Abstract:
Previous studies have already shown a survival benefit in sub groups of metastatic breast cancer treated with bisphosphonates. Zoledronate given monthly to patients with metastatic disease to the bones showed a reduction in mortality of 32% [1]. Conceivable mechanisms include changes in the microenvironment of tumor cells, induction of apoptotic pathways, reduction of angiogenesis and cell adhesion [2-7]. Moreover, zoledronate interferes with the interaction between tumor cells and the bone marrow microenvironment. Bone metabolism is reduced, and proliferation requirements are disrupted in a major target location of metastatic disease. All these effects seem to be independent of the estrogen receptor status or grading of the primary breast tumor. There is accumulating evidence that adjuvant treatment with zoledronate improves progression and recurrent free survival in estrogen receptor positive breast cancer independent of the menopausal status. Although the use of zoledronic acid in the adjuvant setting is still off label, it has become a major corner stone in everyday clinical practice. Moreover, also in the special situation of triple negative or estrogen receptor negative breast cancer with a high risk of recurrence, zoledronate is increasingly used both within clinical trials and in individual cases.