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Research Article

Assessments and nursing care for right brain-damaged stroke patients: Focusing on neglect and related symptoms

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Abstract

The purpose of present study was to identify the behavioural characteristics and examine assessments of nursing care among right brain-damaged stroke patients with neglect within 1 year following initial onset. Characteristics related to higher cerebral dysfunction were extracted and patient grouping was attempted through cognition (Mini-Mental State Examination) and physical function (Barthel Index) plots. The characteristics and implications for nursing care for each group were analyzed. Twelve patients were classified into four groups using cognitive-physical function evaluations together with subjective and objective data associated with neglect. 'Neglect' has been regarded as a disorder of spatial perception. However, the characteristics observed in Group 2 suggest that 'neglect' may have another facet, manifesting as disorders in perceiving continuous spatio-temporal changes of an action and comprehending the context of a situation. In these patients, although 'by calling attention' is the conventional care, more appropriate care should be provided based on an assessment of cognitive-physical function and spatio-temporal recognition of an action.

Key words

neglect, nursing care, right brain-damaged stroke patients.

INTRODUCTION

Strokes are often followed by life-disruptive outcomes. After the acute phase, almost half of stroke patients develop higher cerebral dysfunction (Zoccolotti *et al.*, 1989). Higher cerebral dysfunction is defined as injury to the cerebral cortex leading to language, behavior, cognition, memory and attention disorders (Lawson, 1962; Siev *et al.*, 1996). The complexity of the dysfunction makes it difficult to study because of diverse symptom manifestation related to pathology. Among the most commonly occurring pathological states are agnosia (e.g. spatial neglect and related symptoms) and apraxia, which pose nursing care management challenges (Table 1).

To our knowledge, there is no previous study in nursing on higher cerebral dysfunction, especially focusing on spatial neglect and related symptoms. However, conventional nursing practice often attempts to improve spatial neglect in these patients by calling the patient's attention to the left side (Robertson, 1993). In the literature regarding rehabilitation and neurology, spatial neglect is frequently observed in patients with right brain damage due to strokes, and is known to be a prognostic factor (Paolucci *et al.*, 2001). Although rehabilitation for spatial neglect has been attempted, research on rehabilitation efficacy is not conclusive (Seron *et al.*, 1989). Furthermore, because higher cerebral dysfunction has a significant cognitive component, health care providers should consider not only the physical symptom's manifestation, but also the cognitive dysfunction. However, nursing care, which addresses the physical symptoms of higher cerebral dysfunction, often fails to link the physical symptoms with cognitive dysfunction. Development of nursing

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Table 1. Definition of terms

Definition of term	Examples
Apraxia: The state that the capability to perform a subject in operation although muscular power required for movement is maintained	Ideomotor apraxia (IM) is traditionally defined as a disorder of learned, skilled movement that cannot be attributed to elementary motor deficit or incoordination. Ideoational apraxia (IA), sometimes called conceptual apraxia, is defined as a disorder of learned, skilled movement that cannot be attributed to elementary motor deficit (e.g. corticospinal tract deficit, tremor) or incoordination. Limb kinetic apraxia manifests as slowing and/or clumsiness of the distal components of action, with preservation of knowledge of the appropriate action to perform. It is usually attributable to perirolandic or premotor damage.
Agnosia: Disorders of recognition, specific to one sensory channel, that affect either the perceptual analysis of the stimulus or the recognition of its meaning. In the visual modality, objects, faces and colors can be separately disrupted.	Visual agnosia: (i) Visual spatial agnosia (unilateral spatial neglect). Failure to orient, report or respond to relevant stimuli on the side opposite to the lesion; (ii) Object agnosia; (iii) Prosopagnosia; (iv) Simultanagnosia; (v) Color agnosia Auditory agnosia: (i) Psychiatric deafness; (ii) pure word deafness; (iii) amusia. Tactile agnosia: (i) anosognosia; denial or lack of awareness of a hemiparesis and/or own illness. Anosognosia for hemiparesis is a consequence of interhemispheric disconnection. (ii) Unilateral asomatognosia: disturbance of body schema, disorder of the body image (spatial memory) currently experienced about the self body part and a form. Distorting of the body image. The condition of a feeling that an affected limb does not belong to the individual. (iii) Gerstmann's syndrome. Left-right agnosia: disorder of cognition for right and left of the body. (iv) Autotopagnosia. (v) Alylognosia. (vi) Tactile agnosia.

management related to patient daily living, which incorporates physical symptom management and assessment of cognitive function is urgently required.

In the present study, patients who had experienced a stroke and who manifested spatial neglect and related symptoms were studied. There were two purposes: (i) to examine the overlap between cognition and daily physical function and (ii) to describe patients' qualities related to cognitive-physical functional categories.

METHOD

Patients

Among patients admitted to the rehabilitation wards of the Tokyo Metropolitan Geriatric Hospital, 12 patients who met the following criteria were included in the study. The criteria were: (i) right brain-damaged stroke patient; (ii) the current admission was the first stroke event; (iii) < 1 year after stroke onset; (iv) spatial neglect and related symptoms were diagnosed by a medical doctor, occupational therapist and clinical psychologist.

