POCD HEART-BRAIN COMPLICATIONS: A NEUROPSYCHOLOGICAL AND PSYCHOLOGICAL ASSESSMENT OF COGNITIVE DEFICITS FOLLOWING CARDIO-SURGERY PRIN 2022 (cod. 2022PEK8YY)

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Background

Postoperative Cognitive Dysfunction (POCD) affects approximately 50-67% of patients shortly after cardiac surgery. POCD is characterized by impairments in cognitive functions (Vedel et al., 2019). Its etiology is multifactorial, involving cerebral emboli, hypoperfusion, and inflammation. Early detection through neuropsychological assessment is crucial but still under-researched (Glumac et al., 2021). The Enhanced Recovery After Surgery (ERAS) guidelines (Evered et al., 2018) recommend applying diagnostic tools used in neurocognitive disorder research to detect postoperative cognitive changes.

Aim

This project aimed to design and implement a neuropsychological assessment for early POCD detection following cardiac surgery.

Methods

SUBJECTS

45 cardiac surgery patients (36 males, 9 females; mean age = 59.5; SD = 12; mean education = 17 years; SD = 5.6), recruited from IRCCS San Raffaele in Rome.

TEST

- A standard neuropsychological protocol used for the assessment of behavioural and cognitive performance in neurological patients was adapted for the early diagnosis of POCD in patients following cardiac surgery.
- A psychological evaluation was carried out (DASS-21, ERQ and SF-12).

ANALISYS

Using SPSS software:

- **descriptive statistics** of cognitive profile
- **correlations** between cognitive profile and clinical data, also with the Severity Index (SI) covariate, based on number of heart bypasses, presence of hypertension and time since surgery
- **correlations** between psychological symptoms and neuropsychological outcomes

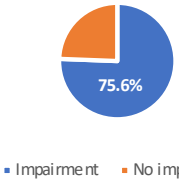
Conclusions

Results highlight a cognitive pattern of deficits in memory, attention and Executive Functions in postoperative cardiac patients. Findings suggest hypertension and valve replacement involving heart bypass may contribute to cognitive decline. Results confirm that hypertension is a risk factor for cognitive dysfunction. Psychological aspects play an important role in these patients.

Results

- **Descriptive statistics:**

Digit Span Backward



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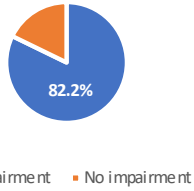

- **Correlations:**

CLINICAL DATA	COGNITIVE TEST	
	Symbol Digit Modalities Test	**Clock Drawing Test**
Hypertension	p = .033 Pearson =.319*	
Valve + bypass		p = .007 Pearson = .400**

PSYCHOLOGICAL TEST	COGNITIVE TEST	
	Rey's Immediate Recall	**Semantic fluency**
SF-12 Mental Component Summary (MCS)	p = .047 Pearson = .713*	p = .009 Pearson = .840**
DASS-21 depression score	p = 0.022 Pearson = -.345*	p = 0.036 Pearson = - .316*
DASS-21 anxiety score		p = 0.031 Pearson = - .326*
DASS-21 total score		p = 0.033 Pearson = - .322*