

HIP FRACTURE

THE CUMULATED AMBULATION SCORE AS A PREDICTOR OF MORTALITY OR READMISSION IN PATIENTS WITH HIP FRACTURE

BACKGROUND

Poor functional status at discharge have been associated with increased mortality and readmission in patients with hip fractures. The aim of this study was to investigate whether independent performance or inability to perform the tasks of the Cumulated Ambulation Score (CAS) can predict mortality and/or readmission after hip fracture.

METHODS

From June 2015 to May 2016, 245 consecutive patients >65 years with first-time hip fracture were admitted to the Department of Orthopedic Surgery at North Denmark Regional Hospital and were eligible for this observational study.

Exclusion criteria: residence outside the North Denmark Region, death during admission at the orthopedic ward or unattained CAS-information at discharge.

Functional status, (1) getting in and out of bed, (2) rising from a chair and (3) walking, was assessed at discharge using CAS. Possible scores for each task are: unable (CAS=0), supported (CAS=1) or independent (CAS=2).

Outcome: mortality within 30 and 180 days after discharge and readmission within 30 days after discharge.

RESULTS

Table 1: Patient characteristics. Values are presented as median (IQR) or as number of patients (%). N = 220

Gender, n(%)	
Female	166 (75.5)
Male	54 (24.5)
Age, n(%)	
≤85	120 (54.5)
≥85	100 (45.5)
Median (IQR)	85 (78-89)
Charlson Comorbidity Index (CCI), n(%)	
CCI = 0	46 (20.9)
CCI > 0	174 (79.1)
Time to surgery, n(%)	
≤48 hours	192 (87.3)
>48 hours	28 (12.7)
Pre-fracture functional status, n(%)	
Independent (CAS = 6)	198 (90.0)
Not independent (CAS <6)	22 (10.0)
In and out of bed at discharge, n(%)	
CAS 0	14 (6.4)
CAS 1	125 (56.8)
CAS 2	81 (36.8)
Rise from a chair at discharge, n(%)	
CAS 0	17 (7.7)
CAS 1	94 (42.7)
CAS 2	109 (49.6)
Walking at discharge, n(%)	
CAS 0	39 (17.7)
CAS 1	86 (39.1)
CAS 2	95 (43.2)

CAS 0 = Unable to perform the task, CAS 1 = able to perform the task with physical or verbal support, CAS 2 = independent performance of the task

The 30- and 180-day mortality rates were 5% (n = 11) and 16% (n = 36) respectively. The 30 day readmission rate was 8% (n = 19).

Crude estimates for 30 day mortality. Estimates are presented with odds ratios and 95% CI. (N = 220)



OR 6.75 (1.57 – 29.04), p = 0.01



OR 8.62 (2.23 – 33.25), p < 0.01



OR 9.68 (2.68 – 34.98), p < 0.01

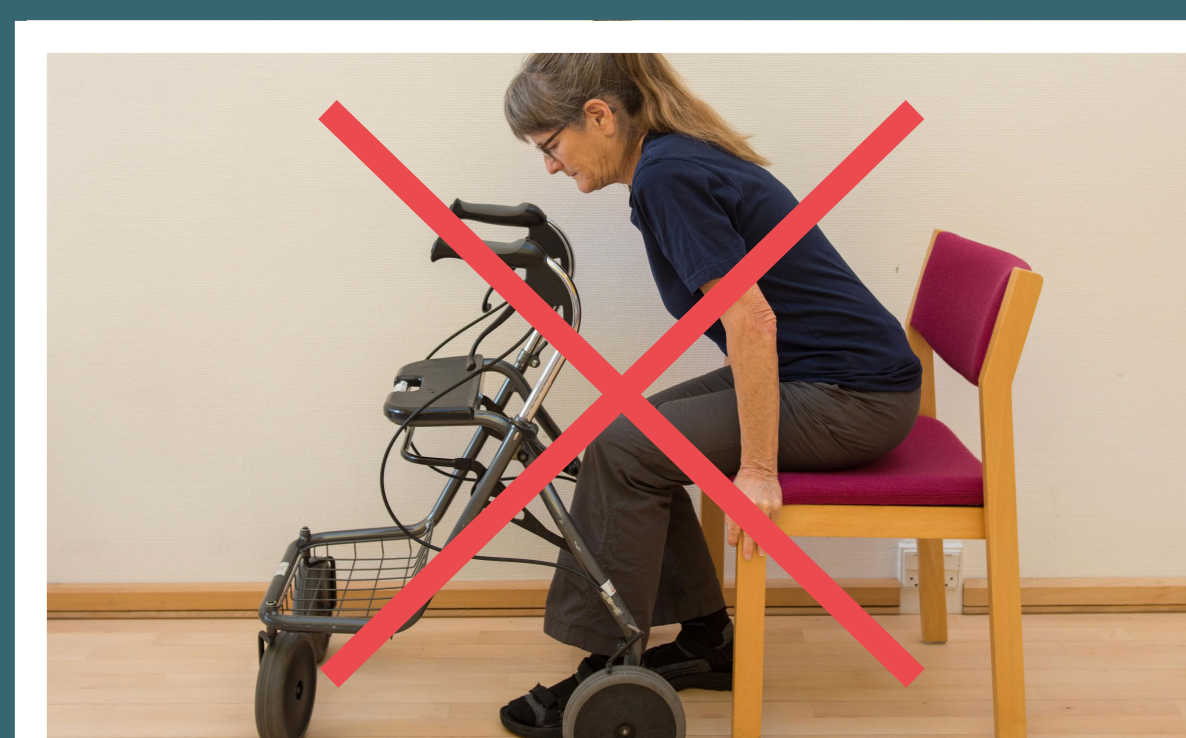
Patients performing the tasks of CAS independently at discharge did not die within 30 days after discharge.

Adjusted estimates for 180 day mortality. Estimates are presented with odds ratios and 95% CI. (N = 220)



OR 3.51 (1.10 – 11.21), p = 0.03

AGE > 85 OR 3.03 (1.39 – 6.59), p < 0.01



OR 3.09 (1.03 – 9.20), p = 0.04

AGE > 85 OR 2.72 (1.23 – 6.02), p = 0.01



OR 3.58 (1.52 – 8.44), p < 0.01

AGE > 85 OR 2.64 (1.19 – 5.90), p = 0.02

No significant associations between functional status at discharge and 30-day readmission were found.

CONCLUSION

Inability to perform the separate tasks of CAS at discharge predicts mortality in patients with hip fractures.

Age >85 predicts 180-days mortality regardless of functional status at discharge. Functional status at discharge does not predict 30-days readmission.