EDA/SDA/RCPE Delirium Teaching Day
4 September 2019

Delirium Association/Royal College of Physicians of Edinburgh
Joint Conference on Delirium
5 and 6 September 2019

ROYAL COLLEGE of PHYSICIANS of EDINBURGH

Poster 21

Universitätsspital Basel

Detecting Neurocognitive Impairment: A Comparison of Clinical Routine Data versus Structured Assessments

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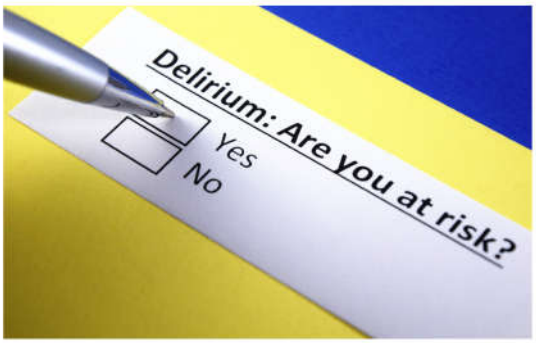
European Delirium Association Annual Meeting, Edinburgh, Scotland - September 5th-6th, 2019

Background and Aim

- Early detection of neurocognitive impairment and the distinction between dementia and delirium in older hospitalized patients may affect quality of life during and after hospitalization [1].
- The tool "Outcome-Oriented Nursing Assessment Acute Care" (ePA-AC®) is a standardized computer-based method for the evaluation of patient related care requirements [2].
- ePA-AC® generates "risk profiles", such as the "assessment requirement for confusion, delirium or dementia" (ACDD), by capturing early symptoms of neurocognitive disorders [2].
- The aim of this study is to verify the performance of ePA-AC® ACDD in detecting the presence of confusion, delirium or dementia compared to validated scales.



Methods

Design: Prospective single-centre cross-sectional study.

Study setting: Four medical and two surgical wards of a Swiss University Hospital.

Study population: Inpatients of all age groups.

Measurements: The measurements consisted of the application of the modified Confusion Assessment Method for the Emergency Department (mCAM-ED) [3] to screen and to assess delirium, the Clock Drawing Test [4] to screen for cognitive impairment and the Comprehension Test of Hart [5] to detect disorganized thinking. A one-day training session in the use of the tools was given to the research assistants (RA).

Data collection: Thirty-two RAs performed the assessments and were blinded to the nurses' ePA-AC® ratings. On the following day, the RAs conducted a chart review of the previous day to collect the nurses' ratings of ePA-AC®.

Results

- Out of 211 inpatients, 116 were included on the day of the study.
- The average age of the patients was 68.18 (±18.24) years.
- Among patients with confusion, delirium or dementia, 38% were correctly identified by ePA-AC® ACDD (sensitivity).
- Patients without confusion, delirium or dementia were correctly identified in 78% (specificity).
- ePA-AC® ACDD sensitivity for disorganized thinking was 0.57 and specificity was 0.72.
- ePA-AC® ACDD sensitivity for delirium was 0.50 and specificity was 0.71.
- ePA-AC® ACDD sensitivity for dementia was 0.35 and specificity was 0.80.

Table 1
Performance Results of ePA-AC® ACDD

	mCAM-ED	Disorganized thinking	Dementia
Sens (95% CI)	0.50 (0.16; 0.84)	0.57 (0.18; 0.90)	0.35 (0.23; 0.48)
Spec (95% CI)	0.71 (0.61; 0.79)	0.72 (0.62; 0.80)	0.80 (0.67; 0.90)
PPV (95% CI)	0.11 (0.03; 0.27)	0.12 (0.03; 0.27)	0.69 (0.50; 0.84)
NPV (95% CI)	0.95 (0.88; 0.99)	0.96 (0.89; 0.99)	0.50 (0.39; 0.61)
+ LR (95% CI)	1.71 (0.80; 3.63)	2.02 (0.99; 4.10)	1.78 (0.93; 3.41)
- LR (95% CI)	0.71 (0.35; 1.43)	0.60 (0.25; 1.42)	0.81 (0.65; 1.01)

Sens = sensitivity; Spec = specificity; CI = Confidence Interval; PPV = positive predictive value; NPV = negative predictive value; LR = Likelihood Ratio; mCAM-ED = modified Confusion Assessment Method for the Emergency Department

Conclusions

The results of this study showed that ePA-AC® ACDD neither is able to rule out nor rule in confusion, delirium or dementia, respectively, with good precision.

References:
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