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Outcome analysis of first revisions of hip replacement surgeries; first study using data from the Provincial Registry of Hip Prostheses of the Autonomous Province of Bolzano (Italy)

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Introduction
The AP of Bolzano (PABZ) has an incidence rate of hip prostheses of 256.6 per 100,000 inhabitants. The Provincial Hip Arthroplasty Register (PHAR) was established in 2010. The aim of the study is to analyze the outcomes of the first revisions (second revision and mortality).

Materials and Methods
Starting from all the first revisions of the PHAR, in the period from 01.01.2010 to 31.12.2020, the risks of a second revision (RR) and mortality after the first revision (MR) were estimated using the Kaplan Meier method (KM). Subsequently, RR and MR were also estimated using the Cox proportional risks model, taking into account the following risk factors: gender, age, reason for first revision (RFFR), ASA, length of hospitalization at first revision and rehabilitation admission within 7 days of first revision.

Results
Of the 981 cases of first revision, 76 cases underwent a second revision within one year. The 1-year RR corresponds to 8.0% (95% CI: 6.4 9.9) and the MR at 1 year to 4.6% (CI 3.4 6.1). The RFFR "periprosthetic fracture" and "length of stay" are significant for the calculation of the RR.

Conclusion and Discussion
Patients with periprosthetic fracture have a 78% higher risk than patients with other RFFRs to perform a second revision within one year. As expected, the MR within one year increases with age (+9% for each year). The study presents the limits of low numbers (typical for a regional registry) and needs additional clinical variables to be included in the model.

Notes