Some preliminary findings concerning a new scale for the assessment of depression and related symptoms in stroke patients

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The authors describe a new scale, the Post-Stroke Depression Rating Scale (PSDRS), specifically constructed to investigate the emotional, affective and vegetative disorders of stroke patients. They also report some preliminary data concerning the validity and reliability of the new scale and of its sections and the first results obtained administering the PSDRS to 68 stroke patients and 10 subjects affected by a "functional" form of major depression. The comparison between the results obtained on the PSDRS by patients classified (on the basis of DSM III diagnostic criteria) as having major depression of either vascular or functional origin seems to show an incomplete overlap between these two forms of depression. In patients classified as having major post-stroke depression, part of the symptomatology seems to be due either to the direct effect of the brain lesion or to the psychological reaction of the patient to the disabilities and handicaps provoked by the lesion.

Key Words: Depression — Stroke — Rating Scale — Post-Stroke Depression.

Introduction

One problem which is usually met while studying the emotional and affective disorders of patients with neurological diseases is the complete lack of instruments specifically constructed to evaluate these disorders. The great majority of the existing scales, tests or inventories have been developed for psychiatric patients, and bear in mind the diagnostic criteria, problems and symptoms typical of these subjects; but their use in brain-damaged patients is highly problematic and often misleading. One of the clinical instruments frequently used to evaluate the behavioral and personality disorders of brain-damaged patients is, for example, the Minnesota Multiphasic Personality Inventory (MMPI), but both theoretical and empirical objections can be raised against its use in brain-damaged patients. From the theoretical point of view, there is no reason for believing that the emotional and personality changes resulting from brain damage necessarily correspond to the psychiatric diagnostic criteria used by the MMPI. From the empirical point of view, several of the items included in scales Hs (hypochondriasis), Hy (hysteria) and Se (schizophrenia) of the MMPI refer to questions tapping valid signs or symptoms of brain damage [2, 16]. The meaning of high scores obtained on these scales is therefore different in subjects with "functional" psychiatric disorders and patients with brain damage, being due to psychopathological reasons in the former
The Post-Stroke Depression Rating Scale: A Test Specifically Devised to Investigate Affective Disorders of Stroke Patients*

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ABSTRACT

Owing to the lack of instruments specifically constructed to study emotional and affective disorders of stroke patients, the nature of post-stroke depression (PSD) remains controversial. With this in mind, the authors constructed a new scale, the Post-Stroke Depression Rating Scale (PSDS) which takes into account a series of symptoms and problems commonly observed in depressed stroke patients. The PSDS and the Hamilton Depression Rating Scale (HDS) were administered to a group of 124 stroke patients, who had been classified, on the basis of DSM III-R diagnostic criteria, in the following categories: No depression (n = 32); Minor PSD (n = 47); Major PSD (n = 45). Scores obtained by these stroke patients on the PSDS and on the HDS were compared to those obtained on the same scales by 17 psychiatric patients also classified as major depression on the basis of DSM III-R diagnostic criteria. An analysis of the symptomatological profiles clearly showed that: (1) a continuum exists between the so-called “major” and “minor” forms of PSD; (2) in both groups of depressed stroke patients the depressive symptomatology seems due to the psychological reaction to the devastating consequences of stroke, since the motivated aspects of depression prevailed in depressed stroke patients, whereas the (biologically determined) unmotivated aspects prevailed in patients with a functional form of major depression; and (3) in stroke patients a DSM III-based diagnosis of major PSD could be in part inflated by symptoms (such as apathy and vegetative disorders) that are typical of major depression in a patient free from brain damage, but that could be due to the brain lesion per se in a stroke patient.

According to some authors (e.g., Adams & Hurwitz, 1963; Kotila, Waltimo, Niemi, Laaksonen, & Lempinen, 1984; Parikh et al., 1990) post-stroke depression must be considered as the most serious obstacle to the rehabilitation of stroke patients. However, in spite of studies designed to clarify its meaning, the nature of this behavioural disorder remains controversial.

