The Role of Medical Practitioners in Clinical Pathways for Stroke

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Abstract

Stroke is the number one causative disease for conditions requiring care. Considering the sequelae of stroke as well as vascular dementia, vascular parkinsonism, fall-related fractures, and disuse syndrome, involvement in clinical pathways for stroke is perhaps the most important issue for healthcare practitioners.

In order to initiate medical treatment immediately after the onset of stroke, first it is vital to suspect that a patient is having a stoke. If one or more symptoms of "facial distortion," "arm paralysis," and "dysarthria" are present, there is a high possibility of stroke. Spreading the use and knowledge of the Cincinnati Prehospital Stroke Scale (CPSS) broadly would help people not to hesitate to call an ambulance.

In order to prevent the onset and recurrence of stroke, I wish to address risk factors that can be corrected or modified, such as hypertension, diabetes, hyperlipidemia, atrial fibrillation, obesity, smoking, alcohol consumption, and lack of physical exercise. Increased efforts to carefully respond to transient cerebral ischemic attacks can further reduce the overall need for long-term care from stroke.

Key words Medical practitioners, Stroke, Regional medical liaison

Introduction

According to the Year 2007 Comprehensive Survey of Living Conditions conducted by Ministry of Health, Labour and Welfare of Japan, stroke is the number one causative disease (21.5%) for elderly people aged 65 years old and over who require long-term care (**Fig. 1**).[1] Considering likely consequences such as a broad range of cerebrovascular diseases including vascular dementia and vascular parkinsonism as well as fall-related fractures caused by hemiplegia and debilitation or disuse syndrome caused by ADL deterioration, measures for stroke is an issue of the utmost importance for medical practitioners.

October 2005 marked a beginning of a new era for cerebral infarction treatment in Japan, with the approval of tissue plasminogen activator (t-PA)—a formulation that can produce a patient recovery if administered within 3 hours of the onset—for health insurance coverage.[2] Additionally, under the medical care plans since Fiscal Year (FY) 2008, each prefecture is required to construct its own regional medical liaison system for the four diseases (cancer, stroke, acute myocardial infarction, and diabetes) and five services (emergency medical care, medical care in case of disasters, medical care in remote areas, perinatal medical care, pediatric medical care including pediatric emergency medical services). In Tokyo, construction of medical coordination system for stroke treatment and preparation of clinical pathways for stroke are currently underway (**Fig. 2**).[3]

In this paper, I consider the role of medical practitioners in clinical pathways for stroke, from the acute, convalescent, and maintenance stages to in-home care, regardless of one's field of specialization.

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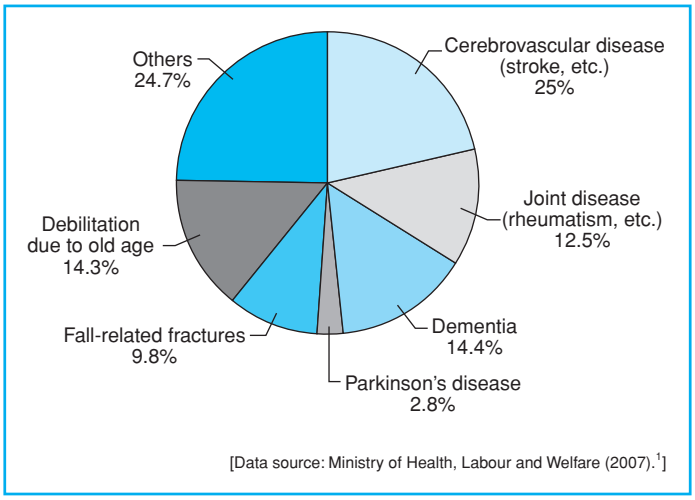

Fig. 1 Main causes for requiring care among elderly people aged 65 years and over

