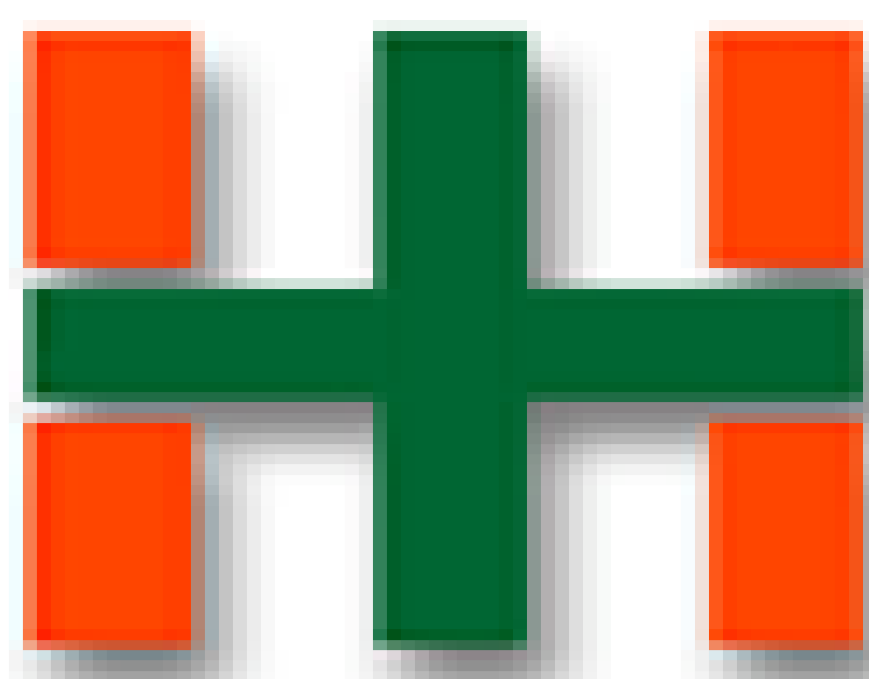


Limb Salvage Surgery for Pelvic Bone Sarcomas: Which Factors Could Influence the Oncological and Clinical Outcomes?

L Llano, JI Albergo, MA Ayerza, GL Farfalli, LA Aponte-Tinao



Argentina

Background: Pelvic bone sarcoma represents a challenge for the orthopedic surgeons due for the extension of this tumors and the complexity of the anatomy. The prognosis for patients with primary pelvic bone sarcomas, in terms of overall survival, local recurrence rates, and complications is much less favorable than patients with primary malignant tumors of the extremities. The treatment of pelvic bone tumor continues under debate, mainly regarding the benefits and disadvantages of reconstruction as well as the use of navigation.

Objective: To analyzed a groups of patients with pelvic bone sarcomas treated with limb salvage surgery in terms of: 1- Disease specific survival, 2- Local recurrence free survival, 3- Oncological prognosis factor and 4- Non oncological complications.

Methods: We retrospectively reviewed a group of patients with pelvic bone sarcoma treated with limb sparing surgery at a single institution between 1997 and 2017. We include only patients treated with limb salvage surgery and a minimum of 3 years follow- up for patients alive. A total of 79 patients were included for analysis. The mean age was 39 years (range 7-82). The disease specific survival and the local recurrence free survival were calculated for the assessment of oncological results using Kaplan Meier. The associations with gender, age, margins and use of navigation were examined using a competitive risk analysis. The statistical significance of the differences was evaluated with the criterion of $p < 0.05$.

