EUROTEST´s Diagnostic Accuracy in General Neurologic Clinic

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Background

The EUROTEST is an easy, brief and useful test, based on the knowledge and handling of currency coins of legal course (Euros), that can be applied to illiterate subjects. The EUROTEST can be used without modifications in all the countries with the Euro monetary system. A preliminary study in a convenience population sample showed an good capacity of this test to identify subjects with dementia (Carnero C & Montoro MT. Rev Neurol 2004; 38:201-209).

Objetives

To evaluate the diagnostic accuracy of the EUROTEST to detect dementia in subjects attending a clinic of General Neurology in conditions of common clinical practice.
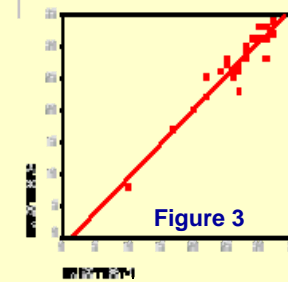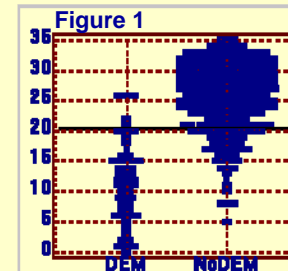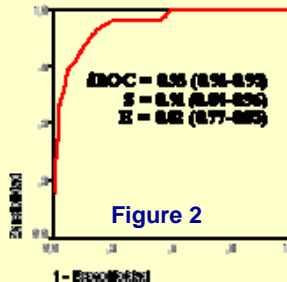
Design/Methods

Cross-sectional multicentric naturalistic study. The EUROTEST was systematically applied to consecutive patients aged >60 years who had an established diagnosis. The patients were classified as "Non Demented" (NoDEM) or "Demented" (DEM), according to DSM-IV criteria. We calculated sensitivity (Sn), specificity (Sp) and area under the ROC curves (AUC), with their corresponding 95% intervals. In a subsample of 29 ND subjects, we also calculated the test-retest reliability by means of the intraclass correlation coefficient (ICC).

Results

Sixteen neurologists selected a total of 516 subjects (380 NoDEM, 101 DEM and 35subjects who were excluded either because of incomplete data or violations to the protocol). Out of the 481 subjetcs, 38,7% were totally or functionally illiterate, and 45,5% lacked formal education (Table). The best cut-off point is 20/21, with a Sn=0.91 (0.84-0.96) and a Sp=0.82 (0.77-0.85) (Figure 1), and with a high diagnostic accuracy [AUC=0.93 (0.91-0.95)] (Figure 2). The time required the test administration is slightly greater in the DEM group that in the ND (9.2±2.6 versus 8.0±2.5 minutes, p<0.0001). The EUROTEST has an excellent test-retest reliability [CCI = 0.94 (0.87-0.97)] (Figure 3) .

Table	NoDEM	DEM	P
n	380	101	
Age (mean ±ds)	71.5±6.7	75.5±6.3	<0.001
Sex (♂/♀)	187/193	37/64	1.s
Illiterate (%)	3..5	42.6	0.05
No education (%)	44.2	42.6	1.s
EUROTEST			
Puntuación	25.5 (5.7)	11.5 (6.9)	<0.001
Duración (minutos)*	8.0 (2.5)	9.2 (2.6)	<0.001

*378 cases

Figure 1

Figure 2

$AROC = 0.55 (0.51-0.55)$
$S = 0.51 (0.54-0.56)$
$E = 0.52 (0.77-0.55)$

Figure 3

Conclusions

In this large sample of neurological patients with very low educational level, the EUROTEST shows a high diagnostic accuracy for dementia and a high test-retest reliability in conditions of common clinical practice. It has the advantage of being easy to administer, brief and psychometrically solid. Suited to be completed by illiterate subjects or those with a minimum educational level. In addition, the EUROTEST could be applied without changes to subjects speaking different languages from countries of the Euro monetary system. The EUROTEST is an good instrument for the detection of dementia

Trans-EUROTEST Group

Acknowledgment

Disclosure

None