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Translation and validation of a brief screening questionnaire of depressive disorders in patients with cancer : Q2i study

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Introduction

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- Depression is a sustainable state of deep sadness and abatement
- The depressive disorders are common in patients with cancer (prevalence 0%-58%)
- The depressive disorders secondary to cancer are often undervalued
- Depressive disorders can influence:
    - Compliance of treatment
    - Quality of life (pain perception, physical and social activity)
    - Survival

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- Diagnosis of major depressive episode :
  - Mini International Neuropsychiatric Interview (MINI): semi-structured interview, 120 items, realized by a psychiatrist.

    ⇒ Its widespread use is impracticable

- Other tools were developed:
  - Hamilton Rating Scale for Depression (HRSD, Hamilton , 1960) : hetero-questionnaire, 17 items
  - Center for Epidemiologic Studies Depression Scale (CESD,Radloff ,1977): self administered, 20 items
  - Primary Care Evaluation of Mental Disorders (PRIME-MD ,Robert,1994) : self administered, 27 items

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- Reduced PRIME-MD(Whooley 1997) :
  - 2 items questionnaire evaluating depression
  - Self administered

⇒ Objectif of Q2i study: Translation and validation of these 2 questions for evaluate depression in cancer

Methods: Translation phase

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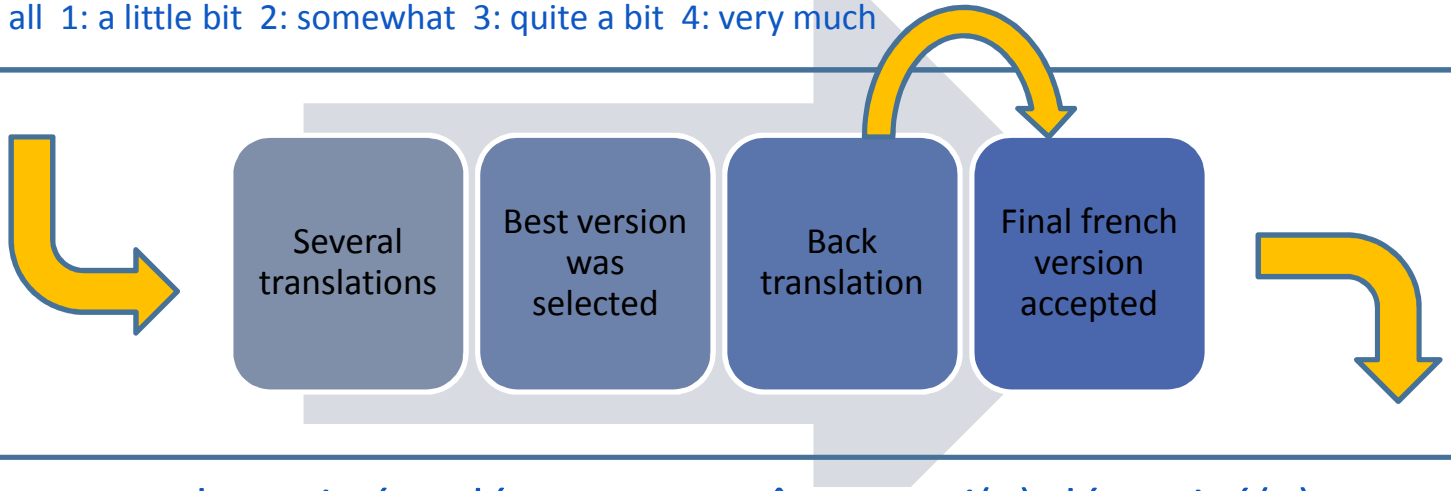
1. During the past month, have you often been bothered by little interest or pleasure in doing things?

2. During the past month, have you often been bothered by feeling down, depressed, or hopeless?

0:not at all 1: a little bit 2: somewhat 3: quite a bit 4: very much



1. Au cours du mois écoulé, vous vous êtes senti(e) démotivé(e), vous avez eu du mal à prendre plaisir à ce que vous faisiez ?

