Slipping through the cracks: unilateral neglect assessment

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Introduction

Patients with stroke commonly suffer from unilateral spatial neglect, which often **prolongs their rehabilitation stay** [1,2]

Unilateral neglect: **inability to respond to stimuli** on the side of the body or space **contralateral** to the lesioned hemisphere [3]

[1] Klinke ME, Hafsteinsdóttir TB, Hjaltason H, Jónsdóttir H. Ward-based interventions for patients with hemispatial neglect in stroke rehabilitation: a systematic literature review. Int J Nurs Stud 2015; 52: 1375–1403.

[2] Winstein CJ, Stein J, Arena R et al. Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke 2016; 47: e98–e169.

[3] Grattan ES, Woodbury ML. Do neglect assessments detect neglect differently? Am J Occup Ther 2017; 71(3): 7103190050p1–9.

Unilateral Neglect Assessment

Assessment methods: paper-and-pencil tasks, observations of patients' ability to engage in ADL [1-2]

UN addressed by **multidisciplinary rehabilitation teams**; screening could be conducted by nurses [3-4]

However, UN is **underrecognized** in clinical practice [5]

[1] Grattan ES, Woodbury ML. Do neglect assessments detect neglect differently? Am J Occup Ther 2017; 71(3): 7103190050p1–9.

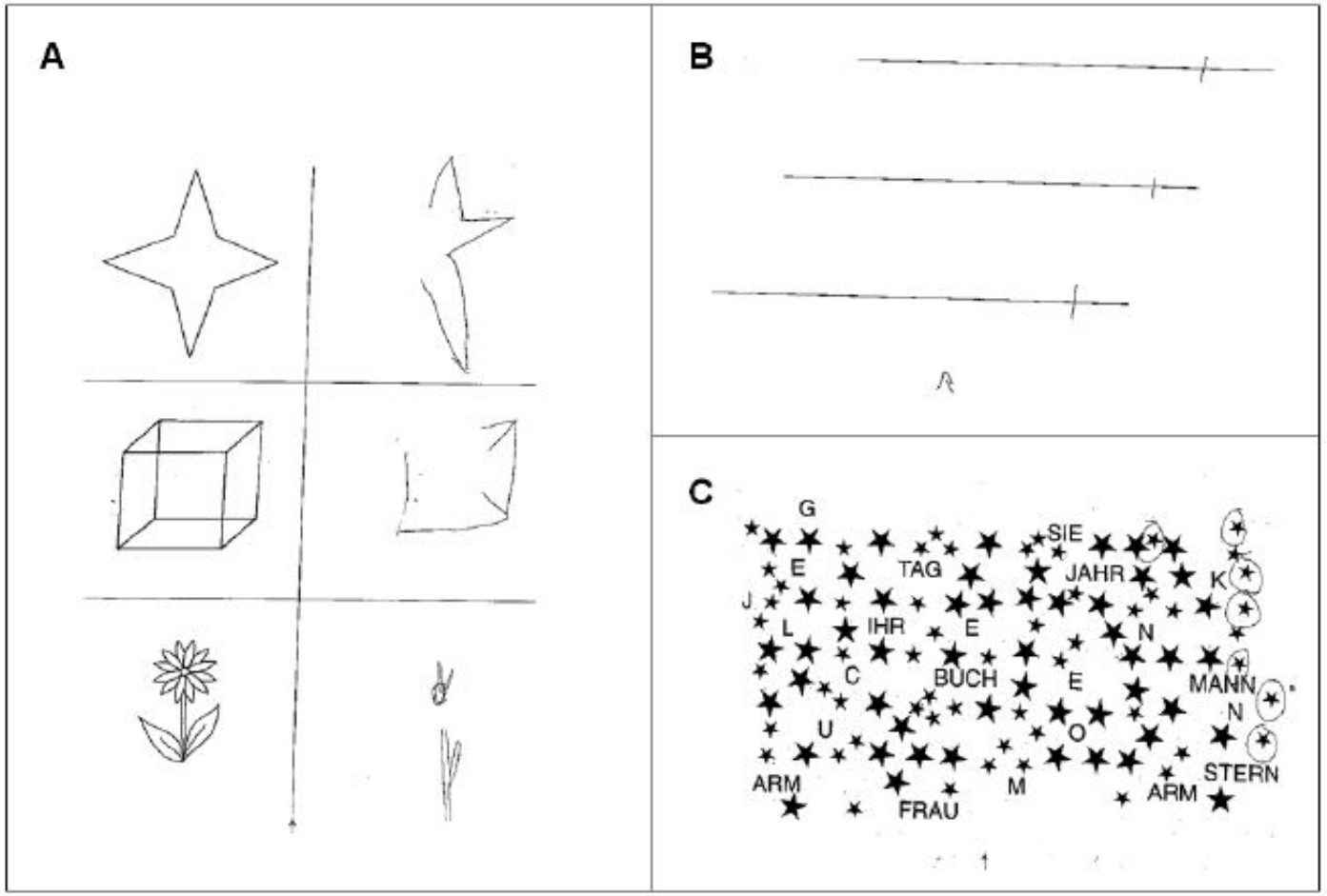
[2] Lee BH et al. The character-line bisection task: a new test for hemispatial neglect. Neuropsychologia 2004; 42: 1715–1724.