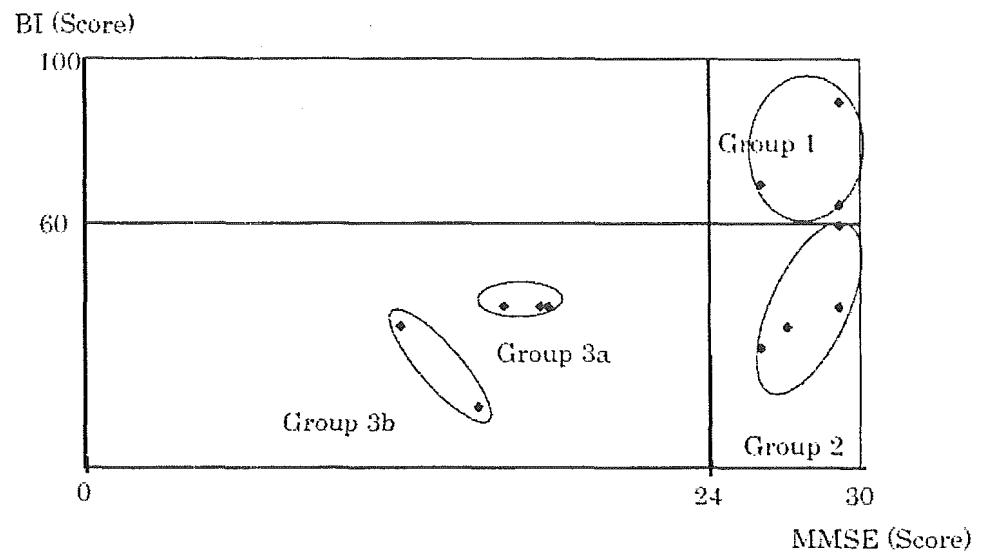
Methods

There were three sources of data for this study; clinical records, observations and interviews. Each will be briefly described.

Data collection from clinical records

From the clinical records of doctors, nurses, occupational therapists and clinical psychologists, the following patient data were collected. Demographic dates such as age, gender, name and site of disease, date of onset, complications, current signs and symptoms. Functional evaluations, including type and severity of higher cerebral dysfunction (determined by occupational therapist and clinical psychologist), degree of hemiparesis (Brunnstrom stage), assessed by the attending physicians (Brunnstrom, 1970), activities of daily living (Barthel Index; BI) (Mahny & Barthel, 1965) assessed by the ward nurses, and cognitive ability (Mini-Mental State Examination; MMSE) (Folstein *et al.*, 1975) determined by the attending physicians. The MMSE and BI were used to categorize patients by cognition-physical function.

Figure 1. Classification based on cognition function, assessed using the Mini-Mental State Examination (MMSE) and the Barthel Index (BI).



Interviews

Interviews of the patients and their families were conducted. Patients were asked about behaviors, emotional aspects and difficulties concerning spatial neglect and related symptoms. Families were asked the same questions. Interviews were recorded and then transcribed. Before an interview, an attending physician or a ward nurse introduced the researcher and explained the purpose. After obtaining consent to participate in the study, the researcher again explained the study purpose and ascertained the patient's desire to participate. Interviews were conducted and recorded in the ward or the dining room, with maximum effort put into ensuring patients' privacy.

Observations

The behaviors of the patients in their daily hospital life activities were observed to describe daily physical function. Information was collected about the characteristics of the patient's daily physical function and cognition. To ensure accuracy of the observations, the contents of observations were discussed with a ward nurse, the patient, the family and physicians.

Methods of analysis

The first study purpose was to examine the overlap between cognitive and physical function, addressed using a scattergram. The second study purpose, to describe qualities related to cognitive-physical function, was addressed by interview and observational data to describe the findings in the scattergram.

Scattergrams of the patients with respect to MMSE and BI scores were plotted to capture the relationship of cognition with physical function. For the MMSE, the cut-off score was set at 24 points, which indicates a normal cognitive state (Braekhus *et al.*, 1992; Tombaugh & McIntyre, 1992; Derik & Wade, 1993). For the BI, the cut-off score was 60 points, which indicates independence with self-care and independence with indoor living (Wade & Collin, 1988; Geert *et al.*, 1999; Pamela *et al.*, 2000). Classification of each patient into one of the cognition-physical function quadrants occurred using these criteria (Fig. 1).

Analysis of interview and observation data enabled a description of cognitive and physical function characteristics for patients in each scattergram quadrant to be made. Basic content analysis procedures (Waltz *et al.*, 1991) were used to summarize interview data and observational data were systematically integrated to enhance understanding.

