardiovascular disease; Osteoprotegerin; RANKL

Indexed Keywords

EMTREE drug terms: biological marker; C reactive protein; osteoclast differentiation factor; osteoprotegerin

EMTREE medical terms: article; atherosclerosis; atherosclerotic plaque; binding affinity; binding competition; cardiovascular disease; clinical study; coronary artery disease; human; in vitro study; inflammation; nonhuman; osteolysis; outcome assessment; patient identification; protein blood level; risk assessment

Chemicals and CAS Registry Numbers: C reactive protein, ٩٠٠٧-٤١-٤; osteoclast differentiation factor, ٢٠٠١٤٥-٩٣-٣; osteoprotegerin, ٢٠٥٩٤٤-٥٠-٩