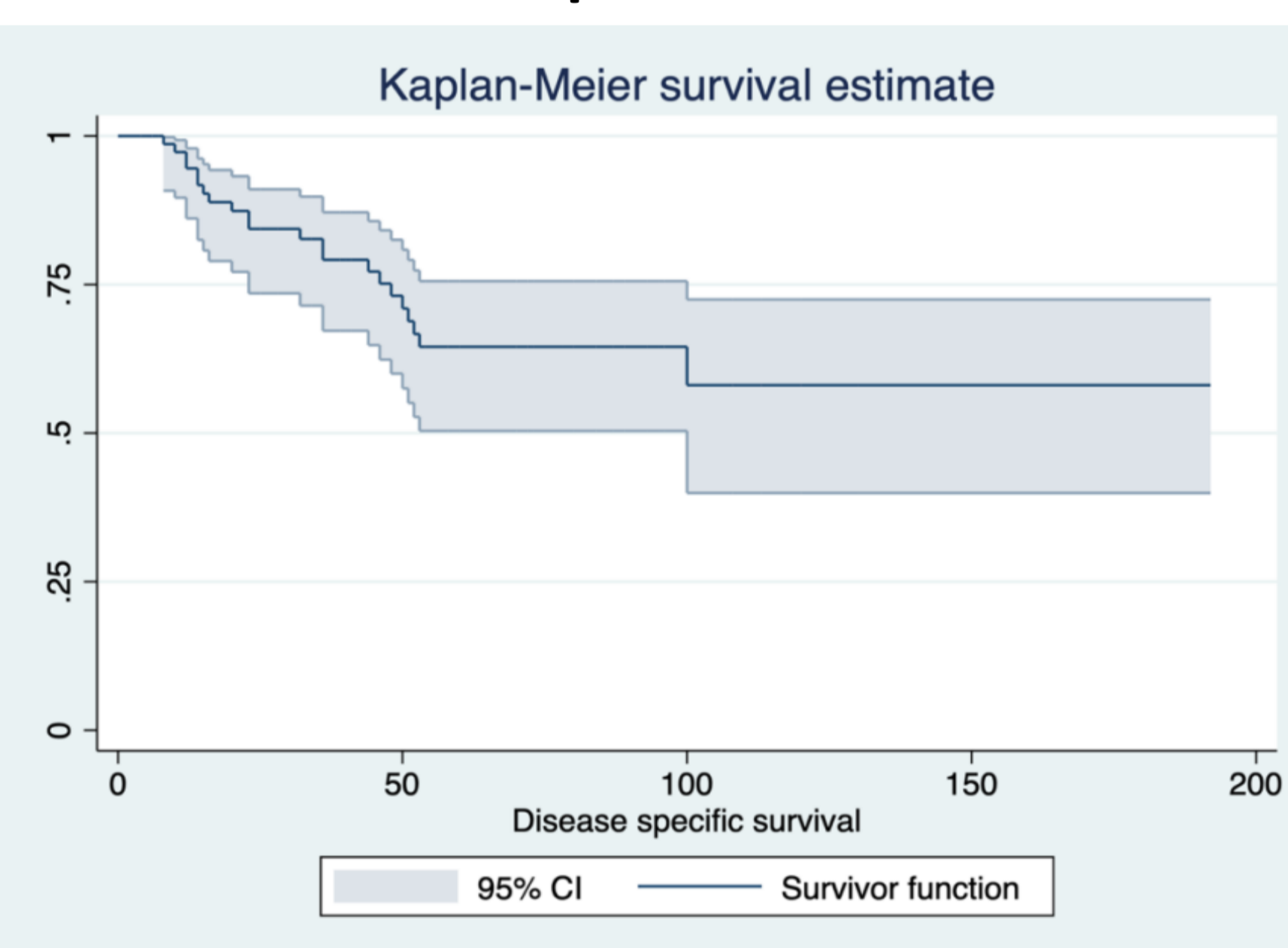


Figure 1: Kaplan Meier analysis for disease specific survival.

Results: Disease specific survival was at 95% (95% CI 86-98) at 1 year, 79.2% (95% CI 67.2-87.2) at 3-years and 64.5% (95% CI 50.4-75.6) at 5-years. (Figure 1). Local recurrence free survival was at 84.5% (95% CI 74.4-90.9) 1-year, 64.3% (95% CI 51.7-74.5) at 3-years, 60.0% (95% CI 46.9-70.9) at 5-years. (Figure 2). We did not found differences in survival for local recurrence, margins, age (<16 / >16) and gender. Factors that affected survival were the use of navigation for surgery and tumor grade (low / high). A total of 25 (32%) non oncological complication were reported and infection was the most prevalent (15). Other complications were wound complications and postoperative hematoma (5), allograft fractures (3) and hip dislocation (2). In 16 of 25 (64%) patients who presented a complication, a reconstructive procedure after the oncological resection was associated. Reconstruction of the pelvis after an oncology resection for primary pelvic sarcomas increased the incidence of complication significantly ($p < 0.001$).