RESULTS

Patients' backgrounds are summarized in Table 2. When the MMSE and BI scores were used to construct a scattergram with previously described cut-off values, the following four groups were obtained. Three patients with a MMSE score ≥ 24 and a BI score > 60 had relatively high cognitive abilities and physical function (Fig. 1: upper right quadrant, Group 1). Four patients with a MMSE score ≥ 24 and a BI score ≤ 60 had high cognitive ability, although physical function was low (Fig. 1: lower right quadrant, Group 2). Five patients with a MMSE score < 24 and a BI score ≤ 60

Table 2. Summary of patient characteristics (n = 12)

Age (years)	72 ± 7.0 (range: 64–84)
Sex (male : female)	9 : 3
Diagnosis	
Infarction	9
Hemorrhage	3
Hemiparesis: Brunnstrom stage (left)	
I to III	3
IV to V	4
Duration from onset (months)	2.8 ± 2.0 (range: 1–8)
Type of higher cerebral dysfunction	
Left spatial neglect	11
Attention disorder	9
Anosognosia	7
Left asomatognosia	1
Cognitive ability (MMSE score)	22.7 ± 6.6 (range: 12–29)
Physical ability (BI score)	46.7 ± 20.0 (range: 15–90)

BI, Barthel Index, MMSE, Mini Mental State Examination.

were low both in cognitive ability and physical function (Fig. 1: lower left quadrant, Group 3). No patients had low cognitive ability with high physical function (Fig. 1: upper left quadrant).

When common items were extracted from characteristics of behaviors and cognition, the five patients in Group 3 were further divided into two groups (Group 3a and 3b).

Characteristics of each group

Characteristics of each group of patients are shown in Table 3. Group 1 was characterized by preserved cognitive ability; mild to moderate hemiplegia with high physical ability; and manifestation of spatial neglect, attention disorder and anosognosia. These patients had left spatial neglect and bumping on the left side sometimes occurred. When bumping on the left side occurred, these patients were aware and capable of behavioral adjustment, such as changing the direction of the wheelchair. Although conversation was smooth, the patients could abruptly become vague in the middle of a conversation, show restlessness, or act on a hasty judgment. Sometimes irrelevant behaviors could be seen. The patients accepted the calls to pay attention to the left side and assistance from nurses and families, and did not feel stressed about their care.

In these patients, assistance for hemiplegia and assistance to improve independent mobility were provided. In response to the call to pay attention, these patients

Table 3. Summary of patients classified in groups

Group	MMSE	BI	Sex	Age	Diagnosis	Time after onset (months)	Paralysis (Brunnstrom) stage	Neglect	Attention disorder	Anosognosia	Left-right agnosia	Left asomatognosia	Memory disorder
Group 1	29	90	M	70	Infarction	1	IV-II-IV	No	Yes	No	No	No	No
	29	65	M	73	Hemorrhage	1	IV-IV-IV	Yes	No	Yes	No	No	No
Group 2	26	70	M	78	Infarction	2	IV-IV-IV	Yes	Yes	No	No	No	No
	29	60	M	64	Hemorrhage	1	V-V-IV	Yes	No	Yes	Yes	No	No
	29	40	M	67	Infarction	3	III-III-III	Yes	No	No	No	No	No
Group 3a	27	35	M	65	Infarction	8	I-I-I	Yes	Yes	No	No	No	No
	26	30	M	67	Infarction	2	I-I-III	Yes	Yes	Yes	No	Yes	No
	17	40	M	72	Infarction	4	I-I-II	Yes	Yes	No	No	No	No
	17	40	M	66	Hemorrhage	1	I-I-III	Yes	Yes	No	No	No	Yes
Group 3b	16	40	F	84	Infarction	3	I-I-II	Yes	Yes	Yes	No	Yes	Yes
	15	15	F	83	Infarction	4	II-II-II	Yes	Yes	Yes	No	Yes	Yes
	12	35	F	78	Infarction	3	I-I-I	Yes	Yes	Yes	No	Yes	Yes

Paralysis was all left-sided.

managed to direct attention toward the left side. However, when they were called to pay attention, they occasionally exhibited irrelevant behaviors in the context of situations.

Group 2 was characterized by preserved cognitive ability; severe hemiplegia with low physical ability; and signs of spatial neglect, attention disorder, anosognosia, left-right agnosia and asomatognosia. Patients in this group made many mistakes in handling the wheelchair and could not master the manipulation. Each action was markedly clumsy. When moving, the body faltered towards the left side, resulting in loss of balance and bumping towards the left side. Even when bumping on the left occurred, they were unaware of what had happened and could not manage behavioral adjustment. If these patients were engaged in continuous activity and were called by someone else, they became confused, showed a perplexed expression of 'not knowing what to do', brooded over the situation and stopped what they were doing. The more they were told what to do, the more confused they became, and finally they discontinued their activities and had difficulty starting again. The patients showed strong discomfort with their basic care, did not give sufficient attention to their spatial neglect and frequently bumped into barriers. These patients thought that all their problems would be solved if they could walk.

In Group 2 patients, assistance to improve independence of mobility and guidance to improve spatial neglect (calling attention) were provided. However, the patients were strongly displeased with this care, and care providers were not able to achieve their necessary guidance role. For these patients, the method of calling out to them and the timing needed to be considered. Observations regarding the patients' recognition of their own disability and the way they respond were considered necessary.

Group 3a was characterized by low cognitive abilities; severe hemiplegia and low physical ability; and signs of spatial neglect, attention disorder, anosognosia, asomatognosia and memory disturbance. In this group, actions were crude and marked inattention was obvious. The balance of sitting posture was poor; the body tilted towards the left, tumbled down and remained in the fallen position. They paid almost no attention to the paralyzed side. Even when the paralyzed side was pinned under the trunk, these patients were totally unaware. 'Younger brother's hand is heavy' or 'The hemiplegia is only slight, there is no problem at all', some commented, denying their own hemiplegia and disability. Furthermore, they spoke in a loud voice regardless of the situation and engaged in one-way talk about the same subject. These patients

had difficulty understanding why the people around were speaking to them.