2. Au cours du mois écoulé, vous vous êtes senti(e) triste, déprimé(e) ou désespéré(e) ?

0:pas du tout 1: un peu 2: modérément 3: beaucoup 4: énormement

Methods: Validation phase

- Questionnaire used :
  - Q2i (translation of the reduced PRIME-MD)
  - Semi-structured interview M.I.N.I is the Gold Standard of our study
  - Self questionnaire CESD
  - QLQC-30 questionnaire assessed the physical and social consequences

Methods: Validation phase

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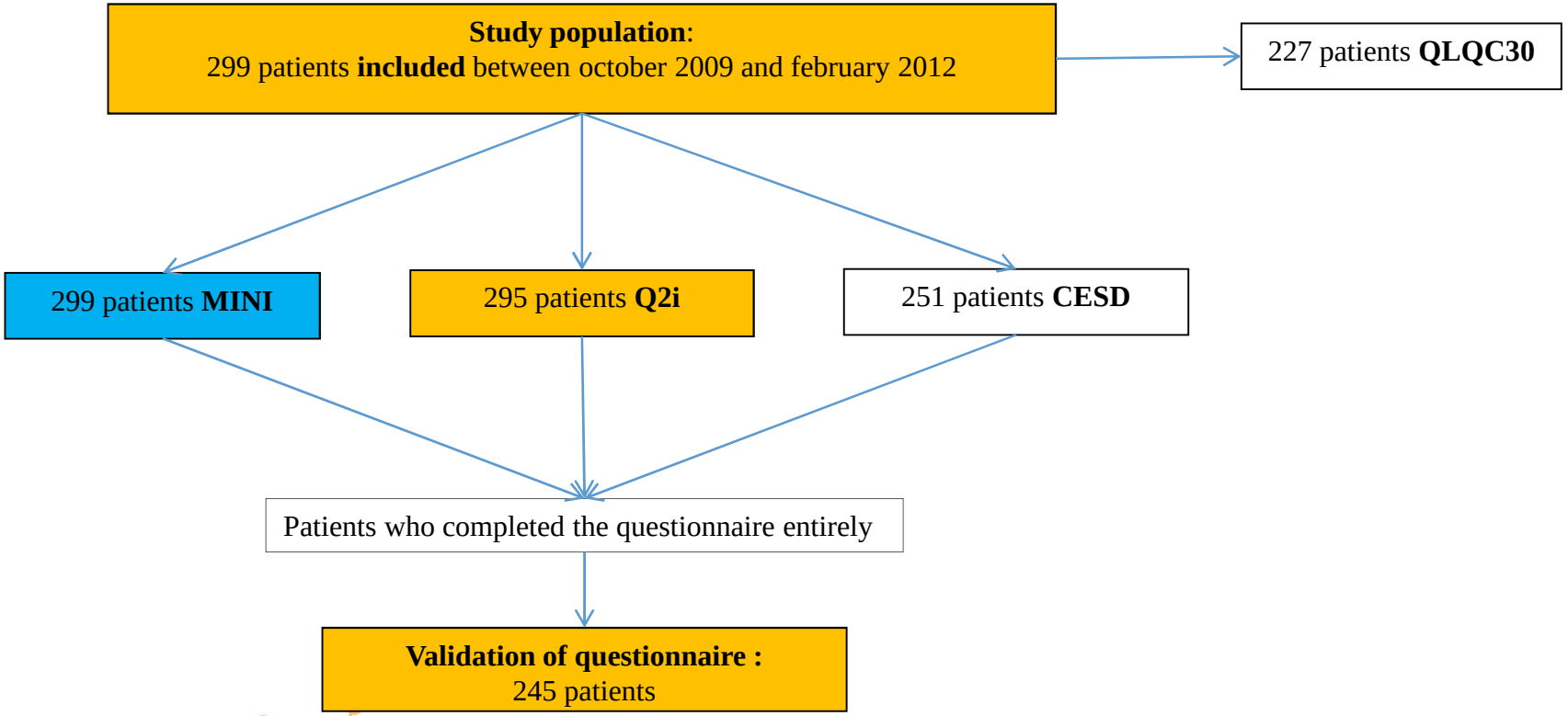
- Statistics analysis:
  - Internal consistency : Cronbach's alpha
  - Performance : Sensibility, Specificity, Likelihood ratio positive and negative, positive and negative predictive and Area Under ROC Curve were evaluated with 95% CI
  - External consistency: Coefficient of Spearman
  - Multiple imputations were used to confirm results
  - All analyses were performed using R 3.0.1 (package MICE, pROC, ROCR)

