PREOPERATIVE FRAILTY AND OUTCOME AFTER ELECTIVE SURGERY IN ELDERLY PATIENTS

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BACKGROUND AND GOAL OF STUDY

Frailty is characterized by increased vulnerability to external stressors and it is a significant predictor of adverse outcomes.

Our study aimed to determine the incidence of frailty and clinical outcome in surgical elderly patients.

MATERIAL AND METHODS

Observational prospective study

Inclusion Criteria: Patients aged > 60 years, submitted to elective surgery from May to July 2017 were included.

Exclusion criteria: age < 60 years old; inability to give informed consent; patients admitted in the ICU after surgery

Clinical Frailty Scale (CFS)

- Evaluated before surgery (T0) and 3 months after surgery (T90).
- Vulnerability if score ≥ 5**

Health-related Quality of Life (Euro QOL 5 dimensions - EQ5D)

- Evaluated **Quality of life (QOL)** at T0 and T90

Montreal Cognitive Assessment (MOCA):

- Preoperative psychological status was evaluated to assess mild cognitive impairment.
- Mild cognitive impairment (MCI) when MOCA <26**

WHODAS (WHO Disability Assessment Schedule) and the

- Evaluated before surgery (T0), 30 days (T30) and 3 months (T90) after surgery.
- Disability: considered to be present when the score WHODAS was $\geq 25\%$**

Lawton Instrumental Activity of daily living scale (IADL):

- Dependency: if at least one activity was affected on IADL.**

Charlson Comorbidity Index:

- To quantify the burden of mortality.

Surgical Apgar Score (SAS):

- To evaluate the risk of post-operative major complications.

Statistical analysis: The Chi-square, Fisher's exact or Mann-Whitney U tests were used for comparisons.

RESULTS AND DISCUSSION

Total of included patients: **235**
23% with preoperative frailty

Table 1 – Demographic and perioperative outcomes.

Variable		FP (n=53)	Not FP (n=182)	p value
Gender	Male	24 (45%)	84 (46%)	0.519 ^b
	Female	29 (55%)	98 (54%)	
Type of Anaesthesia	General	30 (57%)	109 (60%)	0.646 ^a
	Regional	13 (25%)	40 (22%)	
	Combined	6 (11%)	26 (14%)	
	Sedation/Analgesia	4 (7%)	7 (4%)	
Chronic kidney disease		13 (25%)	7 (4%)	<0.001 ^a
Congestive heart failure		9 (17%)	9 (5%)	0.004 ^a
Arterial hypertension		41 (77%)	109 (60%)	0.023 ^b
Diabetes mellitus		26 (49%)	34 (19%)	<0.001 ^a
B-blockers use		22 (42%)	32 (18%)	<0.001 ^a
Oral hypoglycaemic agents use		19 (36%)	31 (17%)	0.003 ^a
Statins use		35 (66%)	83 (46%)	0.008 ^a
Aspirin use		18 (34%)	31 (17%)	0.007 ^a
MCI		50 (94%)	126 (69%)	<0.001 ^a

Table 2 - Disability by WHODAS – median values.

Disability	FP (n=53)	Not FP (n=182)	p Value
T0, median [P25- P75]	23 [13.5-30]	4 [1-10]	0.009 ^c
T30, median [P25- P75]	21.5 [14.25-29.75]	8.0 [3-15]	<0.001 ^c
T90, median [P25- P75]	22.5 [12-31]	5.0 [1-12]	<0.001 ^c

Table 3 - Pre and postoperative health status comparison by EQ-D5.

EQ-5D		FP (n=53)	Not FP (n=182)	p value
Mobility	T0	51 (96%)	72 (40%)	< 0.001 ^a
	T90	45 (85%)	79 (43%)	
Self-care	T0	45 (85%)	35 (19%)	
	T90	44 (83%)	50 (27%)	
Usual Activities	T0	49 (92%)	55 (30%)	
	T90	48 (91%)	76 (42%)	
Pain	T0	49 (92%)	77 (42%)	
	T90	40 (75%)	78 (43%)	
Anxiety	T0	50 (94%)	123 (68%)	
	T90	43 (81%)	95 (52%)	

Table 2 –Risk of post-operative major complications by SAS.

SAS	FP (n=53)	Not FP (n=182)	p value
Median, [P25- P75]	13 [12 - 14.4]	15 [13 - 16]	0.002 ^a

Table 4 – Preoperative dependency by IALD

Dependency	FP (n=53)	Not FP(n=182)	p value
Median, [P25- P75]	3.0 [2-0-5.0]	8.0 [7.0- 8.0]	<0.001 ^c

Legend: ^a –Chi-squared test; ^b –Fisher test; ^c –Mann-Whitney test, **FP** –frailty patients, **Not DP**- not fraity patients; **MCI** – Mild Cognitive Impairment; **SAS**- surgical apgar score; **WHODAS** – World Health Organization Disability Assessment Schedule; **EQ 5D**- Euro quality of life 5 dimensions; **MOCA**- Montreal Cognitive Assessment; **T0**- before surgery; **T1**- 24h after surgery; **T30**- 1 month after surgery; **T90**- 3months after surgery

CONCLUSIONS

Frailty is common among old patients. Our study identified FP as having more comorbidities and more dependency, worse health status prior surgery, more frequently MCI and higher risk of post-operative major complications. FP had also poorer quality of life at 3 months follow-up.