World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:8, No:12, 2014

Endothelial Progenitor Cell Biology in Ankylosing Spondylitis

Authors : Ashit Syngle, Inderjit Verma, Pawan Krishan

Abstract : Aim: Endothelial progenitor cells (EPCs) are unique populations which have reparative potential in overcoming the endothelial damage and reducing cardiovascular risk. Patients with ankylosing spondylitis (AS) have increased risk of cardiovascular morbidity and mortality. The aim of this study was to investigate the endothelial progenitor cell population in AS patients and its potential relationships with disease variables. Methods: Endothelial progenitor cells were measured in peripheral blood samples from 20 AS and 20 healthy controls by flow cytometry on the basis of CD34 and CD133 expression. Disease activity was evaluated by using Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). Functional ability was monitored by using Bath Ankylosing Spondylitis Functional Index (BASFI). Results: EPCs were depleted in AS patients as compared to the healthy controls (CD34+/CD133+: 0.027 ± 0.010 % vs. 0.044 ± 0.011 %, $p<0.001$). EPCs depletion were significantly associated with disease duration ($r=-0.52$, $p=0.01$) and BASDAI ($r=-0.45$, $p=0.04$). Conclusion: This is the first study to demonstrate endothelial progenitor cells depletion in AS patients. EPCs depletion inversely correlates with disease duration and disease activity, suggesting the pivotal role of inflammation in depletion of EPCs. EPC would possibly also serve as a therapeutic target for preventing cardiovascular disease in AS.

Keywords : ankylosing spondylitis, endothelial progenitor cells, inflammation, vascular damage
Conference Title : ICBMJD 2014 : International Conference on Bone, Muscle and Joint Diseases
Conference Location : Bangkok, Thailand
Conference Dates : December 18-19, 2014