BACKGROUND AND PURPOSE: Palliative irradiation is used to provide pain relief and to increase quality of life. Most studies exclude patients with advanced cancer disease and, therefore, a positive selection results. This prospective clinical study investigates the effect of palliative radiotherapy on pain and quality of life of patients with painful bone metastases. PATIENTS AND METHODS: 263 patients with bone metastases due to advanced cancer were observed with respect to pain and quality of life during a 2-month course of radiotherapy. Missing data were substituted by the LOCF method (last observation carried forward) to prevent a biased reduction of data. RESULTS: Radiotherapy resulted in pain relief. In the complete group, pain medication was not increased. Quality of life was not affected positively. Side effects of radiotherapy increased remarkably. CONCLUSION: Radiotherapy leads to pain relief. However, risks and benefits must be considered critically due to side effects.