May 2018 Abstract 1

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Hello members.

For the month of May we are focusing on NEGLECT. We will provide you an abstract each Monday related to neglect. Week 1 is related to prediction of neglect on community mobility and upper extremity function. As you may guess, the outcome is worse if you have neglect.
Of note, is limited interventions related to neglect, we would love to hear how individuals are combating neglect in clinical practice. Follow us on twitter/Facebook/instagram to share your ideas.
At the end of the month, we will provide a clinical pearl about treating neglect.
The Stroke SIG is also focusing on understanding, integrating outcome measures, you will find links to the measures reported in these abstracts below. These are often simple, informative measures to help you in your practice.

Oh-Park, M., et al. (2014). "Severity of spatial neglect during acute inpatient rehabilitation predicts community mobility after stroke." PM R **6**(8): 716-722.
https://www.pmrjournal.org/article/S1934-1482(14)00015-X/pdf

OBJECTIVE: To examine whether stroke survivors with more severe spatial neglect during their acute inpatient rehabilitation had poorer mobility after returning to their communities. DESIGN: A prospective observational study. SETTING: Acute inpatient rehabilitation and follow-up in the community. PARTICIPANTS: Thirty-one consecutive stroke survivors with right-brain damage (women, n = 15 [48.4%]), with the mean (standard deviation) age of 60 +/- 11.5 years, were included in the study if they demonstrated spatial neglect within 2 months after stroke. METHODS: Spatial neglect was assessed with the Behavioral Inattention Test (BIT) (range, 0-146 [a lower score indicates more severity]) and the Catherine Bergego Scale (range, 0-30 [a higher score indicates more severity]). A score of the Behavioral Inattention Test <129 or of the Catherine Bergego Scale >0 defined the presence of spatial neglect. MAIN OUTCOME MEASUREMENTS: The outcome measure is community mobility, defined by the extent and frequency of traveling within the home and in the community, and is assessed with the University of Alabama at Birmingham Study of Aging Life-Space Assessment (range, 0-120 [a lower score indicates less mobile]). This measure was assessed after participants returned home >/=6 months after stroke. The covariates were age, gender, functional independence at baseline; follow-up interval; and depressed mood, which may affect the relationship between spatial neglect

and community mobility. RESULTS: A lower Behavioral Inattention Test score was a significant predictor of a lower Life-Space Assessment score after controlling for all the covariates (beta = 0.009 [95% confidence interval, 0.008-0.017]); P = .020). The proportion of participants unable to travel independently beyond their homes was 0%, 27.3%, and 72.7% for those with mild, moderate, and severe acute neglect, respectively (Catherine Bergego Scale range, 1-10, 11-20, and 21-30, respectively). CONCLUSIONS: Our result indicates that acute spatial neglect has a negative impact on regaining of functional mobility in the community. Specific screening and treatment of spatial neglect during acute stroke care may be necessary to improve long-term mobility recovery.

Clinical Point of View

1. Define Spatial neglect: A cognitive disorder that affects perception and/or motor execution; impacts spatial attention or inattention. Failure to attend to stimuli presented in the opposite side of space. Failure to act on contralesional stimuli despite preserved motor strength.
2. As therapists, we know how it impacts mobility, collisions with doorways, difficulty avoiding objects, veering gait. Poor fitness to drive.
3. Consider that 40% of patients show a persistent spatial deficit at 1 year.
4. Life space as an assessment. Is a report of an individual's actual whereabouts, which suggests functional mobility and level of social participation. Life –space assessment. It includes 6 life space zones, bedroom (zone 0, home (zone 1), immediately outside home (zone 2), neighborhood (zone 3), town (zone 4), beyond town (zone 5). Frequency and level of assistance.
5. The importance of spatial cognition, **need to identify treatment to counteract**. Ever after they may have "recovered" they are likely to have poorer functional recovery in the chronic phase, impacting personal care, social interactions and leisure activities.

Nijboer, T. C., et al. (2014). "The impact of recovery of visuo-spatial neglect on motor recovery of the upper paretic limb after stroke." PLoS One **9**(6): e100584.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4065089/pdf/pone.0100584.pdf

The aim of the current study was to investigate the longitudinal relationship between improvements of synergism and strength of the upper paretic limb and severity of visuo-spatial neglect during the first 52 weeks post-stroke. The longitudinal association between severity of VSN and motor impairment using Fugl Meyer motor score and Motricity Index of the arm was measured in an intensive repeated measurement design including 18 measurement sessions for each subject. Neglect was assessed using the letter cancellation test applied in a prospective cohort of 101 ischemic, first-ever, hemispheric stroke patients. All time-dependent measures were taken weekly, starting within 14 days post-stroke. From week 10 to 20 biweekly measurements are obtained. The longitudinal relationship of (bi)weekly time on improvement of motor functions and severity of neglect was investigated using random coefficient analysis and trend analyses. Fifty-one of the 101 stroke patients showed neglect at stroke onset. Less improvement of synergism and strength of the upper paretic limb was associated with more severe neglect. This association was most pronounced in the first 10 weeks post-stroke. The seemingly suppressive effect of neglect on upper-limb motor recovery appears to take place mainly during spontaneous neurological recovery of first 10 weeks post-stroke. This finding suggests that damage to large-scale white matter tracts of especially the perceptual-attention networks suppress recovery of other networks at distance in the brain suggesting a common underlying mechanism.

Clinical Point of View.

1. Define Visuospatial neglect (VSN), patients demonstrate impaired awareness for contralesional stimuli.
2. Characteristics of subjects: note they had a Mini Mental greater than 24. 51 had VSN, defined as asymmetry on at least 2 omissions on letter cancellation test. Note, none received training to ameliorate VSN. WHAT DO YOU DO to assist this?
3. More severe VSN is associated with more suppression of recovery in arm. Less improvement in the first 10 weeks if VSN and beyond 10 weeks recovery was hampered more in individuals with VSN than non-VSN.
4. Authors suggest a suppressive, inhibitory effect of VSN on improvement of motor impairment, especially over the first 10 weeks.

Measures.

1. Letter cancellation test. https://www.strokengine.ca/en/family/slct_family/
2. Fugl Meyer motor impairment. https://www.sralab.org/rehabilitation-measures/fugl-meyer-assessment-motor-recovery-after-stroke
3. Motricity Index, assesses motor impairment, https://jcphysiotherapy.files.wordpress.com/2015/02/motricity-index-mi.pdf
4. Behavioral inattention test, https://www.strokengine.ca/en/family/bit_family/ 42.00 US dollars
5. Catherin Bergego scale. https://www.strokengine.ca/en/assess/cbs/ The scale also measures self-awareness of behavioral neglect (anosognosia).

We are seeking volunteers interested in assisting with the Stroke SIG while we are growing and developing. If you are interested, please contact heather.hayes@hsc.utah.edu Heather Hayes Thank you.

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