In these patients, due to poor body balance and lack of concentration on actions, assistance was provided in recognition of the hazard imposed by the symptoms. The patients' low cognitive abilities in addition to neglect and related symptoms created a hazardous situation, demanding nursing care which protected them from harm.

Group 3b was characterized by low cognitive ability; severe hemiplegia and low physical ability; and signs of neglect, attention disorder, anosognosia, asomatognosia and memory disorders. These patients fell asleep when there was nothing to do. Almost no physical movement could be observed. 'I am all right. The illness is only mild. I shall be going home soon', one said. Patients in this group were provided with generalized basic care and assistance that gave stimulation. Even though these patients had both low physical and cognitive abilities, conversation and care intervention with consideration of spatial neglect and related symptoms was required.

DISCUSSION

In the present study, using cognitive-physical functional evaluations by MMSE and BI, together with subjective and objective data presumably related to higher cerebral dysfunction, the characteristics of patients with higher cerebral dysfunction were examined and classified into several groups.

In our patients, the mean interval from disease onset was 2.8 ± 2.0 months, which is considered the phase of onset of higher cerebral dysfunction in the clinical course of patients with stroke (Gainotti, 1972; Bisiach *et al.*, 1990; Pedersen *et al.*, 1997). 'Neglect' was observed in 11 out of 12 patients. This 'neglect' has been demonstrated by prior studies to have unfavorable effects on functional prognosis (Hier *et al.*, 1983a; Hier *et al.*, 1983b; Gialanell & Mottioli, 1992; Audrey *et al.*, 1999; Jehkonen *et al.*, 2000).

Based on cognitive-physical functional evaluations and data related to higher cerebral dysfunction, patients were broadly classified into three groups: Group 1 with preserved cognitive and physical functions; Group 2 with preserved cognitive function and lowered physical function and; Group 3 with lowered cognitive and physical function. This classification was consistent with the classification based on the standard values of the widely used evaluation tools MMSE and BI, and there were characteristic inter-group differences in the data related to higher cerebral dysfunction.

Group 2 had low physical function and neglect was observed. Usually, these patients are assisted or guided

by calling attention according to individual actions. However, these patients were aware that they were not satisfactorily acquiring appropriate actions and exhibited unpleasantness or irritation. There is often a gap between their own disability in performing actions and acceptance of this fact, and a gap in perceiving care providers' affectionate assistance and communication. This gap in perception is speculated to pose difficulties in keeping pace with the next situation during a continuous movement or action.

Although 'neglect' has been understood as a disorder of 'spatial perception', the difficulties observed in this group may imply an inability to perceive spatio-temporal changes during the continuity of a series of actions. Previous studies have suggested subgroups of neglect disorders that may be consistent with the findings in this group (Jehkonen *et al.*, 2000; Adair *et al.*, 1995).

Anosognosia and asomatognosia were observed in Group 2. These symptoms occur with high frequency during the acute phase of stroke and usually become unremarkable later (Ay *et al.*, 1999). However, anosognosia and asomatognosia have been reported to be associated with unfavorable acceptance of disability and to be a determinant of the prognosis of rehabilitation (Robertson *et al.*, 1998; Jehkonen *et al.*, 2000). It is possible that patients in this group showed unpleasantness because of the gap between the recognition of disease or disability and the inability to understand the reality and context of a situation (Robertson *et al.*, 1998). Hence, there was an inappropriate perception of assistance provided by caregivers.

In the conventional approach of nursing care, 'care by calling attention' is the major strategy for neglect. However, with patients showing characteristics of Group 2, because these patients do not recognize the need for care and deviate from 'others' in perceiving affection, 'care by calling attention' may promote discomfort or the experience of failure in these patients. Therefore, nursing care should take various considerations into account such as observing where attention is directed, avoiding confusion caused by excessive attention calling or guidance, appropriate timing, waiting for behavioral adjustment, telling the patient if adjustment is successful, and conveying a sense of success to the patient.

Group 1 had preserved cognitive and physical functions. Even though neglect was present, the patients were aware of it and were capable of adjusting their actions. They responded to the care of attention calling and were able to direct their attention to the left side. For these patients, conventional nursing care of drawing attention to the left side for the purpose of improving 'neglect' was effective. However, the patients often

became confused during a conversation or operation, found it difficult to follow the context of a situation continuously (as seen in Group 2) and exhibited irrelevant actions out of their own interpretation. In these circumstances, potentiality of attention disorders should be considered and it is necessary to observe whether behaviors deviate from the context of the surrounding.

In Group 3, both physical and cognitive functions were low. In Group 3a, there were strong effects of higher cerebral dysfunction. Lowered attention was remarkable and actions were rough and incomplete. Communication with others tended to be one-sided and there was impairment in mutual understanding. Because the patient finds it difficult to direct attention to the impaired extremities and space (Gialanell & Mottioli, 1992), self-care of the left side of the body is neglected. As these patients cannot control the direction of attention, different methods should be designed to stimulate the right side to which attention can be directed and to stimulate the left side which is neglected. In line with this, the living environment should be adjusted.

