

Adipogenesis and osteoporosis Adipogénesis y osteoporosis

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Mesenchymal stem cells (MSCs) found in bone marrow stroma, are able to differentiate into osteoblasts and adipocytes, among other cell phenotypes. In normal bone marrow balanced osteoblastic and adipocytic cell differentiation favours bone formation, while in osteoporosis there is an increased adipocyte content. Since osteoblasts and adipocytes originate from a common MSC precursor cell, here we discuss whether quantitative and qualitative stem cell defects may be the cause of alterations in the number and function of differentiated cells. This review analyzes some conditions that contribute to different osteogenic/adipogenic potentials in human bone marrow MSCs obtained from control and osteoporotic postmenopausal women. We analyze the protective effect exerted by locally generated factors like estradiol and leptin on MSCs differentiation, because altered bioavailability of these factors may play a role in osteoporosis. Osteoporotic MSCs (o-MSCs) are characterized by increased adipogen