**Background:**

Unilateral spatial neglect (USN) is a disorder characterized by decreased, and sometimes abolished, ability to orient or respond to stimuli appearing on the side of the body contralateral to the brain lesion.1 USN is an attentional deficit and is not attributed to any sensory or motor deficits.1

**Common outcome Measures for USN:2,3,4**

* **Behavioral Inattention Test (BIT):**2 the BIT scores the severity of USN in patients across six subtests including; line crossing, letter cancellation, figure and shape copying, line bisection, and representational drawing. Scores for each subtest are summed and compared to normal value ranges for each subtest. The BIT has a maximum score of 146, with a cut-off score of 129 or lower indicating presence of USN. The lower the total score, the more severe the USN.
* **Nonconventional Behavioral Inattention Test (NBIT):**2scoring reflects severity of USN and focuses on 9 different subtests compared to the BIT. The NBIT measures performance on aspects of daily life and includes; picture scanning, telephone dialing, menu reading, article reading, telling and setting the time, coin sorting, address and sentence copying, map navigation, and card sorting. The scores are totaled for each subsection and compared to normal values. 67/81 or lower is the cut-off for presence of USN. The lower the total score, the more severe the USN.
* **Diller’s Test (DT):**2another cancellation test, but used to determine presence of USN (not severity). The DT uses 108 target letters “H” randomly spread amongst 204 non-target items arranged in 6 rows across and A3 size piece of paper. Clients are supposed to cross off the “H” targets with the difference between the numbers of “H” targets crossed over the left and right sides used to determine presence of USN. Targets missed on the non-affected side minus targets missed on the effective side will indicate DT performance. If the difference is 5 or more letters missed across one side, then USN can be diagnosed.
* **The ADL Checklist for Neglect (CFN):**3measures the effects of USN in activities of daily living (eating from one side of the plate, reading one side of page/words). The CFN has 10 items with each item scored from 1-3 (1 = no USN, 3= severe USN). Score range from 10-30 with higher scores indicating more severe USN.
* **Rabideau Kitchen Evaluation Revised (RKE-R):**3assesses instrumental activities of daily living such as meal preparation. Twenty steps of each task scored on a 0-3 scale (0=independent, 3=unable to perform) for a maximum score of 120 (0-120) indicating dependence for each step.
* **Catherine Bergego Scale (CBS):**410-item checklist focusing on functional performance of ADLs. These items include; unilateral grooming and shaving, unilateral wearing of clothes (slipper/sleeve), eating food from one side of the plate, cleaning food from one side of the mouth, spontaneous unilateral gaze, “knowledge” of neglected side of body, unilateral auditory attention, unilateral collision with items, unilateral turning during navigation, locating items on neglected side. The CBS contains three conceptual spaces (personal, peripersonal, and extrapersonal), includes anosognosia scoring and has good psychometric properties.

**How does the presence of neglect affect prognosis?**

 Jehkonen et al. found that lower scores on the NBIT and BIT correlated to increased USN severity.5,6 Neglect in these measures was found to be the best predictor for poor functional outcomes at follow-up periods of 3,6 and 12 months respectively.5,6 Similarly, increased severity of USN coupled with advanced age also yielded worsened prognosis.5,6 Jehkonen et al. found that residual neglect had a profound effect on restricting ADLs and hobbies.5,6 It has been found that presence of USN leads to reduced prognosis regarding overall and cognitive communicative functional performance and outcome compared to patients without USN.7,8 Presence of USN leads to longer length of stay in a hospital and decreased rate of progress with PT.9

**Is there an association between neglect and risk of falling in persons with stroke?**

 USN has been linked with an increased likelihood of falling in persons with stroke.2 The increased likelihood of falling stems from inattention to the environment on the affected side which can lead to increased incidence of collisions with objects or people.4 Patients with USN may also be unable to detect surface level changes such as stepping off a curb or onto a rug which will also increase the likelihood of a fall. Due to the increased incidence of anosognosia in patients with USN, these patients may also be less inclined to use an assistive device which can also increase a fall risk.4

**What are the implications for physical therapy practice?**

 Rehabilitation of clients with USN outcome is affected by three factors: severity of stroke, increasing age, and timing of rehabilitation.8 Because USN can recover spontaneously within the initial weeks after stroke onset, Paolucci et al. argue that it is crucial to differentiate between acute and chronic USN and that patients with chronic USN have worse outcomes in physical therapy treatment.8 Effectiveness and efficiency in ADL performance and mobility performance after rehabilitation was significantly lower in clients with USN compared to patients without USN.8 However, cognitive rehabilitation was shown to offer improved performance on cognitive tasks and global functional outcome, although the real effectiveness of cognitive rehabilitation is debatable.8 However, treatments focused on training attention including sensory awareness, visual scanning, visual imagery, sensory manipulation/input, use of eye patches and prisms, and spatial organization have yielded some improvement in functional performance but the overall efficacy of PT remains poor.1,4,9 Visual scanning therapy and prism adaptation in addition to family training to assist patients with USN on a daily basis are the most promising current techniques available to PTs.4 The efficacy of PT rehabilitation and improved patient outcomes is limited by the fact that USN is a complex, multifaceted disorder.4 Improved early identification, routine screening and detailed measurement of deficits related to USN may improve client care and outcomes.2-4,9

References:

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