Group 3b had lowered cognitive and physical functions, as seen in Group 3a. The biggest difference between these two groups was a fluctuating and markedly low level of consciousness in Group 3b. This is probably a result of cerebral arteriosclerosis and fluctuating cerebral blood flow. There were few spontaneous complaints, and conversation and movements were not initiated without stimulation. In the daily life setting, higher cerebral dysfunction such as neglect is hidden beneath the extensively lowered cerebral function. In this group of patients, care plans to provide function-promoting programs, including activities, entertainment and hobbies may be needed.

Among our patients, none were in the fourth quadrant (MMSE score < 24, BI score > 60). This may be because generally, stroke patients lose both cognitive and physical function. In some left brain-damaged stroke patients, pure aphasia, which complicates low cognitive function and high physical performances, is observed. This may not be the case in right brain-damaged patients. Scores of MMSE depend on verbal function, while there is no well-established method to evaluate right brain function. Alternatively, this may be due to agnosia and apraxia. Patients with Alzheimer's dementia often complicate agnosia and apraxia, and show high physical performance but low cognitive ability.

In the present study, right brain-damaged stroke patients were classified into several groups using cognitive-physical function evaluations together with subjective and objective data associated with higher

cerebral dysfunction. 'Neglect', the common disorder among these patients, and its related symptoms have been regarded as a disorder of spatial perception. However, the characteristics observed in Group 2 suggest that 'neglect' may have another facet, manifesting as disorders in perceiving continuous spatio-temporal changes of an action and comprehending the context of a situation. In these patients, although 'care by calling attention' is the conventional approach, more appropriate care should be provided based on an assessment of cognitive-physical function and spatio-temporal recognition of individual patients.

There are two subgroups in the third quadrant, suggesting the need for new classification tools other than cognitive-physical function. Observations and evaluations considering these aspects are essential and form the basis of care.

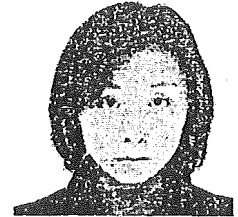
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失認関連症候を有する右大脳半球脳卒中患者の生活障害の経時的変化



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要 約

目的：失認関連症候(以下, NRD)を有する右大脳半球損傷(以下, RBD)脳卒中患者の急性期から慢性期における生活障害の特徴を明らかにすることを目的とした。

方法：Y市内地域中核病院、都内高齢者専門病院に平成14年4月6日～10月31日に入院した、①初回発症、②RBD、③NRDあり、の3基準を満たし、同意が得られた脳卒中患者全例を対象に、入院時、退院時、退院後1カ月、3カ月、6カ月に面接と行動観察を行った。入院時のNational Institutes of Health Stroke Scale (NIHSS)総得点により対象者を3群、すなわち、軽度、中度、重度に分類し、各群の生活障害の特性を時系列別に検討した。

結果：初回脳卒中患者は42名、うち14名がRBD脳卒中患者だった。このうちさらにNRDを有した者は11名、同意が得られた9名(梗塞7名、出血2名；男6名、女3名；平均年齢66.2±3.4歳)を対象とした。半側空間無視8名、身体失認1名、着衣失行1名で、うち1名はNeglectと半側身体失認を有していた。NIHSSは平均11.3±2.9点で、軽度2、中度4、重度3名と分類された。2名は、NRDが入院後早期に消失し生活障害がみられなかった。7名には、入院時から退院後6カ月後にもNRDと生活障害が認められた。

結論：NRDを有するRBD脳卒中患者の発生頻度の高さと、NRDによる生活障害の重要性を示した。脳卒中重症度分類による時系列変化の特徴から、発症後早期に軽度な患者は、早期にNRDが消失し生活障害がないこと、発症後早期に中度と重度の患者には、入院時から退院後6カ月までもNRDと生活障害が残ることを明らかにした。

Key words：失認関連症候、右大脳半球損傷脳卒中患者、生活障害、時系列変化

結 言

脳卒中患者の発症後早期から生じる失認・失行について、急性期から慢性期における自然経過はいまだに不明であり、その評価は非常に難しい¹⁾。失認の中でも半側空間無視(以下, Neglect)は、視空間認知障害、半側不注意を特徴とし、しばしば病態失認、病態無関心、眼球麻痺など様々な関連症候(neglect and related disorders, 以下NRD)を伴う^{2,3)}。また、その発生頻度は、右大脳半球損傷(right brain-damaged, 以下RBD)脳卒中患者に極めて高い⁴⁾。

脳卒中患者のNeglectに関する先行研究では、患者の日常生活動作能力(以下, ADL)とNeglectに強い関連性がある^{5,6)}ことが示されており、それは負の影響要因^{7,8)}とされている。さらに、RBD脳卒中患者の機能障害への負の関連要因⁹⁾であり、セルフケアへの影響要因としては、

運動障害よりも重要^{10,11)}とされている。

このようにNeglectの障害の重要性が示されているにもかかわらず、Neglectによる生活障害の自然経過は明らかにされておらず、患者の具体的なケア方法に関する知見はいまだに得られていない。看護師がNRDを有する患者の生活面に焦点を当て、看護ケアの提供方法を確立していくことは、患者や家族の生活を支援する上で急務であり、意義があると考えられる。

