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Female Caregivers Ask Questions in the First Year of Caring

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Methods to Improve Emergency Stroke Response To Post-Cardiac Surgical Stroke Patients.
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Introduction: Primary Stroke Centers often organize “teams” to respond emergently to patients with acute stroke symptoms while hospitalized. This study’s aim was to determine accuracy of this process in identifying these patients in our community-based hospital - particularly in high-risk post-cardiac surgical patients. Methods: A retrospective review of records yielded a log of Stroke Response Team (SRT) activity from 01/2005 - 12/ 2006. Medical records were reviewed to confirm stroke diagnosis. This log was compared to our Society of Thoracic Surgeons (STS) database for post-cardiac surgical strokes for the same time period. The data were analyzed to assess the efficacy of the SRT in identifying and triaging these patients. Results: The SRT responded to 59 calls in the study period. Of these, 22 of 49 eligible records had confirmed stroke diagnoses, 5 had TIA and 22 had no stroke. Admitting diagnoses for the group were: Non-surgical cardiac: 27; surgical cardiac: 3; neurological: 10; b-other. The STS data for the same period reflected 59 confirmed strokes. Failure to honor embargo policies will result in the abstract being withdrawn and barred from presentation. Conclusions: There is significant need for an SRT response system for hospitalized patients. A total of 60 strokes were confirmed over 2 years. Our process poorly identified post-cardiac surgical strokes. Factors contributing to this problem included: attending surgeon rejection of the SRT process; difficult nursing neurological assessment in ventilated patients and lack of knowledge regarding feasibility of IA ITPA administration in these patients. Steps taken to improve SRT access for these patients: nursing and physician education on safety of IA ITPA in the post-cardiac period and implementation of “sedation vacations” every four hours for ventilator-dependent patients to strengthen nursing neurological assessment. Literature review identified other processes for prevention of post-cardiac surgical stroke including: aggressive peri-operative management of atrial fibrillation and maintenance of peri-operative blood pressure to within 10 mm Hg of baseline to sustain cerebral perfusion. Standardized order sets were modified to reflect these changes and nurses and physicians were educated regarding both practices. As of 7/3/07, 19 SRT incidents, were initiated on post-cardiac surgical patients. In conclusion, the SRT process provides an opportunity for emergent stroke prevention and response, particularly in post-cardiac surgical patients, with education and support of nursing and medical staff.

Doublet Stimulation Maximizes Force Output in Young and Older Thenar Muscle.
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Introduction: Neuromuscular electrical stimulation (NMES) is an effective and commonly used modality for the recovery of motor function in hemiplegic musculature; however, NMES can impart rapid fatigue and duration patterns that maximize force output and delay the onset of fatigue remain unclear. Hypothesis: We hypothesized that the use of an increasing stimulation frequency pattern or a stimulation pattern incorporating doublets (two rapid impulses separated by 5 ms) applied midway during a 3-minute fatigue protocol would maximize force output in the thenar: nursing and would delay the onset of fatigue when compared to a constant period and implementation of “sedation vacations” every four hours for ventilator-dependent patients to strengthen nursing neurological assessment. Literature review identified other processes for prevention of post-cardiac surgical stroke including: aggressive peri-operative management of atrial fibrillation and maintenance of peri-operative blood pressure to within 10 mm Hg of baseline to sustain cerebral perfusion. Standardized order sets were modified to reflect these changes and nurses and physicians were educated regarding both practices. As of 7/3/07, 19 SRT incidents, were initiated on post-cardiac surgical patients. In conclusion, the SRT process provides an opportunity for emergent stroke prevention and response, particularly in post-cardiac surgical patients, with education and support of nursing and medical staff.

Impaired Exercise Cardiac Output and Prolonged Oxygen Uptake Kinetics in Patients with Prior Stroke.
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Introduction: Clinically stable patients with prior stroke (STK) have a peak aerobic capacity (peak VO2) that is ~50% lower than healthy individuals. The mechanisms responsible for the impaired peak VO2 are not well established. Hypothesis: We tested the hypothesis that patients with prior STK will have reduced peak VO2 cardiac output and VO2 kinetics, as well as prolonged post-exercise VO2 kinetics compared to healthy controls (CTL). Methods: Ten clinically stable ambulatory patients with prior STK (mean ± SEM; age: 54 ± 3 years; 6 females; 7.5 ± 2.6 years post-stroke; gait speed: 43 ± 5 cm/min) and 10 healthy age- and gender-matched healthy controls (age: 54 ± 3 years; 6 females) performed recumbent cycle ergometer exercise testing to volitional fatigue. VO2 and cardiac output were measured during exercise. Post-exercise VO2 kinetics were determined throughout recovery using monoclonal modeling procedures. Data were analyzed using ANOVA and correlation regression. Significance was set at p < 0.05. Results: Peak VO2 (STK: 16.0 ± 1.2 vs. CTL: 29.1 ± 2.0 mL/kg/min; p = 0.001) and work rate (STK: 85 ± 10 vs. CTL: 173 ± 11 watts; p = 0.001) were lower in STK patients. Exercise heart rate peak (STK: 133 ± 6 vs. CTL: 157 ± 4 beats/min; p = 0.005), stroke volume (STK: 79 ± 3 vs. CTL: 92 ± 2 L/min; p = 0.002) and cardiac output (STK: 10.4 ± 0.8 vs. CTL: 14.8 ± 0.6 L/min; p = 0.001) were lower in STK patients compared to CTL. Heart rate reserve (peak - rest; STK: 59 ± 7 vs. CTL: 94 ± 6 beats/min; p = 0.001) and cardiac output reserve (STK: 6.0 ± 0.7 vs. CTL: 10.2 ± 0.5 L/min; p = 0.001), but not stroke volume reserve (STK: 19 ± 2 vs. CTL: 25 ± 3 mL/min; p = 0.128) were lower in STK patients. Post-exercise VO2 kinetics were prolonged in STK patients (77 ± 3 s) compared to CTL (55 ± 3 s; p < 0.001) and was correlated with peak exercise cardiac output (r = -0.75; p < 0.001). Conclusions: The severely reduced peak VO2 found in patients with prior STK was due to a lower peak exercise heart rate, stroke volume and cardiac output. Further, the lower cardiac output reserve was due to the blunted chronotropic response. Finally, the prolonged post-exercise VO2 kinetics suggested an abnormal metabolic efficiency throughout exercise and is associated with a lower exercise cardiac output.

