

Development of prognostic model to predict the post-operative mobility of patient with fragility hip fracture

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Method

Predictors

- **Socio-demographic data**

Age Gender Premorbid residence

- **Surgical factors**

Type of hip fracture
Type of surgery
Type of anaesthesia
ASA category
Waiting time from admission to surgery

- **Clinical factors**

Previous hip fracture
Charlson Comorbidity Index (CCI)
Functional Comorbidity Index (FCI)

- **Functional factors**

Modified Barthel Index (MBI)
Pre-fracture mobility
Diagnosis of dementia
Baseline Mini Mental Status Examination (MMSE)
Functional Prognosis Prediction Score (FPPS)

- **Laboratory Findings**

Baseline Hb, Na, K & Albumin

Multivariable
Logistic
Regression

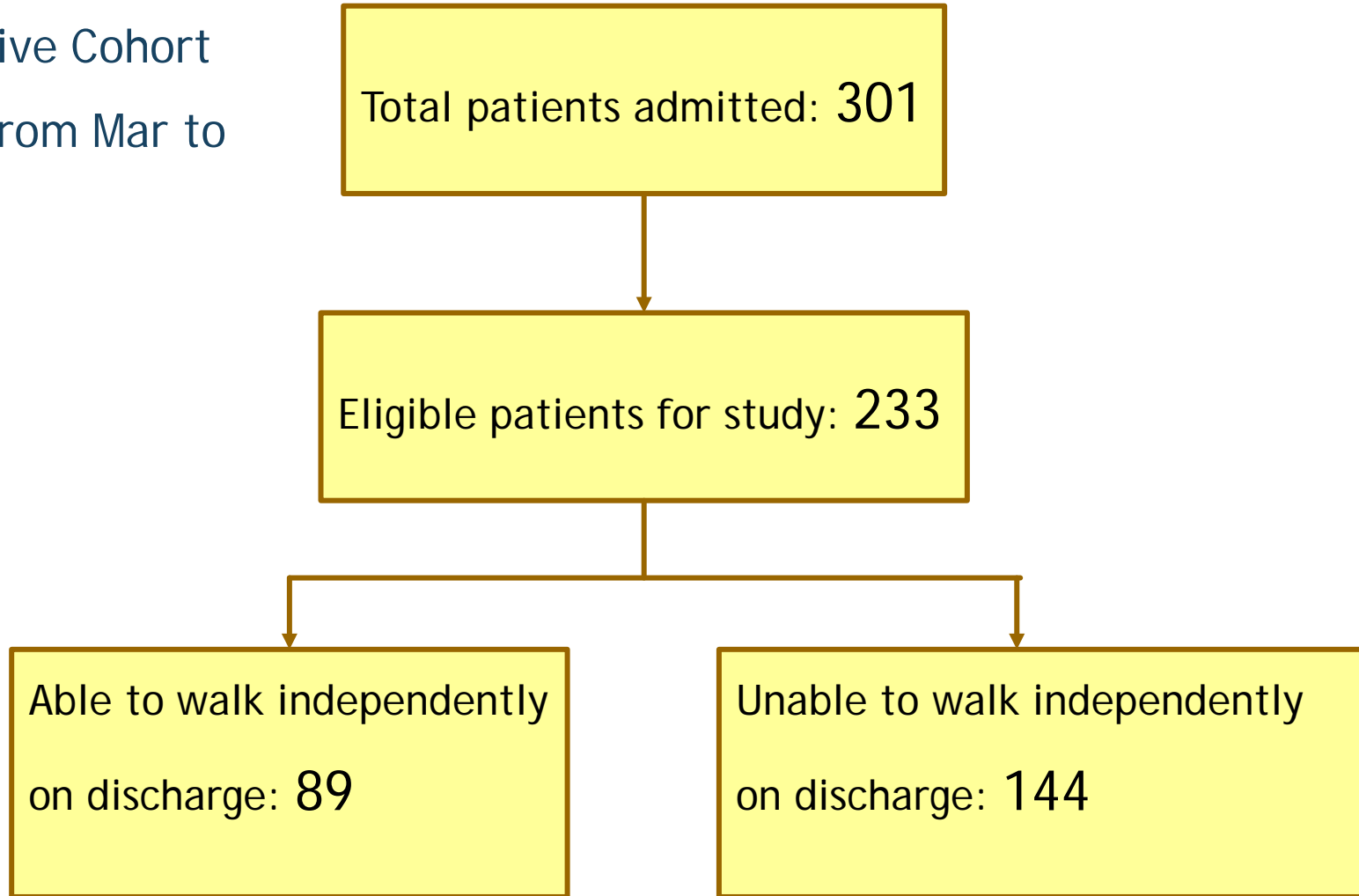
Outcome

- Able / Unable to walk independently on discharge

Prognostic Model

Subject

- Retrospective Cohort
- Admitted from Mar to Jul 2016



Result

Characteristic	Crude OR (95% CI)	Adjusted OR (95% CI)*	p-value
Age	0.90 (0.86 - 0.93)	0.93 (0.89 - 0.98)	0.004
MMSE	1.19 (1.13 - 1.26)	1.15 (1.08 - 1.22)	< 0.001
CCI	0.62 (0.51 - 0.76)	0.67 (0.53 - 0.84)	< 0.001
Pre-fracture mobility			
• Unaided walker (Reference)			0.012
• Stick walker	0.53 (0.29 - 0.98)	0.57 (0.28 - 1.17)	0.126
• Quadripod walker	0.26 (0.07 - 0.99)	0.28 (0.06 - 1.20)	0.086
• Frame walker	0.09 (0.03 - 0.32)	0.12 (0.03 - 0.50)	0.004
Constant		234.47	0.021

OR - Odd ratio CI - Confidence Interval MMSE - Mini-Mental Status Examination CCI - Charlson Comorbidity Index

* Odd ratio < 1 indicated that increase in this characteristic (e.g. older, more comorbidity) would be less likely to walk independently on discharge

Way Forward -

Discharge Ambulatory Status Prediction Score (DASPS)

AGE	Score	MMSE	Score	Pre-fracture Mobility	Score	CCI
65-69	1	25-30	0	Unaided	0	1 / point
70-74	2	24-19	2	Stick	1	
75-79	3	18-13	4	Quadripod	2	
80-84	4	12-7	6	Frame	4	
84-89	5	6-1	8			
90-94	6					
94-99+	7					

Total Score	Predicted probability of walking independently
>18	<10%
16-17	20%
14-15	30%
13	40%
12	50%
11	60%
10	70%
8-9	80%
6-7	90%
4-5	>90%