[3] Miller EL et al. Comprehensive overview of nursing and interdisciplinary rehabilitation care of the stroke patient. Stroke 2010; 41: 2402–2448.

[4] Jepson R et al. Unilateral neglect: assessment in nursing practice. J Neurosci Nurs 2008; 40(3): 142–149.

[5] Chen P et al. Interdisciplinary communication in inpatient rehabilitation facility: evidence of under-documentation of spatial neglect after stroke. Disabil Rehabil 2013; 35(12): 1033–1038.

Paper-and-Pencil Tasks [1]



[1] Eschenbeck, P. Neglekt, Extinktion, und Defizitbewusstsein. Köln: Universität zu Köln, 2011. Available from https://d-nb.info/1010832646/34

The Aim

To determine the prevalence of unilateral neglect in Czech patients with acute stroke

Part of the aim was to assess the feasibility of such tests in nursing clinical practice in the Czech Republic

Methods

Neurological department of a regional Czech hospital in April 2017

13 patients (10 men; average age 66.9 ± 14.7)

The patients completed two paper-and-pencil tasks:

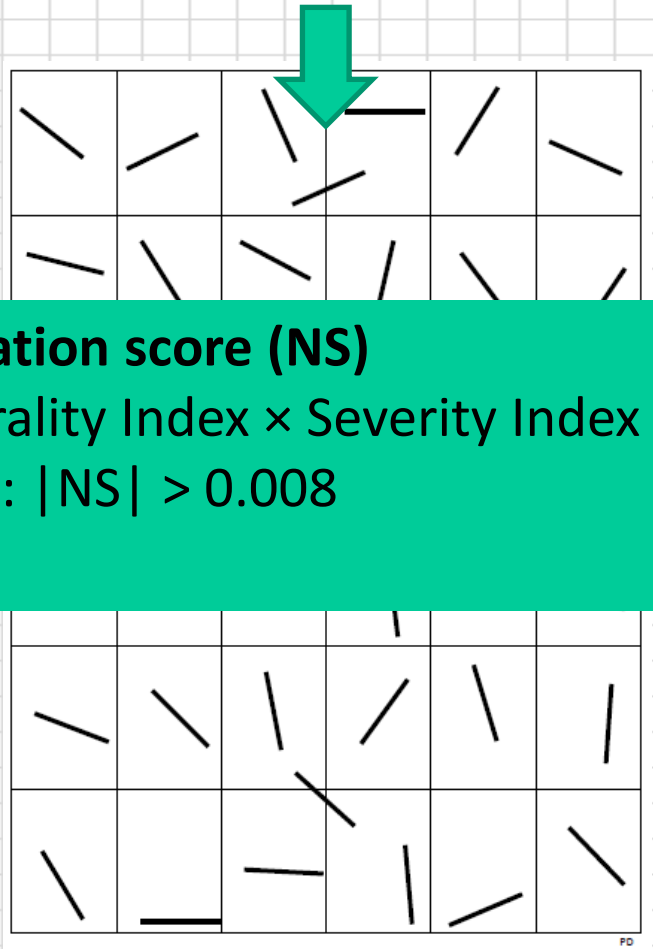
- **Line bisection (LB) test**
- **Line cancellation (LC) test**

