Clinical Frailty Scale Predicts Discharge Disposition following Total Joint Arthroplasty

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INTRODUCTION:

Consideration of frailty is important in the preoperative optimization of patients. The clinical frailty scale (CFS) objectively standardizes the clinical assessment of frailty. This study aimed to investigate the relationship between frailty and recovery or need for admission to an inpatient rehabilitation unit following elective total hip arthroplasty (THA) and/or total knee arthroplasty (TKA).

METHODS:

Clinical frailty scales (CFS) were prospectively collected for all patients who had undergone TKA and/or THA at a single institution from February 2019 to February 2020. Patient demographic data was collected and CFS was calculated and cross reference to; length of stay, patient-reported outcome measures (PROMS), and need for inpatient physical rehabilitation.

RESULTS:

There was a total of 374 TKA and 294 THA, with 366 patients being females and 300 males. For TKA patients, 0/87 (0%) with CFS <3 underwent admission to inpatient rehabilitation unit in comparison to 39/287 (13.5%) of those with CFS >3 (p value < 0.05). For THA patients, 7/158 (4%) with CFS <3 underwent admission to an inpatient rehabilitation unit compared to 27/136 (20%) (p value < 0.05). Overall, each incremental increase in CFS was associated with a 27% higher chance of requiring admission to an inpatient rehabilitation unit (p value < 0.05). An incremental increase in CFS was associated in an increased in LOS by 1.4 days (p value < 0.05). PROMS for both THA and TKA were inversely related to CFS with a 1-point increase in CFS resulting in a 2-point decrease in oxford-12 score at 6 weeks (p value < 0.05).

DISCUSSION AND CONCLUSION:

The Clinical Frailty Score is a strong predictor of length of stay and need for admission to an inpatient rehabilitation unit. CFS is inversely related to PROMS. We believe that CFS should be utilized as part of the preoperative assessment of elective THA and TKA.

Hip

	CFS =3 (n=157)	CFS >3 (n=137)
Age	60.1 ± 12.6 (n=157)	69.3 ± 12.9 (n=137)
LOS	3.8 ± 2.0 (n=157)	5.8 ± 4.2 (n=137)
EQ5D 5L Vas 6/52	77.5 ± 20.6 (n=121)	73.2 ± 22.0 (n=96)
EQ5D 5L Vas 1yr	75.7 ± 40.7 (n=9)	72.3 ± 25.5 (n=11)
Forgotten joint Score 6/52	42.6 ± 30.8 (n=124)	46.6 ± 29.6 (n=98)
Forgotten joint Score 1yr	75.1 ± 37.3 (n=8)	52.5 ± 37.5 (n=11)
HOOS 6/52	70.8 ± 20.3 (n=123)	71.4 ± 19.9 (n= 99)
HOOS 1 yr.	95.1 ± 29.6 (n=9)	70.7 ± 30.0 (n-12)
Oxford 12 6/52	32.4 ± 9.7 (n=124)	32.5 ± 8.9 (n=97)
Oxford 12 1 yr	46.7 ± 14.2 (n=9)	36.5 ± 10.9 (n= 12)
Rehabilitation (%)	9/157 (5.7%)	30/137 (21.9%)
Complication (%)	10/157 (6.4%)	19/137 (13.9%)

Knee

	CFS =3 (n=75)	CFS >3 (n=251)
Age	62.3 ± 7.3 (n=75)	69 ± 10 (n=251)
LOS	3.7 ± 1.4 (n=75)	5.2 ± 3.4 (n=251)
EQ5D 5L Vas 6/52	74.9± 19.7 (n=62)	68.7 ± 21.7 (n=212)
EQ5D 5L Vas 1yr	76.4 ± 18.9 (n=18)	64.4 ± 22.8 (n=27)
Forgotten joint Score 6/52	31.2 ± 26.6 (n=62)	31.6 ± 26.4 (n=212)
Forgotten joint Score 1yr	51.3 ± 29.7 (n=18)	37.1 ± 28.6 (n=27)
KOOS 6/52	61.2 ± 18.5 (n=63)	59.4 ± 18.9 (n=211)
KOOS 1 yr.	75.9 ± 16.6 (n=18)	62.0 ± 22.7 (n=27)
Oxford 12 6/52	29.2 ± 8.2 (n=63)	27.4 +/- 9.1 (n=212)
Oxford 12 1 yr	40.1 ± 4.6 (n=18)	31.4 ± 10.3 (n=27)
Rehabilitation (%)	0/75 (0%)	39/251 (15.5%)
Complication (%)	3/75 (4%)	24/251 (9.6%)