Results: Flow-chart



Results: patients' characteristics

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Variable	NA	Mean	Min-Max	SD
Age	0	56.5	[25.9-85.3]	12.4

Variable	Modality	N	%	NA
Gender				0(0%)
	Woman	**286**	**95.65%**	
	Man	13	4.35%	
Type of Cancer				0(0%)
	Breast	**275**	**91.97%**	
	Pancreas	24	8.03%	
Performance status				7(2%)
	0/1	**281**	**96.23%**	
	2/3	11	3.77%	

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Results: patients' characteristics

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Variable	Modality	N	%	NA
T				49(16%)
	0/1/2	**207**	**82,8%**	
	3/4	43	17,2%	
N				63(21%)
	0/1	**187**	**79.23**	
	2/3	49	20.77	
M				36(12%)
	No metastatic	**214**	**81.37%**	
	Metastatic	49	18.63%	
Type of Treatment				1(0%)
	Adjuvant/Neo-adjuvant	**227**	**76.17%**	
	Metastatic	71	23.83%	

Results: patients' characteristics

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Variable	Modality	N	%	NA
Relation with oncologist				21(7%)
	Excellent	**275**	**99%**	
	Sometimes difficult	3	1%	
Lack of information about my disease				0(0%)
	No	**292**	**97.66%**	
	Yes	7	2.34%	
Lack of information about my treatment				0(0%)
	No	**294**	**98.33%**	
	Yes	5	1.67%	
Antidepressant				7(2.34%)
	This is a treatment as other	91	31.16%	
	Opinion rather reserved	**141**	**48.29%**	
	Against antidepressants	60	20.55%	
Consultation with psychiatrist				5(1.6%)
	Yes	**231**	**78.60%**	
	No contribution	42	14.30%	
	No	21	7.10%	

Results

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Cronbach' alpha of Q2i

Variables	Mean	SD	Cronbach Q2i	Lower limit CI 95%	Upper limit CI 95%
Two questions in french	1.61	1.72	**0.75**	0.67	0.82

Q2i Diagnostic

	Estimate	0.95 Confidence limits
Sample size:	245	NA
Prevalence(%):	7.76	NA
Sensitivity(%):	**89.47**	[68.61 - 97.06]
Specificity(%):	**58.85**	[52.34 - 65.07]
Positive predictive value(%):	**15.45**	[9.88 - 23.36]
Negative predictive value(%):	**98.52**	[94.76 - 99.59]
Positive likelihood ratio:	**2.17**	[1.70 - 2.78]
Negative likelihood ratio:	**0.18**	[0.05 - 0.67]

		MINI	
		Non Depressed	Depressed
Q2i	Non Depressed	**133 (58.8%)**	2 (10.5%)
	Depressed	93 (41.2%)	**17 (89.5%)**

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Results

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Area Under ROC Curve 95% CI:
Q2i : 0,82 (0,80-0,89)
CESD : 0,91 (0,84-0,97)

Area Under ROC Curve 95% CI with multiple imputation:
Q2i : 0,83 (0,76-0,90)
CESD : 0,93 (0,88-0,98)

External consistency
Q2i-CESD: **r=0,64** (0,61-0,74)
Q2i –QLQ-C30 **r=0,1** (0,09-0,17)
Q2i –QLQ-C21-24 **r=0,2** (0,17-0,27)

