

**FC-144****Long-term follow-up of functional outcome after malignant bone cancer surgery around the knee****J. van Egmond-van Dam**<sup>1</sup>, P. Bekkering<sup>1</sup>, J. Bramer<sup>2</sup>, A. Beishuizen<sup>3</sup>, M. Fiocco<sup>1</sup>, S. Dijkstra<sup>1</sup><sup>1</sup> *Leiden University Medical Centre, Leiden, The Netherlands*<sup>2</sup> *Academic Medical Center University, Amsterdam, The Netherlands*<sup>3</sup> *Erasmus MC University Medical Center, Sophia Children's Hospital, Rotterdam, The Netherlands*

**Introduction:** Literature concerning prospective functional outcome in primary bone cancer is lacking. Functional outcome has been investigated for two years in a prospective multi-center study among young patients after a limb-salvage (LS) or ablative surgery (AS) due to a malignant bone tumour around the knee. The significant improvement of functionality in the first year decreases in the second year. At 5 years or more after surgery we re-investigate these patients for their functional outcome.

**Methods:** Twenty, 15 LS (6 allografts, 9 endoprotheses) and 5 AS (amputation: 2 femur, 3 tibia) patients, of the 44 patients of the original study were included. Twenty-one patients died of disease. Mean follow-up duration was 7.2 years (5.1-8.8) with a mean age of 22.3 years (18.2-31.6). None of these patients had a local recurrence, 19 patients were free of disease and one patient was alive with disease after surgery because of lung metastases. Functional ability was assessed with the Toronto Extremity Salvage Scale (TESS), the Musculoskeletal Tumor Society score (MSTS) and 3 functional performance tests; timed up and down stairs (TUDS), various walking activities (VWA) and 6 minutes walking test (6 MWT). Physical activity was assessed with the Baecke questionnaire. Statistics analysis has been conducted with Linear Mixed Model Analysis.

**Results:** All obtained measurements show no significant difference after 2 years vs. more than 5 years after surgery. Mean differences of 2 years vs. more than 5 years after surgery: TESS -5.2 (-10.9- 0.5), functional tests: TUDS 0.4 seconds (-5.2- 6.0), VWA 0.2 seconds (-3.6- 4.0), 6 MWT -18.9 meters (-68- 30.2), Baecke 0.0 (-0.6- 0.6) (CI 95%). MSTS score of 75% for AS and 86% for LS patients. LS patients (10/15) had more complications than the AS patients (1/5). Within the LS group 7/9 endoprotheses and 3/6 allograft patients; each subgroup needed 7 re-operations for their complications.

**Conclusion:** After at least 5 years follow-up we found no significant improvement in functional outcome in comparison with 2 years after malignant bone surgery around the knee, as no significant difference was found between surgery type.