Clinical Management of Confusion

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Assessment of PTCS

- Confusion Assessment Protocol
- Authors: Mark Sherer, Risa Nakase-Richardson, Stuart Yablon
- Key reference: Sherer M, Nakase-Thompson R, Yablon SA, Gontkowsky ST. Multidimensional assessment of acute confusion after traumatic brain injury. Arch Phys Med Rehabil 2005;86:896-904.
- Type of scale: Behavioral rating, cognitive tests
- Target population: Responsive patients in early recovery from TBI
- Availability: http://www.tbims.org/combi/cap/index.html

Confusion Assessment Protocol

- Assesses 7 key signs of confusion commonly seen in patients in early recovery from TBI
- Provides diagnostic criteria for confused vs. not confused
- Includes performance measures in additional to behavioral ratings
- Variable time to administer, usually around 30 minutes

CAP Scales

- Disorientation – Galveston Orientation and Amnesia Test
- Cognitive impairment – items from Toronto Test of Acute Recovery from TBI, Cognitive Test of Delirium
- Fluctuation of presentation – Delirium Rating Scale – Revised (DRS-R)
- Restlessness – Agitated Behavior Scale
- Nighttime sleep disturbance – Adapted from DRS-R
- Decreased daytime arousal – Adapted from DRS-R
- Psychotic-type symptoms – DRS-R

CAP Interpretation

- Signs of confusion are scored as present or absent
- More signs = more severe confusion
- Persons with 4 signs are classified as confused
- Persons with 3 signs are classified as confused if one of the signs is disorientation

CAP Administration Tips

- Make sure the patient is awake
- Make sure you know triggers that cause agitation that can escalate to aggression
- For behavioral ratings, obtain information from nurses, therapists, and family/close others in addition to your own observations
- Assess at different times of the day with 3 or more assessments per week

CAP Development (Sherer et al., 2005)

- 98 consecutive rehabilitation admissions with moderate or severe TBI
- 6 excluded due to vegetative or minimally conscious
- 30 excluded due to incomplete data

Analysis

- Participant responses to each item from each scale were examined by 2 clinicians for clinical relevance and relationship to diagnosis of delirium
- Items that did not appear relevant were eliminated
- Items that appeared redundant were eliminated
- Based on this item analysis and previous research, 7 key symptoms of post-traumatic confusion were identified
- Items were selected to measure each symptom
- Scoring criteria were developed based on clinical judgment and discrimination of patients meeting DSM-IV criteria for delirium from patients not meeting criteria

