

Arthroplasty for hip fracture in Uruguay. Earlier surgery and better general care rather than new devices

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Background

- 14.1% of Uruguay population is older than 65 years.
- Hip fracture risk increase with age and consequences may be devastating.
- Arthroplasty for hip fracture is funded by the National Resources Fund (NRF) for all citizens.
- A registry was developed and performance indicators evaluated.
- Delay between fracture and surgery exists and affects functional results and mortality.
- Surgery is provided with a cemented prosthesis produced by regional manufacturer at a low cost.
- Progressive pressure emerges for incorporation of new and high cost prosthesis.

Objectives

- Analyze medium and long term mortality and risk factors for, and incidence of revision surgery, to optimize resources allocation.

Methods

- Cohort of years 2003-2006 of hip fracture arthroplasty.
- Logistic regression model for one year-mortality was developed.
- Model performance analysis.
- Competing risk for time to revision and mortality were applied to 2008 cohort.

Results

- Cohort 2003 – 2006
 - 3146 arthroplasties for hip fractures
 - Age 79.4y (SD 8.5)
 - Female 81.7%
 - Chronic Renal Failure 3.9%
 - Parkinson Disease 5.5%
 - Diabetes 11.8%
 - Metastatic Cancer 1.2%
 - Chronic Respiratory Disease 14.1%
 - Dementia 2.1%
 - Partial-arthoplasty 57.2%
 - Time between Fracture and Surgery
 - Median: 6 Days
 - IQ range: 5 - 12

Results

Logistic Model for One-year Mortality

Variable	Coefficient	OR	CI 95%
Age (every year above 74)	0.049	1.05	1.03-1.07
Male gender	0.565	1.76	1.36-2.28
Chronic Renal Failure	0.425	1.53	0.96-2.5
Parkinson Disease	0.463	1.59	1.05-2.15
Diabetes	0.455	1.58	1.16-2.14
Metastatic Cancer	2.094	8.12	4.03-16.4
Chronic Respiratory Disease	0.348	1.42	1.06-1.89
Dementia	0.546	1.73	0.95-3.14
Partial Arthroplasty	0.912	2.49	1.83-3.39
Days fracture to surgery	0.014	1.014	1.00-1.024

ROC = 0,705 (CI 95%: 0,680– 0,730)

Hosmer – Lemeshow Test: p = 0,189

R² Naegelkerke = 0,117

Results

- Cohort 2008
 - 820 arthroplasties for hip fractures
 - Age 79.5y (SD 8.2)
 - Female 82.9%
 - Chronic Renal Failure 4.3%
 - Parkinson Disease 3.4%
 - Diabetes 11.5%
 - Metastatic Cancer 1.4%
 - Chronic Respiratory Disease 14.1%
 - Dementia 3.6%
 - Partial-arthoplasty 57.7%
 - Time between Fracture and Surgery
 - Median: 6 Days
 - IQ range: 3 – 15.8

