PROPORTION OF SECOND-EYE CATARACT SURGERY IN THE PUBLIC HEALTH SYSTEM IN CATALONIA (SPAIN)

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BACKGROUND AND OBJECTIVE

In the last few decades, cataract surgery rates have markedly increased in Western countries. A substantial part of this increase is due to second-eye cataract surgery. Several studies have demonstrated the benefit of second-eye surgery, especially in stereopsis and in patient-reported visual disability. Bilateral cataracts are usually removed one eye at a time, mainly due to the risk of major complications such as endophthalmitis. Few studies have explored the factors associated with second-eye cataract surgery utilisation. The aim of this study was to estimate the proportion of second-eye cataract surgery, evaluate its trends, and explore variations in utilization by patients' gender, age, and region of residence.

METHODS

All senile cataract surgeries performed between 1999 and 2002 in the Public Health System of Catalonia (Spain) were obtained from the Minimum Data Set. The time interval between the first and second intervention in patients who underwent two interventions in the period was calculated (n=38,284). The mean time interval was 7.5 months with a median of 4.9 months. The 95th percentile (22 months) was considered as the maximum time interval between the two interventions, allowing errors in the identification of first- and second-eye surgeries to be reduced to 5%. Thus, the proportion of second-eye surgery from November 2000 to December 2002 was calculated.

A linear regression model was adjusted with the observed monthly proportion of second-eye surgery as the response variable. This model included the natural logarithmic transformation of time in months (ranging from 1 to 26) as the explanatory variable. Differences in the proportion of second-eye surgery according to gender, age, and region were evaluated through independent models. Each of these models included the logarithmic transformation of time, the coefficient(s) associated with the factor under study, and the interaction between them as explanatory variables.

RESULTS

The proportion of second-eye surgery was 30.0% and showed an increasing trend (R2 59.4%) from 24.8% (95%CI 21.6; 26.1) in November 2000 to 31.8% (95%CI 31.4; 33.6) in December 2002, and its projection to 5 years was 35.7% (95%CI 33.6; 37.7) (figure 1). The proportion of second-eye surgery was 2% (95%IC 0.9; 3.1) greater in women than in men. Patients aged 80 years or more had a lower proportion (20.7%; 95%IC 20.2; 21.3), although they presented a significantly higher logarithmic increase (3.1% 95%CI 2.8; 3.4), specially with respect to patients younger than 60 and from 60 to 69 years (table 1). Significant differences among regions were found in the proportion of second-eye surgery (figure 2). Two regions had proportions around 32%, and three regions proportions around 17%. The latter had a significantly greater increasing tendency around 4%. Since regions with the lowest initial utilisation showed a greater increasing tendency, variations among regions decreased.
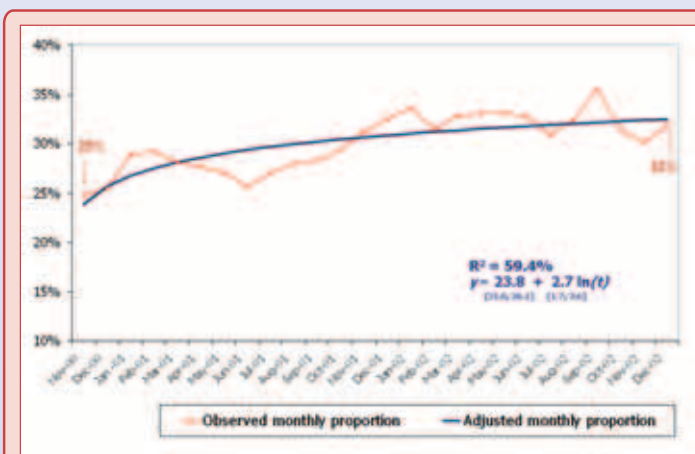

Figure 1: Observed and adjusted value of the proportion of second-eye cataract surgery in Catalonia
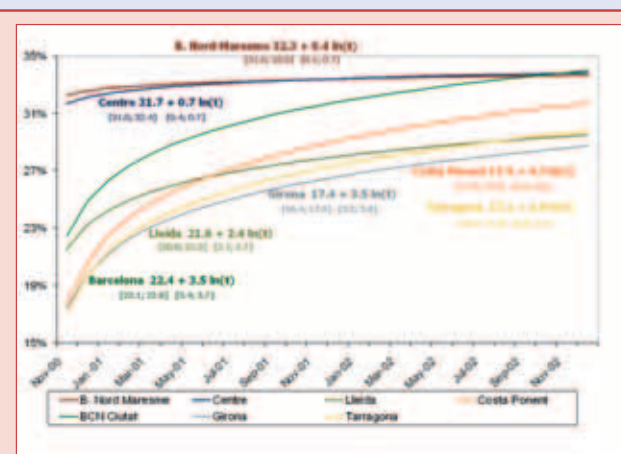

Figure 2: Adjusted value of the proportion of second-eye cataract surgery by region

Table 1 Regression model of the monthly proportion of second-eye cataract surgery by age (n=104).

	Intercept*	95% Confidence Interval	Coefficients †	95% Confidence Interval
Less than 60 years	24.4	[24.2; 24.6]	1.1	[1.0; 1.2]
60 – 69 years	25.2	[24.6; 25.7]	2.2	[1.9; 2.5]
70 – 79 years	25.0	[24.5; 25.5]	2.7	[2.5; 3.0]
80 or more years	20.7	[20.2; 21.3]	3.1	[2.8; 3.4]

* Recalculated coefficients: Intercept coefficient + coefficients of each of the age groups
† Recalculated coefficients: Coefficient of the LN(month) + coefficient of the interaction between LN(month) and each age group.

CONCLUSIONS

We predict greater utilization of second-eye surgery in older patients and in women. Variations among regions are reduced throughout the study period, which could indicate a generalization of bilateral cataract surgery in Catalonia. However, the observed trend suggests that there will be a substantial proportion of unmet need for bilateral surgery.

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