June 7, 2021

STROKE SPECIAL INTEREST GROUP

Academy of Neurologic Physical Therapy

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Stroke Corner Article Review
Right vs Left Neglect and Functional Recovery

Thanks to Katie Newhouse, DPT, NCS for reviewing this week's article!

Summary topic title: Influence of right versus left unilateral spatial neglect on the functional recovery after rehabilitation in sub-acute stroke patients

Article reference: Yoshida, T., Mizuno, K., et al. Influence of right versus left unilateral spatial neglect on the functional recovery after rehabilitation in sub-acute stroke patients. Neuropsychological Rehabilitation 2020, DOI: 10.1080/09602011.2020.1798255

Definitions:

· **Unilateral spatial neglect (USN):** the inability to detect, respond, or orient towards stimuli present on the contralateral side of the hemispheric lesion.

· **Behavioral Inattention Test (BIT):** a standard test used to assess USN. The conventional test consists of 6 subscales (line crossing, letter cancelation, star cancellation, figure and shape copying, line bisection, and representational drawing), with a score ranging between 0-146; a higher score

indicates better spatial awareness. The cut-off score is 129 in the original version, whereas it is 131 in the Japanese version.

· **Mini-mental state examination (MMSE):** simple examination used to evaluate a decline in cognitive function (faculty of orientation, memory, calculating ability, language ability, constructional ability) using a verbal questionnaire.

· **Motor score on the Stroke Impairment Assessment Set (SIAS-M):** comprehensive assessment for functional stroke impairment and consists of motor function, tone, sensory function, range of motion, pain, trunk function, visuospatial function, speech, and sound side function. The motor score is composed of five items that assess functions of the arm, finger, hip, knee, and ankle.

· **Functional independence measure (FIM):** developed to ensure uniformity in assessing ADL, includes motor and cognitive score and is subdivided into 18 items. The total score ranges from 18 to 126, with a higher score indicating greater independence in ADL.

Background/Purpose of article:

· USN occurs in approximately 40% of patients in the acute phase and can persist for more than one year after onset.

· Previous studies have suggested that USN was one of the major negative predictors of functional outcomes of ADL after rehabilitation.

· Studies report that USN increased risk of falls during a hospital stay, impeded independent gait and stair training at the time of discharge from the hospital, and decreased functional mobility in the community.

· Fewer patients experience right-sided USN compared to left-sided USN. The clinical impact of right-sided USN has been poorly investigated compared to left-sided USN.

· The main aim of this study was to investigate the clinical impacts of left- and right-sided USN, as assessed by standardized battery, in stroke patients in the sub-acute rehabilitation unit in Japan. The study aimed to evaluate the differences in clinical characteristics between left- and right-sided USN and their respective influences on rehabilitation outcomes.

Methods of interest:

· This study retrospectively reviewed the medical records of 339 inpatients who had a cerebrovascular accident with supratentorial lesions between January 1st, 2014 and December 31st, 2016. 193 patients were included in the analyses.

· In Japan, patients who experience a stroke are transferred to a rehabilitation hospital within 60 days after the onset of symptoms, according to the legal health insurance system. The time between stroke onset and admission to a rehabilitation hospital is 3-5 weeks, and the average length of hospital stay is 3-4 months.

· Based on the total score of the Behavioral Inattention Test (BIT), patients were assigned to the USN+ or USN- group. Patients with a total score of </=131 were considered USN+, according to previous research. USN+ and USN- patients were further classified based on right or left hemisphere damage.

Results of interest:

· The incident rate of USN was 43.5% for all patients, 48.4% for patients with right hemisphere damage, and 31.7% for patients with left hemisphere damage. The incidence of USN was significantly higher in patients with right hemisphere damage than in those with left hemisphere damage ($p<0.05$).
· The home discharge rate in patients with right hemisphere damage was significantly lower than that in patients with left hemisphere damage (right: 77% vs left: 89%).
· The length of stay was significantly longer and the home discharge rate was significantly lower in the USN+ group ($p<0.01$) than in the USN- group.
· The initial motor, cognitive, and total FIM, initial SIAS-M, and initial MMSE were significantly lower in the USN+ patients than in the USN- patients ($p<0.001$). In contrast, the incidence rate of aphasia was not significantly different between the USN+ and USN- groups. As expected, the incidence rate of aphasia was significantly higher in patients with left hemisphere damage than those with right hemisphere damage.
· In this study, the patients with USN were significantly older than those without USN.
· USN was an independent predictor of rehabilitation outcomes regardless of the neglected side.
· USN is a strong predictor for poor rehabilitation outcomes.
· The initial BIT score was not significantly different between left-sided USN and right-sided USN.
· USN affected motor FIM recovery more than cognitive FIM recovery, regardless of the damaged hemisphere.