The most important and influential series of studies on this subject has been conducted by Robinson and coworkers (Lipsy, Robinson, Pearlson, Rao, & Price, 1985; Lipsy, Spencer, Rabins, & Robinson, 1986; Robinson, Kubos, Starr, Rao, & Price, 1983, 1984; Starkstein & Robinson, 1988, 1989; Starkstein, Robinson, & Price, 1987) who have repeatedly claimed that there are two different types of post-stroke depression (PSD): a major depression and a minor depression. The former has been considered, on the basis of the diagnostic criteria of the Diagnostic and Statistical Manual (DSM III) of Mental Disorders (American Psychiatric Association, 1987) as a form of endogenous depression, whereas the latter has been considered as a form

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APPENDIX

The Post Stroke Depression Rating Scale
The examiner must choose for each section the statement which best corresponds to the patient's actual state.

Section 1

DEPRESSED MOOD

Well-balanced mood. At times happier, at times worried, but not more than before illness. 0

Mood a little more sad and worried than before illness. 1

Mood clearly more oriented toward sadness and pessimism than before illness. 2

Mood clearly oriented toward sadness and pessimism, with fits of crying from time to time (but by speaking it’s possible to pull him/her out of it). 3

Very sad and disheartened mood. Cries rather often and for long periods (even speaking, it’s hard to pull him/her out of it). 4

Gloomy, black mood, cries continuously, and there is no way to hearten him/her, or: so depressed and dark, can’t even cry any more. 5

**always try to determine if depressed mood:
(a) is related to handicaps and disabilities.
(b) is not related to the consequence of illness.

Section 2

GUILT FEELINGS

Good level of self-esteem. Feeling of having had an essentially positive life without much self-reproach. 0

Acceptable level of self-esteem, but with some self-reproach in limited areas (for example, 1 of 3: family, friends, work). 1

Rather low level of self-esteem, with some self-reproach (not particularly serious) in various areas. 2

Little self-esteem and many guilt feelings; however does not think illness has been a just punishment. 3

Very little self-esteem and many guilt feelings; thinks illness has been a just punishment. 4
Even without being posed specific questions, spontaneously verbalizes serious expressions of self-accusation, unworthiness and guilt.

**always try to determine if guilt indicates:
(a) moral unworthiness.
(b) responsibility for behavior (smoking, sexual abuse, food abuse, etc) held responsible for illness.

**Section 3**

**SUICIDE**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Thinks life is always worth living.</td>
</tr>
<tr>
<td>1</td>
<td>Thinks life is worth living only if health, affective, and economic conditions are acceptable.</td>
</tr>
<tr>
<td>2</td>
<td>Thinks life in general is not worth living, but has never thought of taking it.</td>
</tr>
<tr>
<td>3</td>
<td>Besides often thinking life is a burden, recently has had vague ideas about killing him/herself.</td>
</tr>
<tr>
<td>4</td>
<td>Recently, has had recurring ideas about suicide, but without making specific plans or concrete attempts.</td>
</tr>
<tr>
<td>5</td>
<td>Recently, has made detailed plans (or has made serious attempts) to commit suicide.</td>
</tr>
</tbody>
</table>

**always determine whether possible suicide tendencies:
(a) appeared only after illness.
(b) are related to consequences of illness.**

**Section 4**

**VEGETATIVE DISORDERS**

Sum scores of sleep disorders (0–3) and appetite (0–2)

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No sleep disorder.</td>
</tr>
<tr>
<td>1</td>
<td>Some difficulty in falling asleep or frequent nocturnal awakening.</td>
</tr>
<tr>
<td>2</td>
<td>Awakens very early in the morning and is unable to fall back to sleep again (poor drug effectiveness).</td>
</tr>
<tr>
<td>3</td>
<td>Major disorders in all sleep phases; does not allow others to sleep during the night (drugs completely ineffective).</td>
</tr>
</tbody>
</table>
Appetite disorders:

No appetite disorder. 0

Clear loss of appetite, but no weight loss. 1

Complete loss of appetite associated with weight loss. 2

Section 5

APATHY/ABULIA/INDIFFERENCE

Sum scores of following parameters:

(a) Interest in other patients and own state of health:
- adequate (is interested, asks information, tries to be useful). 0
- rather scarce both toward other patients and own morbid condition. 1
- completely absent. 2

(b) Interest in family members and friends:
- adequate (waits impatiently for their visits, asks about individuals and situations in family circle, reacts appropriately to emotionally significant events). 0
- rather scarce (clearly reduced compared to premorbid condition). 1
- completely absent. 2

(c) Interest in social situations:
- adequate, corresponding to premorbid levels regarding public and political events or work situations. 0
- clearly reduced compared to premorbid situation. 1

Section 6

ANXIETY

Sum scores for psychic anxiety (0–2), somatic anxiety (0–2) and psycho-motor agitation (0–1).