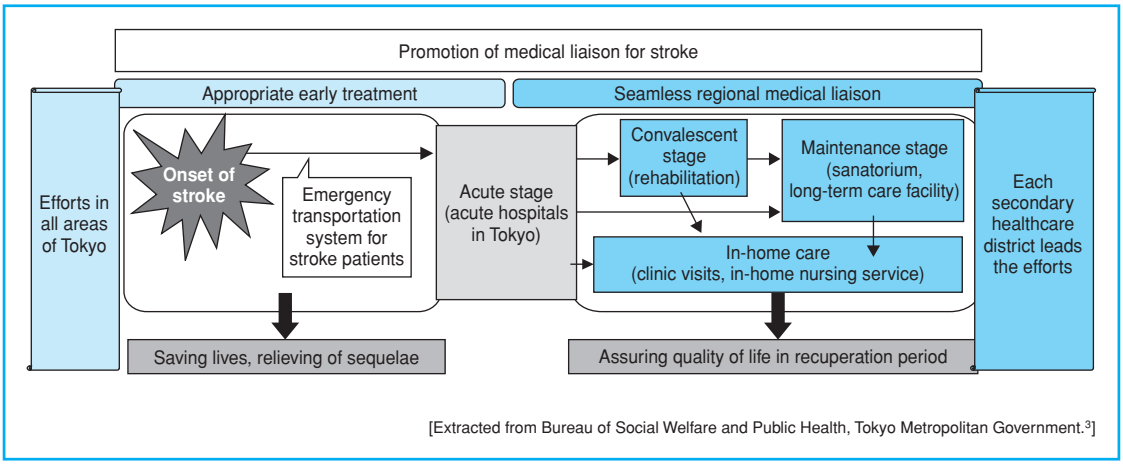

Fig. 2 Efforts to promote healthcare liaison for stroke in Tokyo, Japan

Suspecting Stroke

The Cincinnati Prehospital Stroke Scale (CPSS) is shown in **Fig. 3**.[4,5] If any one of three indications—"facial distortion (facial droop)," "paralysis (arm drift), or "dysarthria (slurred speech)"—is present, there is a 72% likelihood that the person is having a stroke.

Regardless of how efficient an emergency transportation system is, and how well-prepared an acute hospital operates, there can be no hesitation between the onset of a stroke and the mobilization of an ambulance. Under no circumstances a physician should advice "Let's wait and see" or "Drink some water and rest." Instead, encourage people to call for an ambulatory service. If a physician suspects a stroke in a patient in the examination room, the physician should call an ambulance.[6]

Considering only three items need to be checked, the knowledge and use of CPSS should be promoted widely among local residents and facilities for the elderly. Any medical practitioners should also learn it as part of their knowledge.

Facial droop: Have the patient smile or show his/her teeth.
- Normal: Both sides of face move equally.
- Abnormal: One side of face does not move as well as the other (or at all). In the drawing below, the right side of the face is paralyzed.

Arm drift: Have the patient close his/her eyes, and ask to hold the arms straight out in front for 10 seconds.
- Normal: Both arms move equally or not at all.
- Abnormal: One arm does not move, or one arm drifts compared to the other.

Speech: Have the patient speak.
- Normal: Spoken with correct words with no slurring.
- Abnormal: Spoken with slurred or inappropriate words or mute

Interpretation: If any one of these three indications is present, there is 72% likelihood of stroke.

[Extracted from Japanese Society for Emergency Medicine.[3]]

[Images courtesy of Herusu Shuppan, reproduced with permission.[3]]

Fig. 3 Cincinnati Prehospital Stroke Scale (CPSS) (as it appears in the PSLS Course Guidebook[3])

Cooperating with Acute Hospitals

When a patient who is suspected of having a stroke is transported to an acute hospital, sometimes the patient's local primary care physician is left unaware of the situation for a while. With the continuing aging of Japanese society, the number of people suffering stroke is sure to increase more in the future.

My recommendation to primary care physician is to provide a so-called "information sheet" to an outpatient who is at particular risk. Regularly checking and renewing its content would create and enhance a sense of security and trust in relationships with his patients and the family members as well as with other hospitals and clinics.

