

# Brazilian Knee Tumor Prosthesis: Survivorship analysis and outcomes

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## Background

In Brazil, we do not have tumor prosthesis commonly used as in other countries. Thus, the Oncology Orthopedics sector of UNIFESP developed in partnership with a Brazilian company one non-conventional model of knee endoprosthesis.

## PURPOSE:

The purpose of this study is to evaluate the survival of Brazilian knee endoprosthesis and secondarily to analyze the long-term outcome of patients undergoing tumor resection and reconstruction with knee endoprosthesis.

## PATIENTS AND METHODS:

We evaluated in retrospective study 52 consecutives knee endoprosthesis performed in 46 patients in the period of January 2005 to 31 December 2014. All data were collected from electronic medical records of patients. They included all patients with osteosarcoma around the knee treated with tumor resection and reconstruction with non-conventional knee endoprosthesis. All patients underwent chemotherapy treatment according to the Brazilian protocol of osteosarcoma.

The survival of prosthesis and the survival by Kaplan Meier curve was evaluated. It was also evaluated the correlation between age and survival time of the endoprosthesis. Secondarily we evaluated the functional status at last follow-up visit by the MSTS score.

Fifty-two percent of patients were male and forty-eight of the female. The average age of patients was 19 years (8-38 years). All patients presented as diagnostic high-grade osteosarcoma, and in 74% the femur was the primary site and 26% tibia was the primary site.

## RESULTS

The average survival of endoprosthesis was 46.2 months, ranging between 5.6 months and 119.40 months. The main cause for revision of the prosthesis was infection, followed by aseptic loosening. Patients with primary prosthesis showed an average survival of 45.2 months while the revised prosthesis showed an average survival of 46.2 months. The Pearson test identified low linear correlation between age and survival time of prosthesis ( $p = 0.161$ ). Kaplan Meier curve showed that 75% of prosthesis survived at least 40 months. When we split in two groups, revision prosthesis showed minor survivorship than primary prosthesis.

## CONCLUSION

We observed that the survival of the Brazilian knee endoprosthesis has values close to world literature. Despite being a model developed in Brazil, the functional results also tend to approach the results of other models of knee endoprosthesis.