Administration and interpretation by a neuroscience nurse, based on Lee et al.'s procedure [1]

[1] Lee BH et al. The character-line bisection task: a new test for hemispatial neglect. Neuropsychologia 2004; 42: 1715–1724.

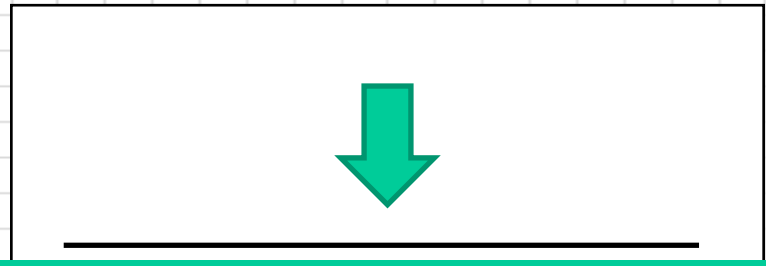
Methods

Line Cancellation Test (LC) [1]



Normalization score (NS)
NS = Laterality Index × Severity Index × 10
Abnormal: |NS| > 0.008

Line Bisection Test (LB) [1]



Deviation score (DS)
DS ={|Deviation from midpoint| / 121} × 10
Abnormal: Average DS > 2.533

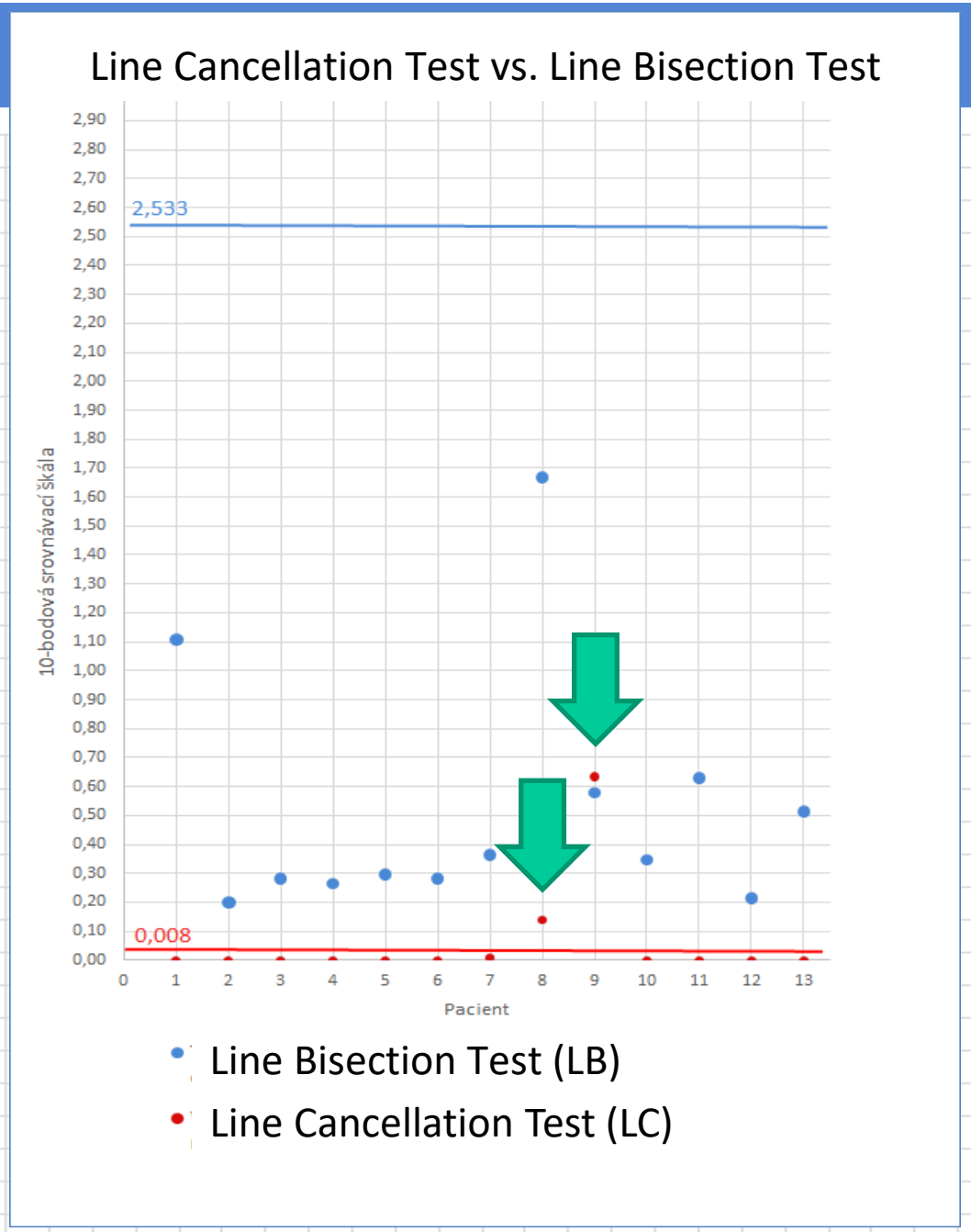
- Standard paper size (A4)
  (297 mm × 210 mm)