そこで本研究は、NRDを有するRBD脳卒中患者の急性期から慢性期における生活への支障を明らかにすることを目的とした。

方 法

1. 対 象

平成14年4月6日～10月31日にY市内地域中核病院、都内高齢者専門病院に入院した全脳卒中患者のうち、①初回発症、②RBD、③NRDあり、の3基準を満たし、同意が得られた者を研究の対象とした。

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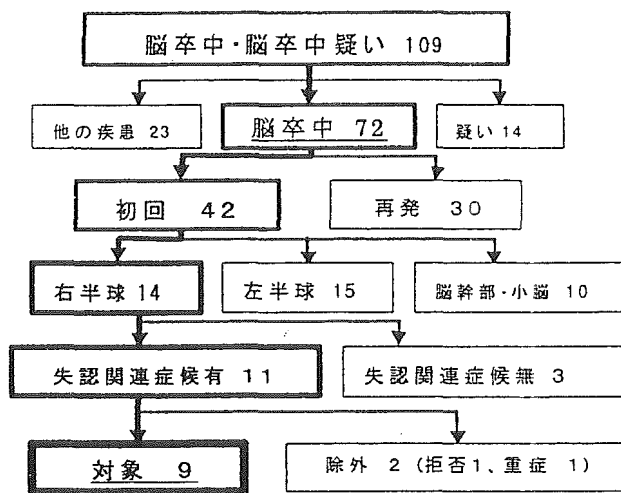


図1 対象者の選定過程

脳卒中患者全体72名中11名(15.3%)，初回発症右大脳半球損傷患者14名中11名(78.6%)の発症頻度。

2. 調査方法：前向き追跡調査

入院時，退院時，退院後1カ月，退院後3カ月，退院後6カ月(以下T0, T1, T2, T3, T4)の5時点での調査を実施した。T0, T1は調査病棟で，T2, T3, T4は転院先の病院あるいは自宅へ訪問し，調査した。

3. 調査項目

1) 脳卒中重症度の評価には，National Institutes of Health Stroke Scale¹³⁾ (以下，NIHSS)を用いた。これは，意識，視野，眼球運動，運動，感覚，言語，注意障害の11項目からなる神経学的障害の評価尺度であり^{13,14)}，信頼性，妥当性が高いとされる。得点範囲は0～42点で，得点が高いほど重症度が重い。急性期から発症後3カ月までの神経学的障害を評価するのに有用とされている。

2) 属性，ADL，NRDの種類

属性は，年齢，性別，疾患名，部位，合併症の有無，NRDの種類である。ADLの評価にはBarthel Index¹⁵⁾ (以下，BI)を用いた。この得点範囲は0～100点で，得点が高いほどADLが高いことを示す。NRDの有無とその種類については，神経内科専門医の診断によった。

3) Neglect行動の評価にはCatherine Bergego Scale¹⁶⁾ (以下，CBS)を用いた。これは，Neglectによる行動の評価とモニタリングを目的とし，直接観察法により患者の日常生活行動10項目(整容，着衣，食事，歯磨き，注視の方向，左上下肢の認識，聴覚性注意，移動・ぶつかる，空間見当識，身の回りのものを探す)の評価尺度であり，信頼性，妥当性が検証されている。得点範囲は0～30点で，得点が高いほどNeglect行動が高いことを示す。

4) さらに，自己の障害の認識について面接を行った。

表1 T0の対象者の属性(n=9)

年齢(歳)		66.2 ± 3.4 (49 to 80)
性別	男/女	6/3
脳卒中の種類	梗塞	7
	出血	2
NRDの種類	半側空間無視	8
	着衣失行	1
	身体失識	1
脳卒中重症度	NIHSS ¹³⁾ (Score)	11.3 ± 2.9 (1 to 26)
ADL	BI ¹⁵⁾ (Score)	21.6 ± 5.5 (5 to 55)
Neglect行動	CBS ¹⁶⁾ (Score)	14.5 ± 7.2 (1 to 24)

1) NIHSS: National Institutes of Health Stroke Scale(0~42 score) 2) BI: Barthel Index(0~100 score) 3) CBS: Catherine Bergego Scale(0~30 score) Mean ± SD(range)

4. 分析方法

T0のNIHSS総得点により対象者を3群，すなわち，軽度(0～5)，中度(6～13)，重度(14以上)^{17,18)}に分類し，重症度別にCBS得点による生活障害の特性と面接で得られた情報を基に，NRDによる生活障害を時系列に記述し，比較検討した。

5. 倫理的配慮

調査病院における院内倫理審査委員会の承認を受けた。担当医と研究者が，本研究の目的，方法，プライバシーの保護，拒否の権利について説明し，同意書に署名を得た上で実施した。

結 果

1. NRDを有するRBD脳卒中患者の割合(図1)

調査病院に入院した脳卒中および脳卒中疑いの全患者は109名，脳卒中と診断された患者は72名，うち基準を満たした患者は11名(15.3%)であった。初回発症RBD脳卒中患者14名の中で，11名(78.6%)がNRDを有していた。このうち，重篤な呼吸障害があった者，家族が拒否した者各1名を除外し，同意が得られた9名(81.8%)を本研究の対象とした。

2. 対象の属性および概要(表1, 2)