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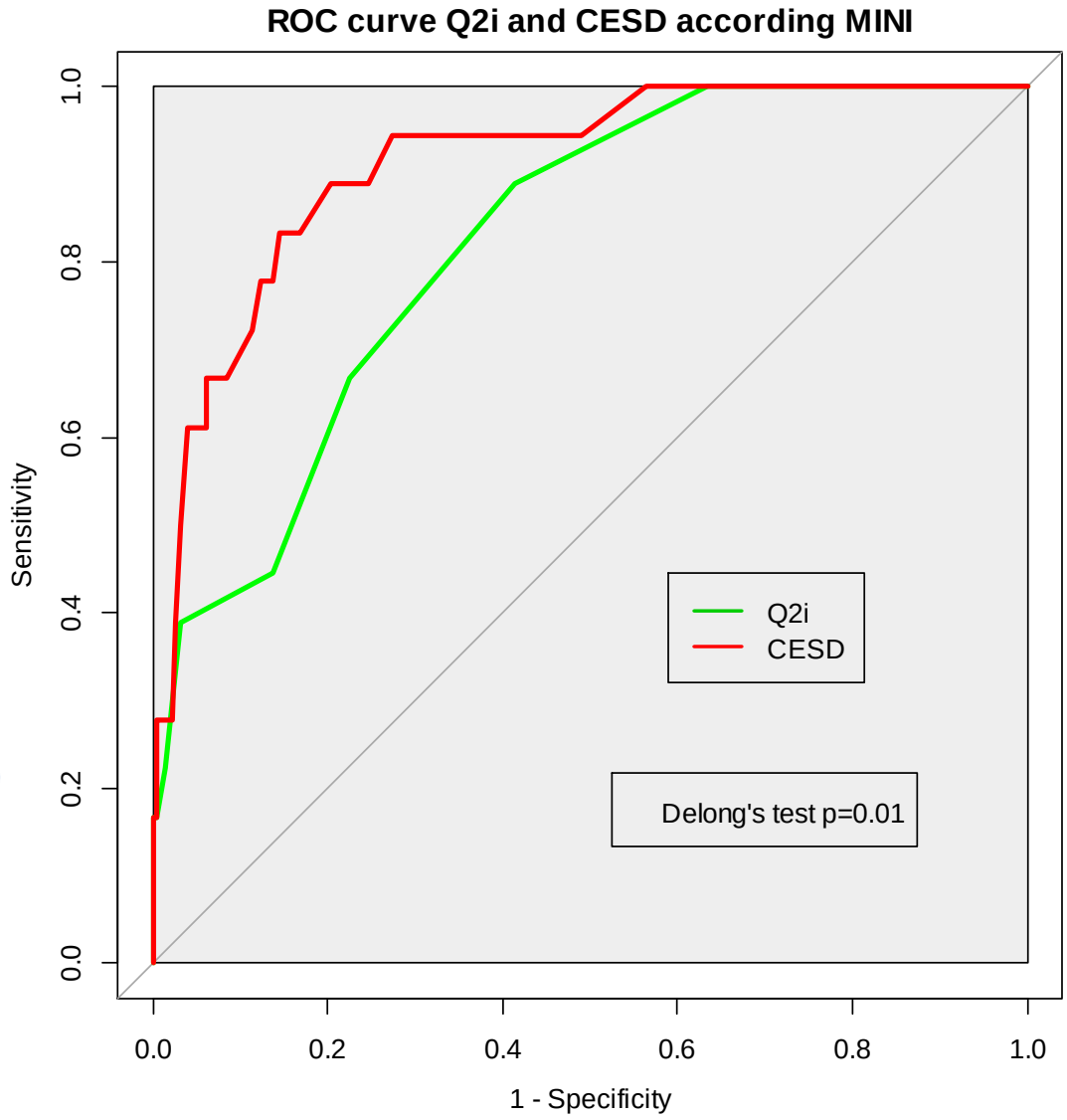

Discussion

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- Results are comparable with the publication that validates two questions in English

Instrument	Sensibility (95%CI)	Specificity (95%CI)	Likelihood Ratio Positive	Likelihood Ratio Negative	Area Under Roc Curve (95%CI)
Reduced PRIME- MD	96% (90-99)	57% (53-62)	2.2	0.07	0.82 (0.78-0.86)
Q2i	90% (69–97)	59% (52- 65)	2.2	0.20	0.82 (0.80-0.89)

- The selection bias of our population can skew the measurement of acceptability (bias in our validation)
- When should we give the questionnaire? Depression may progress rapidly
- Greater the number of questions, greater the number of missing data

Q2i: 98.6% answer CESD : 84% answer QLQC-30: 76% answer

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Conclusion

- Q2i questionnaire :
  - Quick and simple tool
  - Requires less than 2 minutes to target patients likely to benefit from a psychological support
  - A sum ≤ 2 to the two questions of Q2i excluded 99 % of the diagnosis of depression
  - Q2i could be used routinely in oncology

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Thank for your attention

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