[1] Lee BH et al. The character-line bisection task: a new test for hemispatial neglect. Neuropsychologia 2004; 42: 1715–1724.

Results

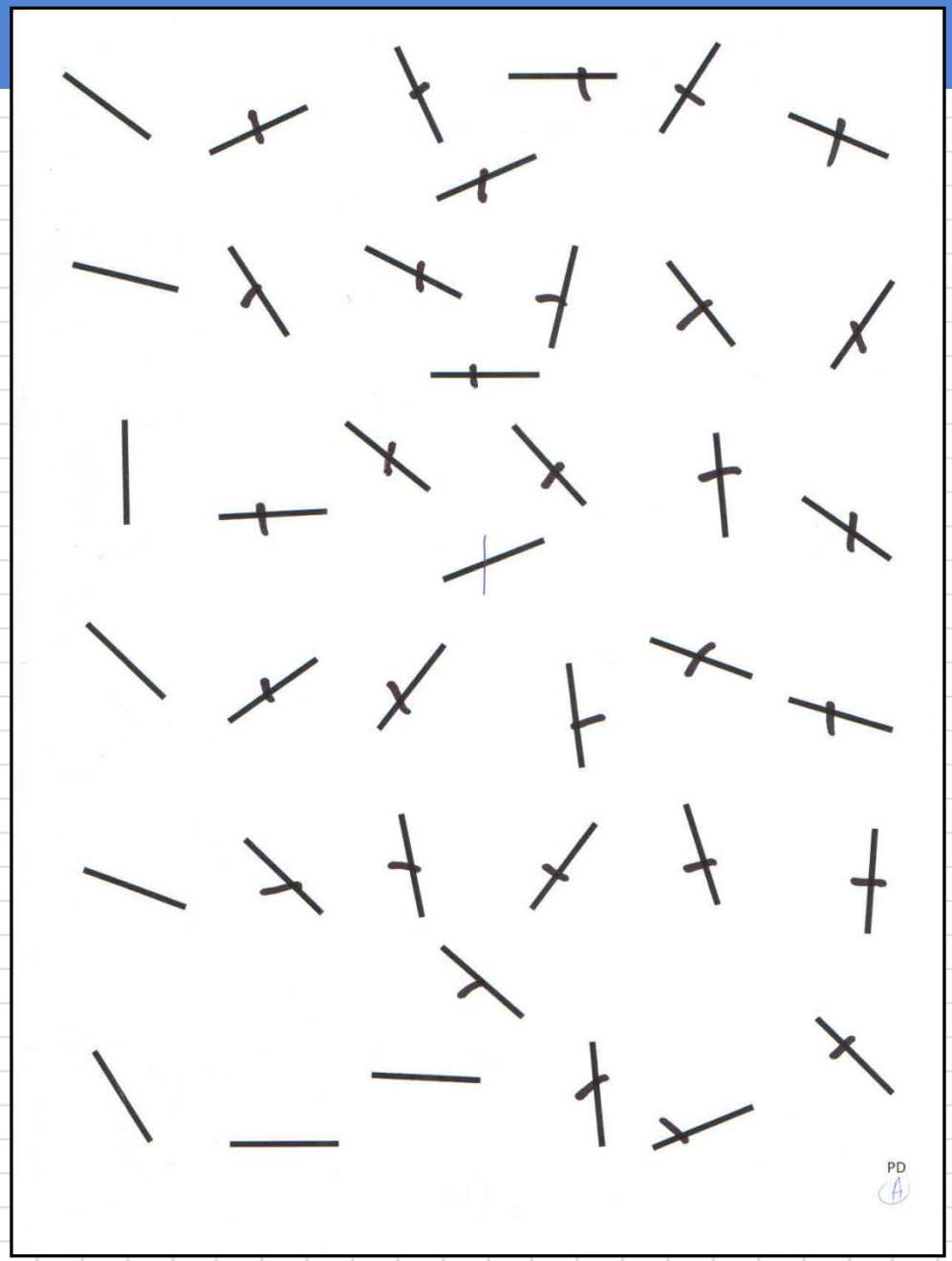
Line Cancellation Test: abnormal in 2 patients