対象の概要は表1に示す。T0のNIHSS得点を用いた3群の分類は表2に示す。全対象が右利きだった。発症から入院までの期間は平均1.2 ± 0.4(範囲0～2)日だった。

3. 重症度別Neglect行動の経時的変化(図2)

1) 軽度者(図3)

a) Neglect行動

NRDが入院後すぐに消失し，5時点ともに生活障害がなかった。

b) 健康障害への認識

5時点ともに認識できていた。

表2 3群の特徴(T0-NIHSSによる脳卒中重症度)

NIHSSによる重症度分類 対象 No	軽度		中度				重度		
	1	2	3	4	5	6	7	8	9
NIHSS	1	2	6	8	12	13	16	21	26
BI	25	35	55	15	20	20	15	5	5
CBS	2	1	23	12	19	12	21	24	17
年齢(歳)	72	65	80	69	62	75	49	55	69
性別	男	男	男	女	女	男	女	男	男
脳卒中の種類	梗塞	梗塞	梗塞	梗塞	梗塞	出血	出血	梗塞	梗塞
NRD ¹⁾ の種類	DA	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg
合併症	NO	NO	NO	NO	NO	NO	NO	NO	NO

NIHSS, BI, CBS : score, 1) DA : 着衣失行, Neg : 半側空間無視, AH : 身体失識

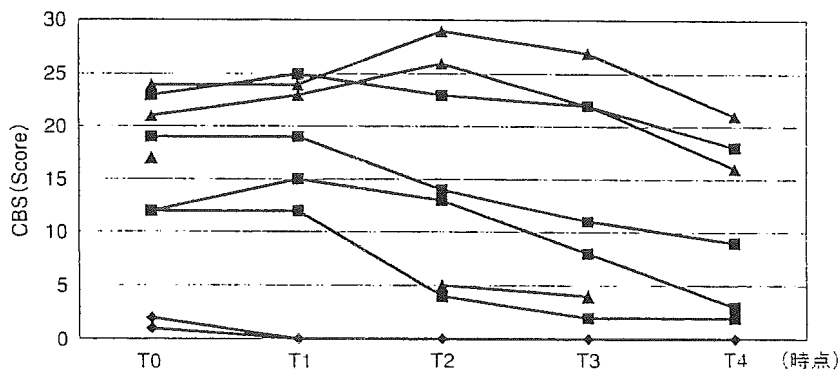


図2 CBSによる全対象の経時的変化

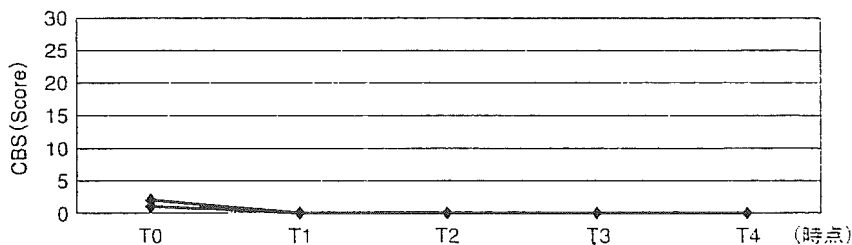


図3 軽度者の経時的変化

2) 中度者(図4)

a) Neglect行動

T0からT4まで、右手動作にもNeglect行動による生活障害があった。特にT2, T3では、生活行動拡大とともに移動動作にNeglect行動があったが、CBS得点はT3, T4で改善がみられた。うち2名はT2で、背後からの声かけや刺激にきよろきよろして振り返れなかった。また3名は、T0からT3で左側からの声かけにきよろきよろと辺りを見回す行動がみられた。

b) 健康障害への認識

4名中2名はT0で「どこも悪くない」と、麻痺や障害の認識は全くなかったが、T2では麻痺や生活障害に気づき

がみられるようになった。残り2名は、5時点ともに障害への認識はあった。特にT2からT4では、Neglectを自分なりに認識し、「なだめなだめやる」と、自宅生活について疲労や恐怖感を訴えていた。

3) 重度者(図5)

1名は退院時には脳ヘルニアを起こしていた。

a) Neglect行動

T0からT4まで、右手動作にもNeglect行動があった。T3, T4では、生活行動の拡大とともにCBS得点が高くなった。また3名は、T0からT3まで左側からの声かけに視線が合わず、追視が不安定で、動作中にきよろきよろと辺りを見回しては動作への集中が途切れていた。

