

## Improving Family and Surrogate Research Engagement in Nursing Homes

Mungcal L, Unroe K

**Background:** Nursing homes (NHs) are important sites of care for people with cognitive and physical disabilities; nearly half of NH residents have dementia. Unfortunately, NHs continue to be plagued with quality-of-care issues including lack of person-centered care and under-treatment of symptoms. The UPLIFT-AD (Utilizing palliative Leaders In Facilities to Transform care for Alzheimer's Disease) stepped wedge trial aims to address these issues by using palliative care (PC) specialists in NHs. Measuring the impact of this intervention is challenging because people with dementia often have difficulties communicating, and thus, much research relies on the observations of staff and surrogate decision-makers (usually family members). The latter has yielded a low response rate for the first timepoint of the UPLIFT-AD project.

**Project Methods:** A brief literature scan for similar PC NH interventions and surrogate engagement in NH research was performed, with support from a medical librarian, and revised strategies for surrogate recruitment were utilized during the second timepoint survey for two first-wave NHs.

**Results:** Two first-wave NHs (n=47 and 43) had surrogate baseline survey completion rates of 42.6% (n=20) and 34.9% (n=15). Following the implementation of the additional strategies— calling surrogates from NH phones, calling at varied times, and emailing research information— the overall survey completion rate was relatively unaffected—42.6% (n=20) and 37.2% (n=16). Of the surrogates from these facilities (n=90), 30.0% (n=27) refused to participate and 17.8% (n=16) were “unable to contact.” The reasons for refusal included “not interested” (37.0%), “too busy” (18.5%), “no reason” (11.1%), “hung up” (11.1%), and “other” (22.2%). The literature scan yielded few published articles containing strategies to improve engagement of surrogates in NH PC research.

**Conclusion:** Strategies to enhance surrogate engagement in NH research are underdeveloped. Engaging surrogates in research requires multiple strategies and presents an ongoing challenge but represents a critical perspective for studies involving people with dementia.

## Inhibition of CaMKK2 Decreases Progression of Post-traumatic Osteoarthritis in a Rabbit ACL Transection Model

Riggs K, Dille J, Sankar U

**Background and Hypothesis:** Post-traumatic osteoarthritis (PTOA) is a multifactorial degenerative disease of the joint affecting 20-50% of all joint injuries with a total annual cost of \$15 billion. There are no current disease-modifying therapies for PTOA. Mechanical stress due to ligament tear or impact injury triggers the release of

inflammatory mediators in the joint. Resulting collagen damage, loss of proteoglycans, and cell death triggers further release of inflammatory mediators and reactive oxygen species. This cycle of inflammation leads to PTOA. We hypothesize that inhibition of Ca<sup>2+</sup>/CaM dependent protein kinase kinase 2 (CaMKK2), a kinase associated with the inflammatory effects in PTOA, will mitigate the disease-propagating mechanisms.

**Methods:** We utilized a rabbit model of PTOA which involved surgical transection of the anterior cruciate ligament (ACL) to generate joint instability. Rabbits were then treated tri-weekly with either STO609 (CaMKK2 inhibitor, 0.033 mg/kg) or saline (control) for 16 weeks. Rabbits were sacrificed at 16 weeks post-surgery. Tibiofemoral joints were harvested for staining with safranin O fast green (SO) and PTOA grading via Osteoarthritis Research Society International (OARSI) guidelines. Apoptosis was assessed with terminal deoxynucleotidyl transferase-mediated dUTP nick end labeling (TUNEL). RNA isolation of cartilage and subchondral bone tissue was conducted for qRT-PCR. Gene expression of MMP-13, IL-6, IL-1B, ACAN, COL2A1 was quantified and normalized to GAPDH.

**Results:** Histology and gross morphology showed increased PTOA severity in saline controls compared to STO-609 treated rabbits. There was no significant difference in chondrocyte apoptosis in STO-609 treated rabbits compared to saline controls based on TUNEL staining. Gene expression analyses are in progress.

**Potential Impact:** This study addresses the unmet clinical need for novel disease-modifying therapeutics for PTOA. Preliminary results show that inhibition of CaMKK2 has the potential to decrease cartilage degradation after joint injuries.