Nursing and Rehabilitation Professions II

Female Caregivers Ask Questions in the First Year of Caring.
Linda L Pierce, Victoria Steiner, Univ of Toledo, Toledo, OH; Teresa Thompson; Madonna Univ, Livonia, MI

Background and Purpose: Following acute care and rehabilitation after a stroke, families must learn how to manage the survivor in the home. This sudden caring role raises many questions for family members who often feel unprepared and overburdened. The purpose of this secondary analysis was to examine the questions asked by female caregivers who continued to receive email in a web-based intervention of education and support after inpatient rehab. The subjects were six female caregivers of stroke survivors from Ohio or Michigan who were participating in a larger study on the experience of caring and had completed 48 weeks of continuous enrollment in the intervention. Data were gathered from subjects’ email messages posted to the discussion group or asked of the online nurse. Results: Most subjects were Caucasian. They ranged in age from 47 - 62 years and provided care for a spouse or parent (50%), respectively. Rigorous narrative content analysis of a total of 368 email entries, with 111 questions asked by the subjects during their participation in the web-based intervention, resulted in themes that were drawn to Friedemann’s framework of systematic organization. The core themes, including a group coherence in Friedemann’s term were from these data, as these females reached out to one another. Questions posed were often stated while sharing
Establishing the Validity and Reliability of the State Self-Esteem Scale.

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Introduction: Self-esteem is a feeling of self worth. Positive self-esteem can buffer stress by enhancing the implementation of efficacious coping strategies; poor self-esteem can result in diminishing self-appraisal and creating self-defeating attitudes. While self-esteem could be regarded as a stable trait that predicts future behavior, it could be argued that situational and environmental factors will change it. Self-esteem is a major factor determining recovery, rehabilitation and integration for stroke patients, with longitudinal studies showing it to be a significant predictor of physical, social and psychological functioning. Thus, there is a need for a valid and reliable measure of self-esteem. Although the Chinese version of the State Self-Esteem Scale (SSS) has been used in this population, no study has examined its construct validity and reliability. Methods: Data from 265 Chinese stroke patients before discharge from two rehabilitation hospitals were factor analysed using principal component analysis with varimax rotation. The Kaiser rule was used to decide the number of components to be retained. An internal consistency analysis of the SSS was also conducted. Pearson’s correlation coefficients were calculated between the SSES and the Geriatric Depression Scale (GDS) to determine convergent validity. Results: The final factor solution comprised a three-factor model with correlated constructs, and accounted for 49.5% of the total variance. The eigenvalue of the three factors were 5.07 (performance self-esteem), 2.34 (appearance self-esteem), and 1.99 (social self-esteem) respectively. The factor loadings for the items showed that they were subjective indicators of their respective factors (p < 0.05). All items except for item 7 (“I am dissatisfied with my weight”) loaded primarily on one of the factors. Cronbach alphas for the SSES subscales ranged from 0.73–0.81. Significant negative correlations were found between the GDS and the SSES subscale scores (r = 0.31 to 0.55, p < 0.01) indicating that the SSES had acceptable convergent validity. Conclusion: The SSES appears to be a useful measure for assessing state self-esteem in stroke patients. Since the data were obtained from convenience samples, further studies from randomly selected samples are warranted. A confirmatory factor analysis is needed to further test the underlying factor structure and to determine whether the current factor structure required modification.

A Factor Analysis of the National Institute of Health Stroke Scale.

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The National Institute of Health Stroke Scale (NIHSS) is a commonly used neurological assessment tool for making treatment decisions and determining outcomes in stroke patients. The purpose of this study was to validate the major subscales of the NIHSS in MR or CT confirmed stroke patients. The NIHSS scores from 60 patients (25 females and 35 males with a mean age 65.70 years) with MR or CT confirmed strokes (63% left, 35% right, and 1% bilateral hemispheric) were used in a factor analysis. For the entire scale, the reliability coefficient was .78 for internal consistency . The principal component extraction yielded communalities values: .650 - .850. Two factors emerged: right and left hemispheric strokes, with 48.6% of the total variance, and eigenvalues = 5.280 and 2.044. The next 3 factors had eigenvalues >1; all 5 factors = 74.356% of the variance. In the component matrix for left hemispheric strokes, Factor 1, all items except left motor tasks (Sa and 6a), and sensory changes (5a and 6a) indicated that the NIHSS had acceptable convergent validity. Conclusion: The NIHSS appears to be a useful measure for assessing state self-esteem in stroke patients. Since the data were obtained from convenience samples, further studies from randomly selected samples are warranted. A confirmatory factor analysis is needed to further test the underlying factor structure and to determine whether the current factor structure required modification.