

32- Comparison between Single Fraction versus Multiple Fraction Radiotherapy in Terms of Pain Control and Prevention of Skeletal Related Events in Patients with Bone Metastasis Candidates for Radiotherapy

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ABSTRACT

Background: Metastasis are the most common type of malignant tumor which involve bone, according to OSCER (Oncology Services Comprehensive Electronic Record) among 382,733 study patients, breast cancer (36 %), lunge cancer (60%), and colorectal cancer (12%) were the most common, incidence of bone metastasis was 2.9% at 30 days, 4.9% at 1 year, 5.6% at 2 years, 6.9% at 5 years, 8.4 % at 10 years. Incidence varied by tumor type with prostate cancer patients were at highest risk (18%-29%) followed by lunge, renal and breast cancer.

Aim of the Work: This study aim to prove the equivalency and the efficacy of single fraction radiotherapy (800cGY) and multiple fraction radiotherapy (10 fractions, 300 cGY / fraction, 1 fraction / day, 5 days per week over 2 weeks to a total of 3000cGy) in terms of pain relief and prevention of skeletal related events.

Results: In this study we collected data of 60 patients, 5 patients died and 55 patients received active treatment who were divided into 2 arms, Arm I represented 28 patients received single fraction radiotherapy on sites of bone metastasis (800cGY) and Arm II represented 27 patients received multiple fraction radiotherapy on sites of bone metastasis (total of 3000cGY in 10 fractions). Regarding to pain response, it was evaluated at zero, 2,4 weeks and 2,4 months using Visual Analogue Scale and Numeric Rating Scale or telephone interviews. Complete response was defined as no pain for 4 months, partial response was defined as at least 2 points lower than initial response, stable response was defined as 1 point change in pain score and progressive response was defined as pain score that's at least 2 points higher than initial response. In our study, in Arm I patient achieving complete response represented 50% and in Arm II 40.7% which is non significant of P value 0.490, while partial response in Arm I represented 39.3% and 18.5 % in Arm II which is non significant of P value 0.090, stable response in Arm I represented 3.6% and 33.3% in Arm II which is highly significant of P value 0.004 and progressive response in Arm I represented 7.1% and in Arm II 7.4% which is non significant of P value 0.974.

Conclusion: Single fraction radiotherapy is equivalent to multiple fraction radiotherapy in terms of palliating pain of bone metastasis and prevention of skeletal related events.

Keyword: Single Fraction, Multiple Fraction, Bone Metastasis.