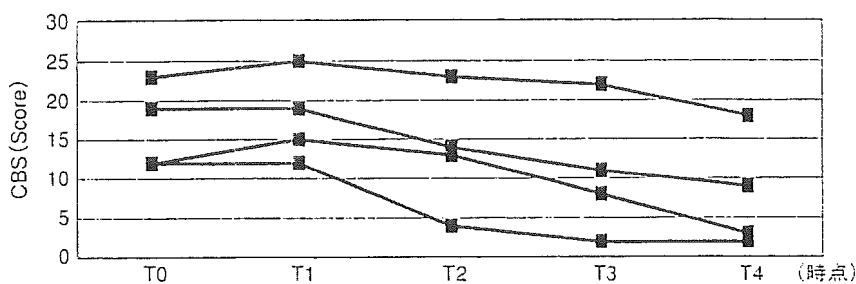


図4 中度者の経時的変化

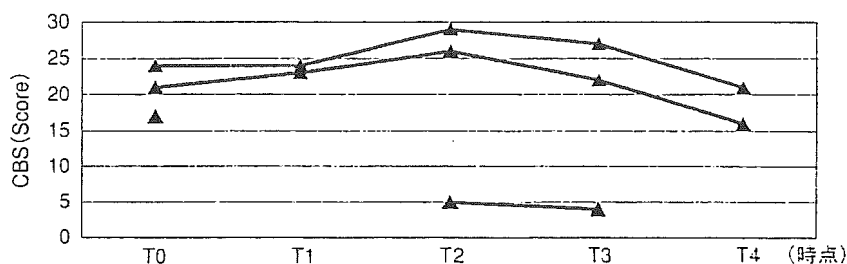


図5 重度者の経時的変化

b) 健康障害への認識

T0では入院したことを「よくわからない」と認識し、T1で徐々に麻痺への気づきがみられた。しかし、T4までも麻痺への気づきさえも不完全であり、Neglect行動にも気づきが見られなかった。さらに、麻痺側の脱臼という健康障害をも全く認識できなかった。

考 察

1) Neglectの発生頻度について、急性期から追跡調査したとき、本研究のサンプルでは初回発症RBD脳卒中患者の78.6%と高い発現頻度で出現していた。これは先行研究⁴³⁾と一致し、NRDに伴う生活障害は重要な障害だと考えられる。

2) 従来、焦点が当たってこなかった脳卒中の急性期から、Neglect行動と生活障害に焦点を当てて、退院後6カ月の慢性期まで、その自然経過を調査し記述したという点で本研究は新しい。さらに、入院時の脳卒中の重症度分類により考察すると、入院時の重症度が中度以上であれば、急性期から慢性期にもNeglect行動と生活障害が継続することが考えられる。また、入院時の脳卒中の重症度別に、その生活障害の変化に特徴があることを示し、さらに、入院後早期から慢性期までの生活障害を予測し得るという点で意義があると考えられる。

従来、Neglect行動と生活障害について、超急性期の入院時から慢性期の退院後6カ月まで追跡した研究はない。本研究は、重症度別に軽度者はNeglectが早期に消失するという従来の知見と一致している。

次に、中度者と重度者にはT0からT4まで右手動作にも生活障害がみられた。従来Neglectは、左側の空間認知障害としてとらえられているが、本研究の対象では、Neglect行動が両手動作にも出現しており、半側性の障害ではない重要な生活障害であることを示している。これは、先行研究⁴⁴⁾で示されたように、長期にわたる機能障害、セルフケア障害の1要因と考えられる。今後、NRDによる生活障害を評価する指標に取り入れ得るだろう。

しかし、中度者と重度者には違いがあり、T2、T3は生活行動拡大とともに移動動作にNeglect行動が出現する時期であり、CBS得点に変化がみられる時期だろう。しかし、中度者のCBS得点はT3、T4に改善がみられる一方、重度者はCBS得点には改善がみられず高くなった。

NRDの自然経過がいまだに不明であり、知見は得られていないため、この時期に変化し生活障害の内容に違いが生じ得るという点で、新しくこの時期に着目する必要性が考えられる。

さらに、T0からT4までに変化するものの日常生活に出現している注視の特徴は、視覚を介した方向性注意障害の兆候が出現していると考えられる。特に、中度者にみられた背後の空間からの刺激への認知障害は、外見上この障害はわかり難く、自宅退院が可能である中度者にとっては、多方向から刺激を受ける機会が多くなり、重要な生活障害である。現在、この点に関する評価やケアへの知見は明らかではない。この日常生活に現れた患者の視線の反応の特徴に注目するという知見は、従来のNeglect検査よりも簡単に観察評価でき、ケア提供に活

用できるという点で新しく有用だろう。

最後に自己の障害への認識については、中度者である程度認知能力が保たれている場合は、改善しないNeglectや障害を認識し、自分なりに向き合い工夫することが必要となると考えられる。長期的な認知面へのケアが必要であり、今後の課題だろう。

一方、重度者は、入院後早期から退院後6カ月までも、麻痺や生活障害をも認識できないという障害が明らかになった。この点に対する観察方法や対応についての知見はほとんど知られておらず、入院後早期から自己の障害への認識を患者に問う必要があるといえよう。この自己の現状認識における乖離は、「病態失認」に類似したRBDに合併する症候かもしれない。

本研究の限界には対象数が少ないことが挙げられる。今後は対象数を増やし、NRD患者の生活障害の核となる障害を構造化していく必要がある。これらが明確化できれば、入院後早期から退院後の生活障害の特性を予測し評価する看護ケアを提案できると考える。

結 論

NRDを有する初回発症RBD脳卒中患者9例の入院時から退院後6カ月の追跡調査から、

1) RBDでは、急性期の発現頻度からみてNRDに伴う生活障害が広く起こり得る問題であり、退院後6カ月にも重要な障害であることを示した。

2) 脳卒中重症度分類による時系列変化の特徴から、発症後早期に軽度な患者は、早期にNRDが消失し生活障害がないこと、発症後早期に中度以上の患者には、入院時から退院後6カ月までもNRDと生活障害が残ることを明らかにした。

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