MORBIDITY AND MORTALITY AFTER URGENT HIP FRACTURE SURGERY – ANALYSIS OF OUR ENVIRONMENT

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1. Background

- Hip fractures represent one of the most important causes of morbidity and mortality in elderly people.
- It is estimated that there were 1.66 million hip fractures worldwide in 1990, projected to be more than 6 million by the year 2050.¹
- Understanding the incidence of morbidity and mortality following hip fracture is essential to measuring elderly health and the value of improvements in health care.
- The aim of this study was to analyze the risk factors for morbidity and mortality.

2. Methods

What?

Observational retrospective study

Who?

N=134 hip fracture patients, who underwent urgent primary surgery. High kinetic trauma, under 18 years old and pregnant patients were excluded.

When?

From January to December of 2016

Where?

The study was held in a tertiary teaching hospital in Lisbon – Centro Hospitalar Lisboa Norte, Hospital Santa Maria

Why?

The primary outcome was mortality at **30-day** and **90-day** and the secondary outcomes were **complications** during admission.

How?

Statistical analysis was performed using SPSS software. Significant results were considered when $p < 0.05$.

3. Results

- 134 patients 97 (72,4%) 37 (27,6%)
- Age: 83,46 ± 9,73 years (range 42-103)
- Comorbidities: Congestive heart failure (26,9%) | Diabetes mellitus (17,2%) | Chronic obstructive pulmonary disease (9,7%)
- 30-day mortality was 7,5% (10 patients) and 90-day mortality was 9,2% (12 patients).
- Postoperative morbidity was seen in 61 patients (45,5%).

Factors associated with mortality

30-day mortality	Statistical significance	OR 95% CI
ASA classification	$p = 0.015$	OR = 1,13 (1,047-1,219)
Minimum mean blood pressure	$p = 0.042$	OR = 0,945 (0,894-0,998)
Post-operative length of stay	$p < 0,001$	OR = 0,254 (0,120-0,537)
Gastrointestinal complications	$p = 0,046$	OR = 9,916 (1,444-68,123)
Recovery of ambulation	$p = 0,004$	OR = 0,882 (0,798-0,975)
90-day mortality	Statistical significance	OR 95% CI
ASA classification	$p = 0.008$	OR = 1,16 (1,067-1,265)
Chronic obstructive pulmonary disease	$p = 0,014$	OR = 6,94 (1,714-28,086)
Recovery of ambulation	$p = 0,003$	OR = 0,075 (0,009-0,618)

Factors associated with increased postoperative morbidity

Post-operative morbidity	Statistical significance	OR 95% CI
Nursing home	$p = 0,026$	OR = 2,8 (1,104-7,103)
Surgical procedure duration	$p = 0,027$	OR = 1,014 (1,002-1,027)
Intra-operative complications	$p = 0,039$	OR = 2,93 (1,021-8,406)
Minimum heart rate	$p < 0,001$	OR = 1,053 (1,023-1,083)
Post-operative hemoglobin	$p = 0,021$	OR = 0,738 (0,570-0,955)
Immobilization	$p = 0,001$	OR = 0,30 (0,144-0,638)
Post-operative length of stay	$p = 0,03$	OR = 1,051 (1,005-1,099)
Pre- and postoperative Cr variation	$p < 0,001$	OR = 42,555 (6,67-271,43)

- Timing of surgery did not have a significant effect on 30-day and 90-day mortality or complications arising during hospitalization ($p > 0.05$).

4. Conclusions

- Identification of patient and perioperative factors can guide changes in best practice to decrease morbidity and mortality following a femoral neck fracture.
- There is a need for further studies concerning survival analysis to understand mortality rates in these patients.
- We recommend an early preoperative optimization of medical condition of patients with hip fracture before undergoing surgery.

5. References

- Dennison E, Mohamed MA, Cooper C. Epidemiology of osteoporosis. Rheum Dis Clin North Am 2006;32:617-29.