Delirium After Surgery for Proximal Femoral Fractures in the Frail Elderly Patient: Risk Factors and Clinical Outcomes

E de Haan[1, 2], V.A.J.I.M. Rijckevorsel[1], P. Bod[1], G.R Roukema[1], L. de Jong[1]

[1]Maasstad Ziekenhuis, Rotterdam, Chirurgie
[2]Franciscus Gasthuis & Vlietland, SCHIEDAM, Chirurgie

Introduction

The primary aim of this study was to identify risk factors for delirium after hip fracture surgery. The secondary purpose of this study was to verify peri-operative clinical outcomes, adverse events and mortality rates in delirium patients after hip fracture surgery.

Method

A prospective hip fracture database was used to obtain data. In total, 2051 patients older than 70 years undergoing a hip fracture surgery between 01-01-2018 and 01-01-2021 were included. A delirium during admission was diagnosed by a geriatrician based on the DSM-V criteria.

Results

Multivariable analysis showed that male gender (OR1.99 p<0.001), age (OR1.06 p<0.001), dementia (OR1.66 p0.001), Parkinson's disease (OR2.32 p0.001), ?haemoglobin loss (OR1.19 p0.022), pneumonia (OR3.86 p<0.001), urinary tract infection (OR1.97 p0.001) and wound infection (OR3.02 p0.007) were significant independent prognostic risk factors for the development of a delirium after hip surgery. The incidence of a delirium was 16%. The 30-day mortality was 16% with delirium and 6% with no delirium.

Conclusion

Significant independent prognostic factors associated with delirium after hip surgery were male gender, age, dementia, Parkinson's disease, ?haemoglobin loss, pneumonia, urinary tract infection and wound infection.

Table 4

Multivariable Analysis of Factors Associated with Delirium (n = 2.012)

Factor	OR	95% CI	p-value
Male gender	1.99	(1.51–2.63)	**<0.001**
Age (years)	1.06	(1.04–1.08)	**<0.001**
Dementia	1.66	(1.24–2.23)	**0.001**
Parkinson's disease	2.32	(1.42–3.80)	**0.001**
GTU ward	4.44	(1.77–11.17)	**0.002**
CCI	1.09	(0.95–1.24)	0.221
Interaction GTU and CCI	0.86	(0.73–1.02)	0.083
ΔHb loss (mmol/l)	1.19	(1.03–1.38)	**0.022**
Pneumonia	3.86	(2.70–5.51)	**<0.001**
UTI	1.97	(1.33–2.90)	**0.001**
Wound infection	3.02	(1.36–6.75)	**0.007**

Notes: Values in bold are significant (P<0.05). Fixed for: CCI, type of admission ward. For continuous variables, the odds ratio per one unit increase is shown.

Abbreviations: GTU, geriatric trauma unit; CCI, Charlson Comorbidity Index; Hb, hemoglobin; UTI, urinary tract infection.

Multivariable Analysis of Factors Associated with Delirium
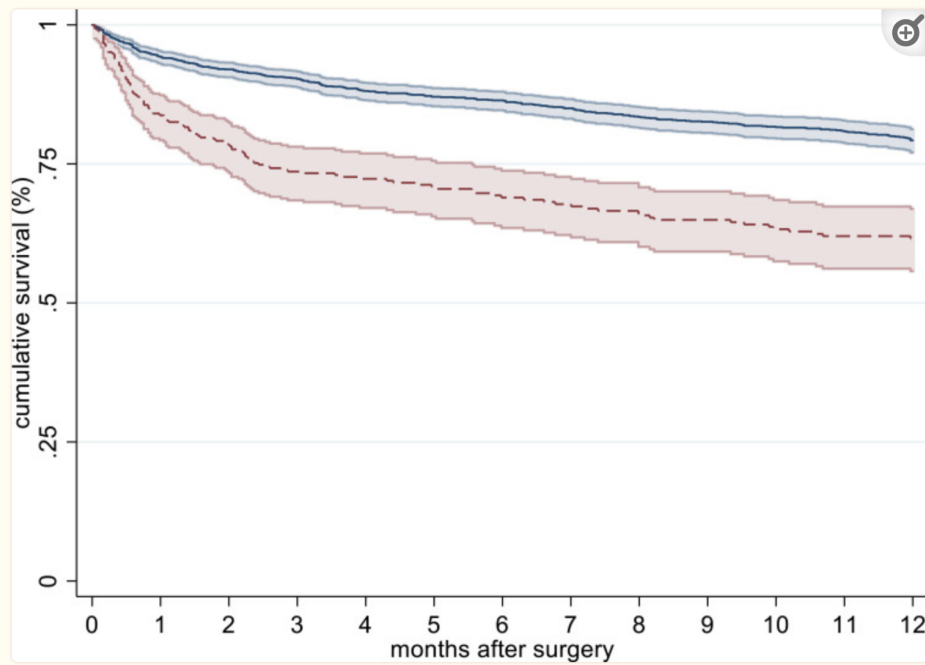
Figure 3

Kaplan–Meier curve of mortality rates in patients with and without delirium during 1-year follow-up.

Note: Patients with no delirium = blue, patients with delirium = red.

Kaplan–Meier curve of mortality rates in patients with and without delirium during 1-year follow-up.