Clinical Implications:
· It is clinically important to assess USN in patients with both left and right hemisphere damage.
· Length of stay (LOS) estimates should take into account the presence of USN, which was shown to result in a longer LOS. However, it cannot be concluded that USN solely influences LOS and the rate of discharge based on these results because the patients with USN were significantly older than those without USN in this study.
· USN could suppress motor recovery and reduce motor learning, increasing the risk of falls, and the negative effects of functional mobility in the community.
· The successful treatment of USN results in better functional recovery.
· Further studies are needed to investigate the effects of USN improvement on rehabilitation outcomes. Additionally studies should determine the most effective treatments for both right-sided USN and left-sided USN.

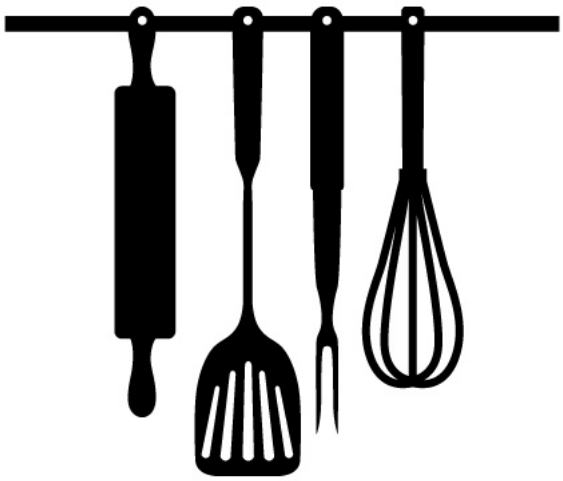
Strokecast Kitchen Tips for Stroke Survivors

Have you checked out Strokecast?

Strokecast is the podcast where a Gen X stroke survivor explores rehab, recovery, the frontiers of neuroscience and one-handed banana peeling by helping stroke survivors, caregivers, medical

providers and stroke industry affiliates connect and share their stories.

Episode 126 of Strokecast includes 11 pratitcal tips for Stroke Survivors to be safe and productive in the kitchen after a stroke. Bill also provides links to his recommended tools. Check it out at the button below!



STROKECAST KITCHEN PODCAST

ANPT Conference Registration Opens June 28!

Plans for the Academy of Neurologic Physical Therapy Annual Conference are coming together with **21 sessions the "live" weekend of October 1-3, 2021** and **25 on-demand sessions available September 8-November 22**. A poster hall, exhibit hall, video chats, Q&A sessions and a great platform for networking will make this a neuro education weekend you don't want to miss!

Registration opens June 28th
with the first 100 registrants receiving a special "bonus"!

Updates will be announced in future Action Potential issues and on the **conference web page**.

ANPT Award Nominations are Open! Nominate a Great Stroke Clinician or Researcher

Do you have a colleague who deserves to be recognized by their peers for their great work? Now is the time to submit a nomination for the ANPT 2022 Awards **here**!

The individual awards are:

- Service to the Academy Award
- Excellence in Neurologic Research Award
- Excellence in Neurologic Education Award
- PT Clinical Excellence in Neurologic Physical Therapy Award
- PTA Clinical Excellence in Neurologic Physical Therapy Award
- Outstanding Clinical Innovator in Neurologic Physical Therapy Award
- Outstanding Advocacy in Neurologic Physical Therapy Award
- Early Career Professional Award
- SIG Service Award
- SIG Research Award
- CSM Abstract: Early Career Scientist Awards

Award nominations are due by August 1st and winners will be recognized at the CSM 2022 in San Antonio!

VISIT THE STROKE SIG ONLINE!



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