## Husisha: Training Peer-Counselors in Adolescent Problem-Solving Therapy in Eldoret, Kenya: Implementation, Adaptation, and Outcomes

Vander Missen M, Barasa J, Jaguga F, Kwobah E, Turissini M, Ott M, Puffer E, Kusgei G, Rono W, Njiriri F, Giusto A

**Background and Objective:** In Kenya, youth needing mental health (MH) treatment vastly outnumber licensed mental health professionals. Task-sharing MH treatment to non-professionals has potential to reduce the treatment gap. For youth, non-professional peer counselors have the benefit of increasing engagement and reducing stigma. Problem-solving therapy (PST) is one treatment shown to alleviate MH symptoms even when delivered by non-professionals. Here we (1) evaluate the implementation of a PST training and (2) codify adaptations for PST implementation at a youth drop-in center at Family Health Options Kenya.

**Experimental Design or Project Methods:** A 2-week training for peer mentors was conducted. Curriculum included core counseling skills, overview of MH, and PST introduction and application.

**Peer Outcomes:** Mean scores from pre- and post-written exams were compared using paired t-tests. Standard role plays were evaluated

using the Working with children – Assessment of Competencies Tool (WeACT). Consensus WeACT scores from pre- and post-role plays were compared using paired t-tests.

**Adaptations:** Feedback on cultural acceptability, language comprehensibility, and intervention flow was collected. Proposed intervention changes were coded within the Ecological Validity Model framework.

**Results:** Based on a written exam, mentors' knowledge of MH conditions and core counseling skills improved after training (Pre:  $10.88 \pm 4.36$ ; Post:  $15.38 \pm 2.88$ ;  $p = .026$ ). Competence in application of counseling skills evaluated with WeACT improved after training (Pre:  $20.63 \pm 6.61$ ; Post:  $28 \pm 1.69$ ). Examples of adaptations to PST include changes to address stigma for MH treatment in Kenya and redistribution of content between sessions.

**Conclusion and Potential Impact:** A 2-week PST training improved peers' counseling skills and ability to deliver a manualized PST treatment. Training allowed contextual, conceptual, and methodological adaptations to PST for use in a Kenyan context. Implementing and improving lay-counselor trainings for MH interventions in Kenya has the potential to increase access to preliminary MH treatment.

## Evaluation of Chemotherapeutic Outcomes for Thymic Carcinoma Patients

Wuthrich B, Davis H, Laniak L, Heldman E, Loehrer P, Kesler K

**Background and Hypothesis:** Thymic Epithelial Tumors are uncommon tumors of the anterior mediastinum composed of thymomas and thymic carcinomas (TC). TC's are known to have worse disease outcomes and lower rates of survival in comparison to thymomas and are suspected to have lower response rates to chemotherapy as well. As these tumors are rare, little data exists assessing the true efficacy of chemotherapeutic regimens for TC patients. Due to this lack of data, and that the Indiana University Health Simon Cancer Center treats a high percentage of TET patients, a database of these patients covering a variety of different disease characteristics and treatments has been established. We hypothesize, upon evaluation of this database, response rates to anthracycline based regimens (PAC) will be superior to non-anthracycline based regimens (i.e., PE, Carbo/Taxol) for TC patients.

**Methods:** In this project, a collection of patients seen by Dr. Patrick Loehrer and/or Dr. Kenneth Kesler was acquired, and a database was created using these patients in RedCap. Once established, we evaluated patient medical records in Cerner and entered data related to disease characteristics and treatments. These patients were then analyzed accordingly to evaluate chemotherapy response rates.

**Results:** The database yielded 123 instances of chemotherapy treatment for TC. Of which, the most popular treatments were PAC and Carbo/Taxol. The data suggests that PAC generates a higher response rate (65.5%) than other therapies (Carbo/Taxol: 27.6%, PE: 58.3%, etc.). Therefore, there is evidence that anthracycline based regimens may be more effective at generating response rates in comparison to non-anthracycline based regimens.

**Conclusion and Potential Impact:** This project will help elucidate the effectiveness of recommended systemic therapies for thymic carcinoma patients from one of the largest TET databases constructed. Ultimately, we hope that with clarity of the effectiveness of treatment, this can serve as a reliable reference for evidence-based medicine for the care of TC patients.