Line Bisection Test: normal in all patients



Results

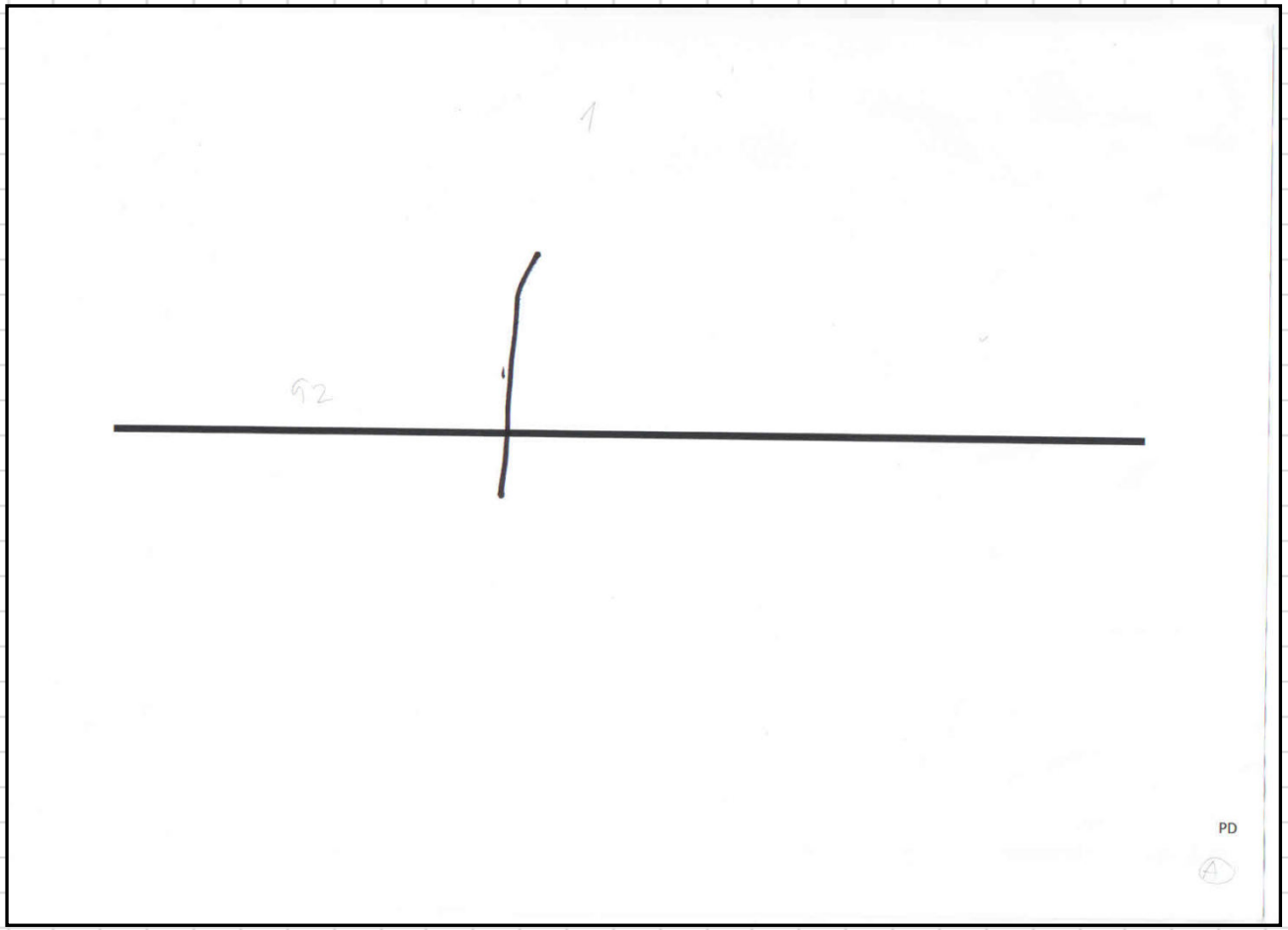
- **Line Cancellation Test (patient no. 9):**
- Normalization score (NS) = **0.635**



Abnormal: |NS| > 0.008

Results

- **Line Bisection Test (patient no. 8 – attempt no. 1):**
- 29 mm deviation to the left (from the middle of the line)
- Average deviation score = **1.67**



Abnormal: Average deviation score > 2.533

Discussion

Lee et al.: prevalence of **UN = 68.8%** based on a **battery of six tests** (sensitivity 43.6–90.9%) [1]

This pilot study: the results suggest that **0–15.4%** of the patients could have UN

Subsequent study (n= 54): UN could be present in **up to 25%** of the patients [2]

The results may have differed due to **low sensitivity** of individual tests

[1] Lee BH et al. The character-line bisection task: a new test for hemispatial neglect. Neuropsychologia 2004; 42: 1715–1724.

[2] Mandysova P. Psychometrické charakteristiky sebehodnotících škál bolesti pro pacienty s cévní mozkovou příhodou a subjektivně vnímaná obtížnost těchto škál při sdělování pociťované intenzity bolesti [Psychometric characteristics of self-report pain scales for patients with stroke and subjectively perceived complexity of these scales as they report the intensity of the experienced pain] (Unpublished post-doctoral dissertation). University of South Bohemia, České Budějovice, Czech Republic; 2017.

Conclusion

UN screening using selected tests could be **feasible in Czech nursing clinical practice**

However, **a combination of tests** may be necessary

It should be determined whether an implementation of a **multidisciplinary evidence-based UN screening program** targeting patients with stroke could be beneficial

This could in turn facilitate the involvement of patients with UN in **rehabilitation programs** and **contribute to their recovery**

Thank you...

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