International validation of the Phone Outcome Questionnaire for patients with Disorders of Consciousness

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Introduction

No specific outcome scale for patients with disorders of consciousness (DOC)

1.Diagnosis of DOC :

Coma Recovery Scale – Revised (CRS-R)[1] :

Coma	UWS	MCS	Emergence from MCS
• No eye opening • Reflex behavior	• Eye opening • Reflex behavior	• Eye opening • Non reflex behavior	• Functional communication • Functional use of objects

2.Comparison between the :

- Glasgow Outcome Scale – Extended (GOS-E)[3] [3]
- Phone Outcome Questionnaire (POQ)
  - Based on CRS-R items
  - Measures the presence and frequency of purposeful behaviors

Methods

1. **International multicentric study involving 5 centers.**
2. **Questionnaire translated from English to French, Spanish & Italian.**
3. **2 blind examiners :**
   - experts in CRS-R testing
   - in every center

Within one week:

Examiner A :

Phone interview with patient main caregiver :
- Socio-demographical data
- POQ
- GOS-E

Examiner B :

At least 5x CRS-R

AUDITORY FUNCTION SCALE
4 - Consistent Movement to Command *
3 - Reproducible Movement to Command *
2 - Localization to Sound
1 - Auditory Startle
0 - None
VISUAL FUNCTION SCALE
5 - Object Recognition *
4 - Object Localization: Reaching *
3 - Visual Pursuit *
2 - Fixation *
1 - Visual Startle
0 - None
MOTOR FUNCTION SCALE
6 - Functional Object Use *
5 - Automatic Motor Response *
4 - Object Manipulation *
3 - Localization to Noxious Stimulation *
2 - Flexion Withdrawal
1 - Abnormal Posturing
0 - None/Flaccid
OROMOTOR/VERBAL FUNCTION SCALE
3 - Intelligible Verbalization *
2 - Vocalization/Oral Movement
1 - Oral Reflexive Movement
0 - None
COMMUNICATION SCALE
2 - Functional: Accurate *
1 - Non-Functional: Intentional *
0 - None
AROUSAL SCALE
3 - Attention
2 - Eye Opening w/o Stimulation
1 - Eye Opening with Stimulation
0 - Unarousable
TOTAL SCORE

Best CRS-R diagnosis retained

Results

92 DOC patients: 37 UWS, 27 MCS-, 17 MCS+, 11 EMCS ; 31 females; 47± 17years old; Onset (median) : 10,43months; TBI=30.
92 relatives : 67 females, 49± 15 years old ; Visit every day = 59; ≥ University level = 25.

Diagnosis comparison between :

1. POQ and the best CRS-R

		Best CRS-R diagnosis			Total
		UWS/VS	MCS	EMCS	
POQ diagnosis	UWS/VS	13	3	0	16
	MCS	24	38	0	62
	EMCS	0	3	11	14
Total		37	44	11	92

% of agreement : 67 % ; Weighted k= 0,514 p≤0.01

2. POQ and GOS-E :

% of agreement : 89%
k = 0,776 p≤0.01

3. GOS-E and best CRS-R results :

% of agreement : 75%
k= 0,459 p≤0.01

Excellent agreement : POQ & GOS-E
Moderate agreement : CRS-R & POQ; CRS-R & GOS-E

Conclusion

1. POQ **better differentiates DOC diagnostic entities** compared to the GOS-E.

2. **Families tend to see more complex behaviors** compared to clinicians.

3. POQ can be recommended as a **baseline scale** for outcome assessment for DOC patients.

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