The information sheet should include the patient's name, gender, date of birth, and emergency contact information. Medical information, such as the name of the patient's primary healthcare institution and its contact information, name of the patient's primary care physician and the department, the patient's normal vital signs, degree of need for long-term care, medical history, allergies, prescriptions, and any special instructions, should also be listed.[7]

Making Efforts to Support In-Home Care

According to recent data, approximately 70% of strokes are cerebral infarctions, 20% are cerebral hemorrhages, and 10% are subarachnoidal hem-

Table 1 Preventing the occurrence of stroke: Risk Factors that can be modified or corrected

1) Hypertension	5) Obesity
2) Diabetes	6) Smoking
3) Hyperlipidemia	7) Alcohol consumption
4) Atrial fibrillation	8) Lack of physical exercise

orrhages. Of all the suspected stroke cases that emergency service transports to hospitals, 40% of the cerebral infarction patients who were able to receive t-PA therapy—although their number may be small—make recovery with almost no sequelae. Nonetheless, patients with stroke sequelae will no doubt continue to comprise a large proportion of the people who require care.

The role of medical practitioners in in-home healthcare goes without saying—it is to maintain friendly healthcare that supports the lives of patients and their families. Acquiring a perspective of rehabilitation is also desirable for maintaining lifestyles of the patients.

Promoting Stroke Prevention and Public Education

Above all, preventing the occurrence of strokes is the utmost important task for medical practitioners, in addition to preventing reoccurrence. **Table 1** shows risk factors that can be corrected or modified.

With regard to any of these risk factors, the most important thing is building up the everyday efforts of medical practitioners. It is vital that medical practitioners take a stance of continually updating and refining their level of practice.

Responding to Transient Ischemic Attack (TIA)

Reportedly, approximately 30% of patients who suffer cerebral infarction have previously experienced TIA (transient ischemic attack). Although symptoms of these two diseases are similar, TIA patients recover within several minutes to an hour. Thus, it is possible for people to take such events lightly, saying "Great, you're back to normal." Differentiating a TIA from a full-blown cerebral infarction is impossible—only time will tell. This is one common reason for delays in calling for an ambulance.

The general public needs to be aware of TIA as a warning sign that "the brain is in danger." People should be encouraged to seek medical care including consultation, tests, and treatment, when TIA is suspected. Medical practitioners should also consider these aspects fully when seeing patients.

Conclusion

This paper has discussed the role of medical practitioners in clinical pathways for stroke; to suspect stroke, provide information to acute hospitals, support in-home care, promote stroke prevention and public education, and respond to TIA cases.

It is my sincere hope that, by promoting efforts of medical coordination systems, clinical pathways for stroke and medical practitioners, stroke patients' need for long-term care can be reduced overall.

References

1. Year 2007 Comprehensive Survey of Living Conditions. Comprehensive Survey of Living Conditions Office, Social Statistics Division, Statistics and Information Department, Minister's Secretariat, Ministry of Health, Labour and Welfare, Japan; 2007. (in Japanese)
2. Kondo T. Medical topics (the brain and nervous system): application of t-PA for stroke. Japan Physicians Association Journal. 2006;20(5):448. (in Japanese)
3. The Efforts for Medical Liaison for Stroke in Tokyo. Bureau of Social Welfare and Public Health, Tokyo Metropolitan Government. [http://www.fukushihoken.metro.tokyo.jp/iryo/iryo_hoken/nousottyuutorikumi/index.html, accessed 2010 Sep] (in Japanese)
4. Japanese Society for Emergency Medicine (editor-in-chief), PSLS Guidelines Review Committee (ed.). PSLS Course Guidebook. Tokyo: Herusu Shuppan; 2007. p.116. (in Japanese)
5. PSLS Guidelines Review Committee. Framework for Prehospital Stroke Life Support (PSLS) [CPSS diagram and explanation is available for download at http://jsem.umin.ac.jp/psls/PSLS_kossi070706.pdf] (in Japanese)
6. Kondo T. Medical topics (the brain and nervous system): from the 2004 treatment guidelines for stroke, especially with regard to cerebral infarction. The Journal of Japan Physicians Association. 2004;19(4):333. (in Japanese)
7. Kondo T. Preface: Patients' Information Sheet. Tokyo Physicians Association Journal. 2009;24(3):161. (in Japanese)