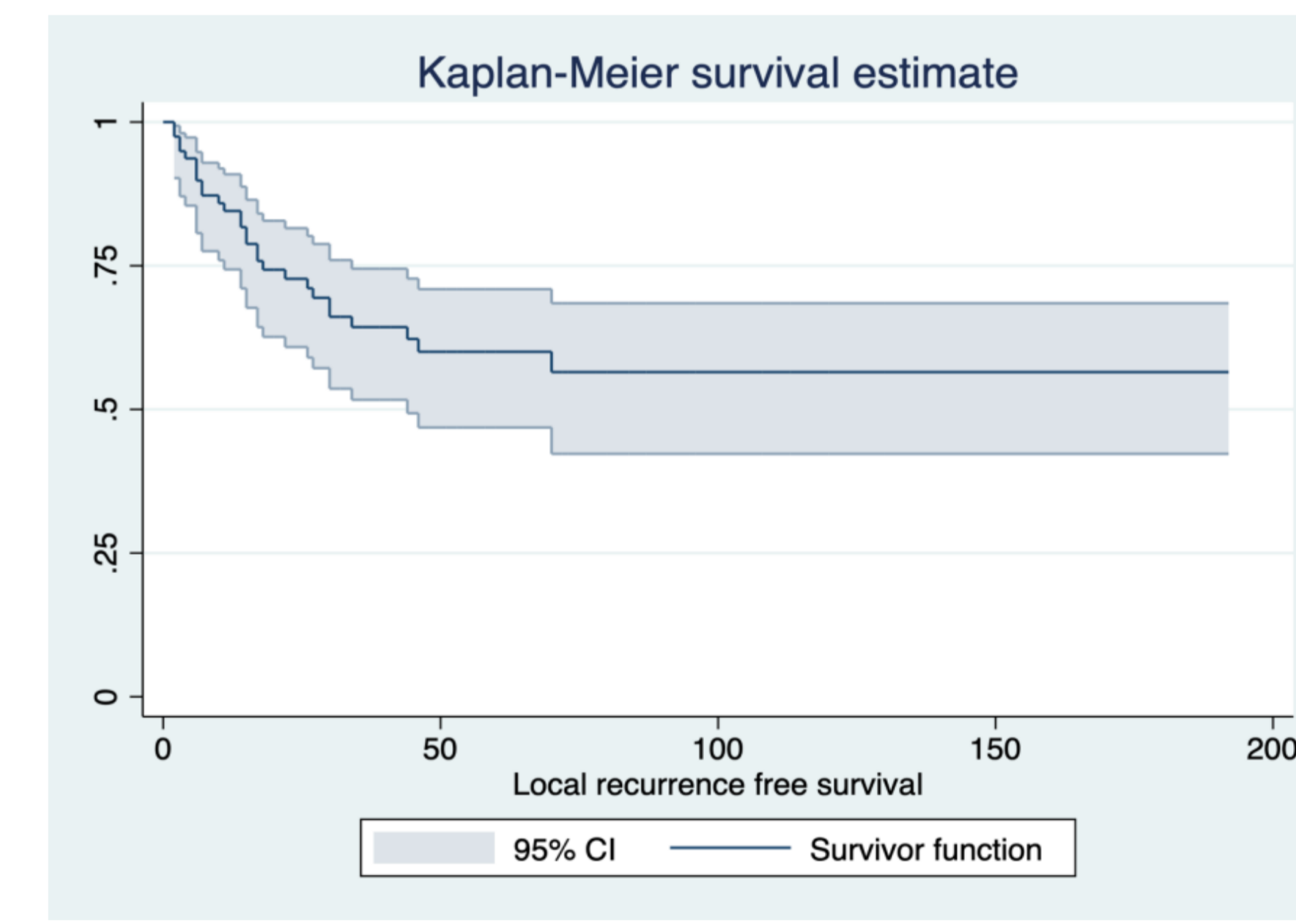


Figure 2: Kaplan Meier analysis for local recurrence free survival.

Conclusion: Limb salvage surgery for primary bone sarcomas involving the pelvis reported similar oncological outcomes to external hemipelvectomies. Surgeons must be aware about the high incidence of non-oncological complications mainly when a reconstructive procedure is combined with the resection. Although the patients treated with navigation presented better survival, no definitive conclusion can be made and further studies should confirm these preliminary results.