

**FC-065****Prognostic factors for survival in 551 patients with symptomatic metastases of the long bones treated with radiotherapy or surgery****J. Willeumier**¹, Y. van der Linden², S. Dijkstra¹¹ Department of Orthopedic Surgery, Leiden University Medical Center, Leiden, The Netherlands² Department of Radiotherapy, Leiden University Medical Center, Leiden, The Netherlands

Introduction: Adequate prediction of remaining survival is an essential factor in the decision-making process when determining a patient-specific treatment plan for symptomatic bone metastases of the long bones. This study aims to assess survival and evaluate prognostic factors in a cohort of patients with cancer and symptomatic bone metastases treated with radiotherapy and/or surgery.

Methods: From 2000 to 2010, 551 consecutive patients (mean age 64 years (range 10-93)) were treated for symptomatic metastases of the long bones in our institution (67% radiotherapy; 6% surgery; 28% radiotherapy and surgery).

The following risk factors for survival were analysed: age, gender, primary tumour, metastasis localisation, pathologic fracture, visceral and brain metastases, local treatment of the primary tumour, previous chemotherapy, treatment of the metastasis, performance score (KPS<70 (32%) vs. KPS≥70 (68%)), ambulatory ability (yes (incl. walking aids; 76%), no (wheelchair-bound/bedridden; 24%)), and presence and extent of bone metastases (solitary (10%), oligometastatic (2-4; 13%), diffuse (≥5; 67%)). Primary tumours were categorised into three groups of proliferation rate (rapid (expected survival <6 months; 35%), moderate (expected survival 6-12 months; 26%), slow (expected survival >12 months; 36%)) based on the Bollen classification^[1]. Survival times were estimated from the first moment of local treatment. For statistical analysis univariate log-rank tests and multivariate Cox-regression analyses were performed.

Results: Median overall survival was 7 months (95% CI 5.8 – 8.2). At 2 years, 79% of all patients had died. Based on multivariate analysis, primary tumour type (HR 3.9, 95%CI 2.8-5.4), number of bone metastases (HR 2.0; 95%CI 1.1-3.3), performance score (HR 1.6; 95%CI 1.2-2.1), and ambulatory ability (HR 1.4; 95%CI 0.9-2.2) influenced survival. A negative significant impact of the presence of visceral metastases on survival was noted only for patients with slow growing tumours. There was no difference in survival between patients with 2-4 bone metastases as compared to diffuse metastatic disease, whereas patients with a solitary metastasis had the best survival.

Conclusion: Most patients with cancer and symptomatic bone metastases of the long bones have a limited survival. When deciding upon treatment, the primary tumour type is the most important prognostic factor to distinguish between short and long-term survivors.

References:

- ¹ Bollen L, van der Linden YM, Pondaag W, Fiocco M, Pattynama BP, Marijnen CA, Nelissen RG, Peul WC, Dijkstra PD (2014) Prognostic factors associated with survival in patients with symptomatic spinal bone metastases: a retrospective cohort study of 1 043 patients. *Neuro-oncology*. doi:10.1093/neuonc/not318