Psychic anxiety:

Calm enough; Rarely tense, nervous or apprehensive. 0

 Appears rather tense, nervous, irritable; Sometimes expresses fears and worries; 1
Often appears nervous, apprehensive, irritable; Frequently expresses fears about own condition; Often needs to be reassured. 2

Somatic anxiety:

Shows no somatic sign of anxiety, nor complains of headaches, tremors, tachycardia. 0
### POST-STROKE DEPRESSION RATING SCALE

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rather often complains of headaches, tremors, palpitations or other gastrointestinal or urinary somatic disorders.</td>
</tr>
<tr>
<td>2</td>
<td>Often appears pale, sweaty; Every day complains of headaches, diffused pains, sense of precordial oppression, or other somatic symptoms. <em>Psychomotor agitation:</em> Besides showing signs of somatic and/or psychic anxiety, also shows marked restlessness or real psychomotor agitation.</td>
</tr>
</tbody>
</table>

#### Section 7

**CATASTROPHIC REACTION**

(by/in collaboration with whoever carries out neuropsychological evaluation)

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Well-controlled reaction to possible difficulties encountered during examination.</td>
</tr>
<tr>
<td>1</td>
<td>Rather controlled reaction but some highlights of impatience, irritation, restlessness.</td>
</tr>
<tr>
<td>2</td>
<td>More evident anxious or aggressive manifestations; frequent cussing or expressions of depression.</td>
</tr>
<tr>
<td>3</td>
<td>Clear manifestations of anxiety at somatic (and/or vegetative) level but without fits of crying.</td>
</tr>
<tr>
<td>4</td>
<td>Clear signs of anxiety with sporadic fits of crying or refusal to continue test.</td>
</tr>
<tr>
<td>5</td>
<td>Test practically impossible to carry out due to seriousness of behavioral disorganization and fits of anxiety and crying.</td>
</tr>
</tbody>
</table>

#### Section 8

**DIFFICULTY IN EMOTIONAL CONTROL**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The patient manages to control emotional reactions normally.</td>
</tr>
<tr>
<td>1</td>
<td>Recently becomes emotional a little more than usual.</td>
</tr>
<tr>
<td>2</td>
<td>At times laughs or cries even to light stimuli (or is not able to interrupt emotional outbursts provoked by an appropriate stimulus).</td>
</tr>
<tr>
<td>3</td>
<td>Often reacts in an emotionally excessive way with fits of laughter or crying. However, is able to control him/herself in the presence of strangers.</td>
</tr>
<tr>
<td>4</td>
<td>Bursts out laughing or crying even in the presence of strangers and it is difficult for him/her to break off these attacks.</td>
</tr>
<tr>
<td>5</td>
<td>Patient is completely incapable of controlling emotional reactions.</td>
</tr>
</tbody>
</table>
Sum scores of parameters (A) and (B) and one other choice (in relation to sex and patient’s premorbid interests) between parameters (C), (D), and (E).

<table>
<thead>
<tr>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

A) Visits of friends or relatives (or receiving good news about them) gives me pleasure
   -the same as before the illness. 0
   -less than before the illness. 1
   -gives me no pleasure. 2

B) A better-than-usual meal (for example, something brought from home) gives me pleasure
   -the same as before the illness. 0
   -less than before the illness. 1
   -gives me no pleasure. 2

C) If my team wins
   -it pleases me the same as before. 0
   -it no longer interests me 1

D) Seeing an erotic scene on TV
   -pleases me like before. 0
   -has no effect on me. 1

E) The visit of a beautiful child
   -cheers me up the same as before. 0
   -no longer gives me pleasure. 1

Section 10

DIURNAL VARIATIONS

The time when I feel most depressed is:

Always in the early morning, when I wake up and have a whole useless day before me to fill. -2
It varies from one day to the other, but usually it is worse in the early morning, when I wake up. -1

I always feel more or less depressed in the same way. 0

There’s no rule, but usually I feel more depressed when something happens that makes me feel handicapped. +1

Always when the situation makes me feel disabled and unable to do basic things, such as... (insert an example consistent with the patient’s deficit). +2