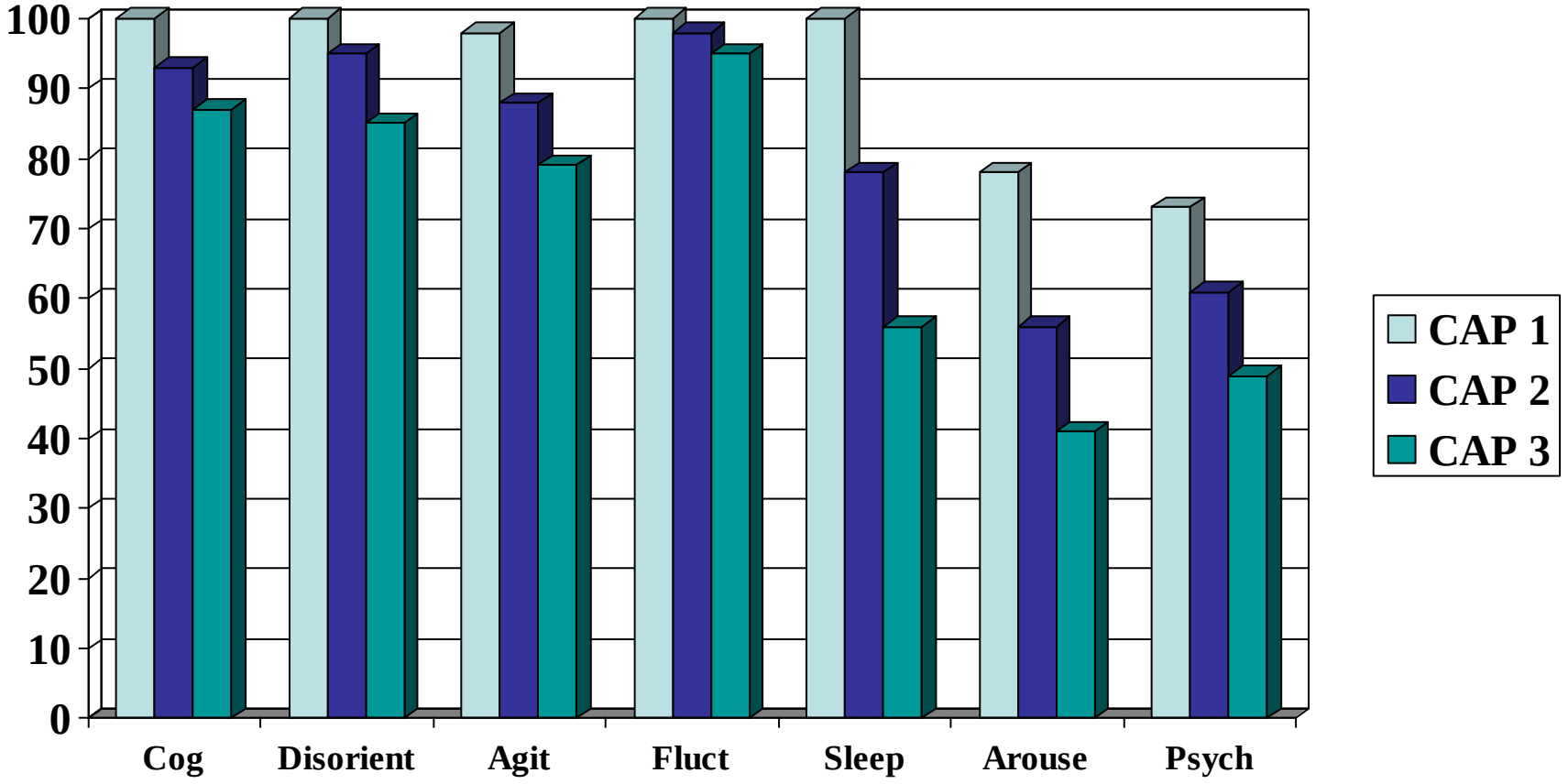
Findings

- 44 participants met criteria for post-traumatic confusion
- 40 participants met criteria for delirium
- 38 of 44 (86%) of confused participants were in delirium
- 38 of 40 (95%) of delirious participants were confused

Change in Confusion Severity Across Evaluations, Sherer et al., 2009

		CAP 1 to 2	CAP 2 to 3
Severe:	Improved	49%	50%
(n=41)	Same	46%	38%
	Worse	5%	12%
Moderate:	Improved	63%	56%
(n=28)	Same	26%	36%
	Worse	11%	8%
Mild:	Improved	50%	25%
(n=38)	Same	36%	69%
	Worse	14%	6%

Resolution of Symptoms of Confusion – Severe Confusion



Confusion Severity and Productivity Outcome (n = 132)

Predictor	Comparison	Odds Ratio	p-value
Age	20.0, 43.9	0.39	0.02
Education	10.0, 13.0	1.65	0.09
GCS	5.0, 10.2	1.40	0.31
TFC	1.0, 11.5	0.71	0.18
CAPtotal	2.0, 5.0	0.50	0.03

Confusion Symptoms Findings and Employment Outcome

	Contrast	Odds Ratio	P-value
Cognition	No : Yes	4.54	0.001
Disorient	No : Yes	3.12	0.004
Agitation	No : Yes	3.12	0.004
Fluctuation	No : Yes	3.33	0.003
Sleep dist	No : Yes	------	------
Arouse	No : Yes	------	------
Psychotic	No : Yes	14.28	0.001

Management of Confused Patients

- Behavioral techniques
- Staff education
- Family education
- Environmental management
- Restraints
- Medications

Behavior Management

- Frequent reorientation
- Manage level of stimulation
- Move
- Redirection
- Comforting stimuli (pictures, music, etc.)
- Alternate tasks
- Time of day
- Positive stimuli

Staff Education

- Physical management
- Redirection
- Tone of voice
- Physical posture
- Confident demeanor
- It is not personal

Family Education

- Consistency with the rehab team
- Reorient
- Avoid frequent questions
- Avoid inadvertent reinforcement
- Avoid over-stimulation
- Reassurance – “This will get better.”
- “It is not his fault, this is just one phase of recovery.”

Environmental Management

- Quiet room
- One-on-one
- Video camera
- Bed alarm
- Secured unit
- Private room
- Low bed position
- Conceal tubes