



# Arthroplasty Register of the Autonomous Province of Bolzano (Italy). Survivorship rates after 1 and 2 years of primary hip and knee prosthesis surgeries – first comparative study of the provincial hospitals

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## INTRODUCTION

The regional Arthroplasty Register of the Autonomous Province of Bolzano (RPPA) collects data referring the hip prostheses since 2010 and knee prostheses since 2011. The RPPA is part of the national Italian Arthroplasty Register (RIAP).

In 2018 a first detailed study was carried out to compare the revision rates after 1 and 2 years between the main hospitals of the Province (the seven public hospital structures and a private clinic, that participated from the beginning).

## METHOD & DATA COLLECTION

The RPPA collected for the period 2010-2017 data of about 11,000 hip prosthetic devices and 6,000 knee prostheses. The level of completeness of the RPPA for the period is around 98%. The Kaplan Meier method was used to estimate the revision rate of each structure. The data has not been adjusted by any factor.

For the calculation of the revision rate, only the primary interventions of resident patients were considered. The comparison of the survival curves has been done using the log rank test ( $p < 0.05$ ).

### Register data 2010-2017

HIP	KNEE
period: 2010-2017	period: 2011-2017
hospitals (pubbl/priv): 11 (7/4)	hospitals (pubbl/priv): 11 (7/4)
primary surgeries: 9,667	primary surgeries: 5,126
total surgeries: 10,766	total surgeries: 5,506
register completeness: 97.9%	register completeness: 97.5%
revision burden: 10.2%	revision burden: 6.9%
Δ 2017/2010 primary HP: + 19%	Δ 2017/2011 primary KP: + 133%

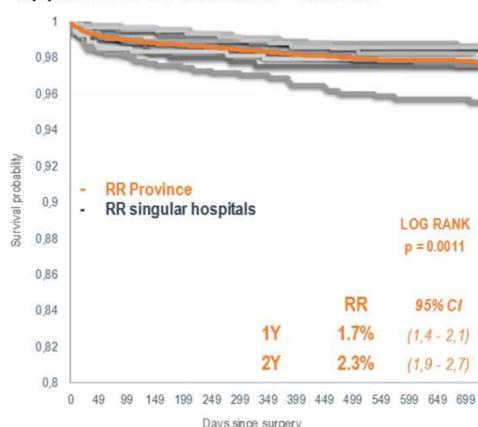
Furthermore, only the revisions of the patients residing in the Province were considered, which were carried out in the hospitals of the provincial territory.

The following survival indicators were calculated and compared:

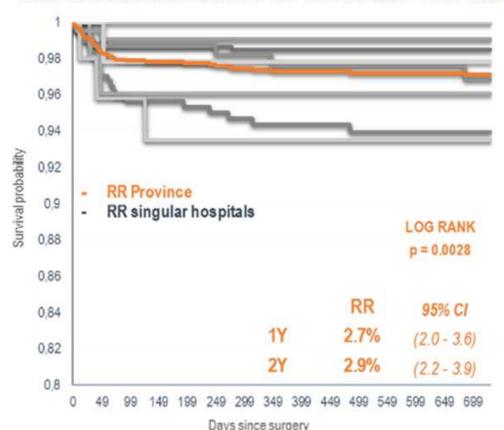
- Revision rate (RR) after 1 and 2 years for elective primary hip prostheses.
- Revision rate (RR) after 1 and 2 years for primary hip prostheses after fractured neck of femur.
- Revision rate (RR) after 1 and 2 years for Total knee prostheses.

## RESULTS

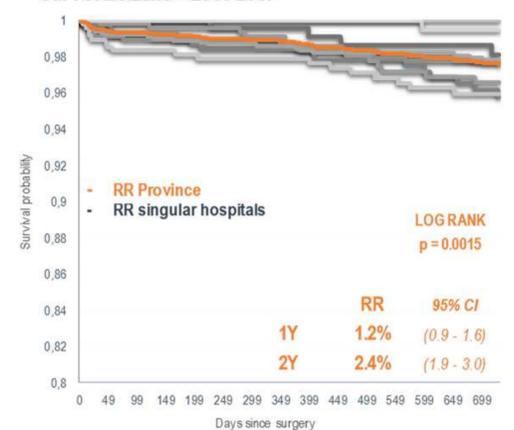
Revision rate after 1 and 2 years: elective primary total hip prostheses- A.P. of Bolzano – 2010-2017



Revision rate after 1 and 2 years: primary hip prostheses after fractured neck of femur - A.P. of Bolzano – 2010-2017



Revision rate after 1 and 2 years: total knee prostheses - A.P. of Bolzano – 2011-2017



The Kaplan-Meier survival curves for all the primary interventions (elective total hip prostheses, hip prostheses after fractured neck of femur and total knee prostheses) show significant differences between the 8 hospitals.

The performance of individual hospitals is however different and not homogeneous among the different types of primary implant surgery.

## SUMMARY

The analysis of the missing register forms shows a greater incompleteness of the data in the revision interventions (76 missing forms, corresponding to 7.0% of the hip-revisions and 8.9% of the knee revisions).

Data relating to resident patients, which are undergone to a revision outside the provincial territory, are also missing.

Every year on average 5% of the revisions for resident patients are carried out in other Italian regions, but registry data for the study period are not available.

These factors can affect the real revision rates calculated for individual structures.

The presentation of these first results has caused strong interest from surgeons, who wish to monitor their prosthetic activities. So it is planned that the provincial Register will develop and made available further and regular timed indicators relating to the survival of primary interventions by singular structure and surgeon.