Results

Long-term results

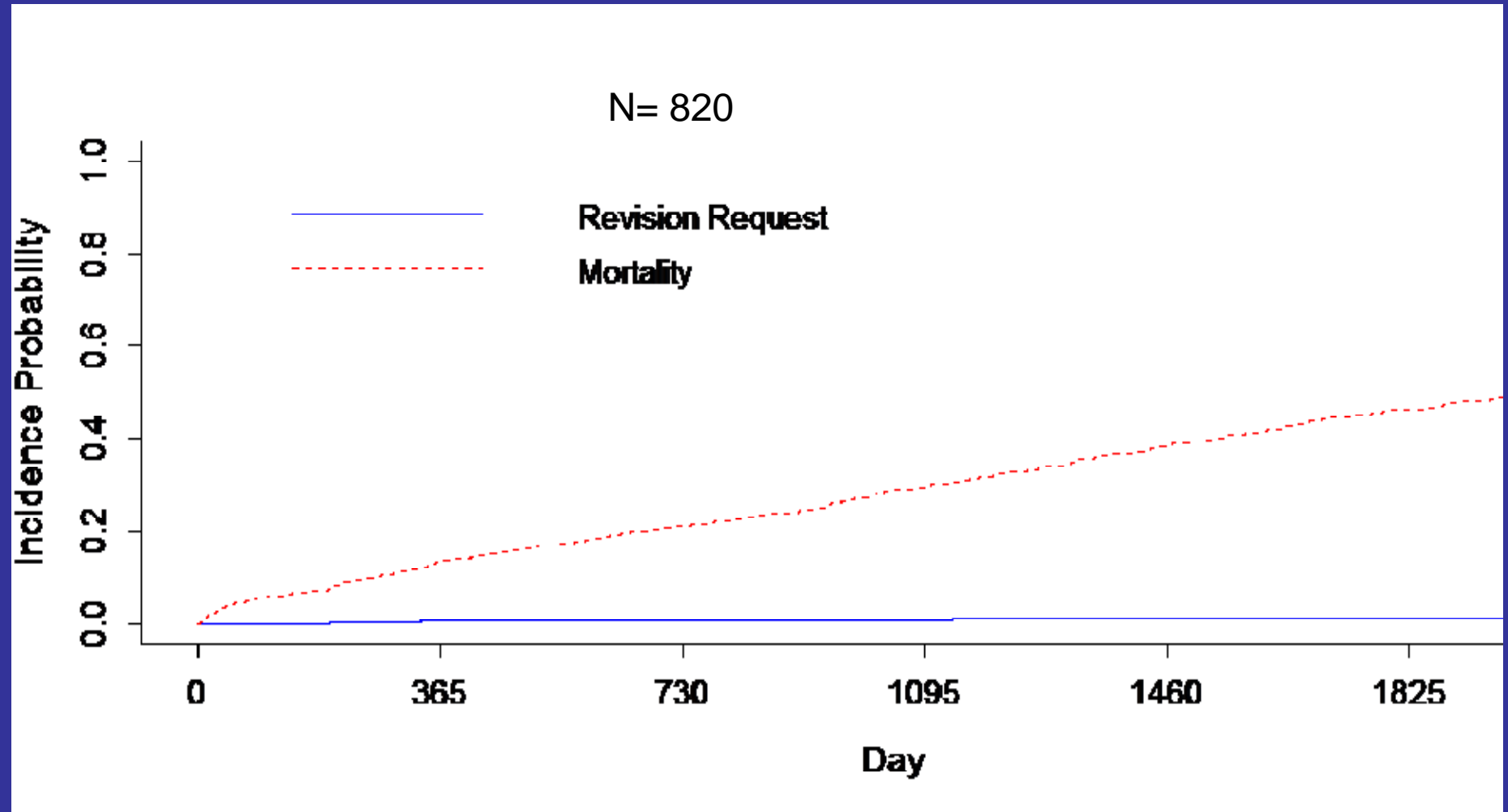
Competitive Risk Analysis

Type of Arthroplasty	End point	1 year %	3 years %	5 years %
Total N=336	Revision Request	0.89	1.49	1.79
	Mortality	8.33	18.2	31.5
Partial N=534	Revision Request	0.37	0.56	0.94
	Mortality	16.1	36.3	55.2
Population N= 820	Revision Request	0.57	0.52	1.26
	Mortality	13.1	29.3	46

Model performance for 5-years mortality: ROC = 0.69,0.65-0.72

Results

Arthroplasty by Hip Fractures - Cohort 2008 Competitive Risk Analysis



Conclusions

- Mortality at follow-up was high
- Factors susceptible to improve were identified
 - diabetes
 - dementia
 - Parkinson
 - chronic respiratory disease
 - renal failure
- Time between fracture and surgery affect patient survival, was very long and didn't change
- Incidence of revision was very low at five years
- Invest in earlier surgery and in improve medical care will be more cost-effective than incorporate new devices for arthroplasty