

ABSTRACT



Publication

Evaluation of the Survival of the Walter-Motorlet TKA: Long-term Outcomes

J. BEK, P. VAVŘÍK, I. LANDOR

I. ortopedická klinika 1. LF UK, FN Motol, Praha

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PURPOSE OF THE STUDY

The aim of the study was: 1. statistical evaluation of the survival of the first Czech TKA of Walter-Motorlet type, 2. comparison of the outcomes of different types of tibial components and finding out of the difference, if any, in the survival of all-poly and metal-backed components.

MATERIAL

The authors evaluated a group of patients treated by the Walter-Motorlet TKA in the period between September 1984 and December 1989. The cohort comprised 170 patients with 211 knees. Of this group, available to follow-up were 185 TKA in 148 patients on average 17,5 years after the operation (range, 15.0-20.1 years). One female patient who died of pulmonary embolism was not included in the study. The final cohort thus comprised 184 TKA in 147 patients.

METHOD

The evaluation of the general outcomes was based on the method of the cumulative survival curve after Kaplan-Meier in dependence on the type of the implant its components and basic diagnosis. In addition, the authors carried out a comparison of different types of tibial components.

OUTCOMES

After 20 years the curve shows 76 % as the cumulative number of the survived implants. Eighteen TKA failed due to aseptic loosening and 12 TKA for infection. The comparison of survival curves in rheumatoid arthritis (RA) and osteoarthritis (OA) in case of the femoral components is in absolute terms slightly better in RA patients, however statistically this difference is insignificant ($p = 0.34$). Similar result was achieved in the tibial

component, i. e. slightly better in RA patients, however only until the interval of 18 years after the surgery. After this interval the curve shows identical course in both diseases ($p = 0.20$). The comparison of individual all-poly tibial components revealed slightly better results in total plateau replacements ($p = 0.13$), the comparison of metal and total all-poly tibial components is slightly better in the metal-backed components ($p = 0.07$). However, the differences found out in all these cases are not statistically significant, either, and the outcomes of both types of components may be considered identical.

DISCUSSION

Evaluation of the cohort at the interval of up to 20 years after the surgery only by means of usual health status documentation is highly demanding. The cumulative number of the survived implants evaluated by the Kaplan-Meier method after 20 years was 76 %. There is no study following the cumulative survival of the TKA exceeding ten years in the Czech literature and these studies are not very frequent in other countries, either. Comparison of the outcomes of our study is difficult as the criteria used in different published studies are not uniform. Slightly more favourable results in RA patients may be ascribed to the fact that their demands for physical activity is not so high. Comparable outcomes of the all-poly and metal backed tibial components are rather surprising and their confirmation would require a more detailed examination in a randomized prospective study. of both types of components may be considered identical.

CONCLUSION

Based on the comparison with similar articles published abroad, 76 % as the outcome of the cumulative survival of the first type of the Walter-Motorlet TKA after more than 17 years may be considered satisfactory. The study has confirmed a good long-term survival of all-poly tibial components comparable with metal-backed components. It has indicated slightly better results in the survival of TKA in patients with RA as compared to those with OA, although the difference is not statistically significant. Evaluation of a greater cohort of patients at a longer interval after surgery would be considerably facilitated by the existence of a central TKA register.