

on developing lung parenchyma, surfactant production, and abundance of Type II Pneumocytes Hypothesis 2: Modifiable Tracheal Occlusion will have lower levels of pulmonary hypertension than negative control animals, as measured by contrast-enhanced ultrasound (pulmonary artery velocity and washout time). **DISCUSSION/SIGNIFICANCE OF IMPACT:** This project will provide insight into the development of pulmonary hypertension in the CDH fetus. It will provide insight into the physiology of FETO, a novel therapy for congenital diaphragmatic hernias, and will demonstrate the utility of the EXTEND System for fetal treatments that are not possible in the maternal uterus.

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Treatment Interruptions and Early Discontinuation of Hormone Therapy in Hormone Receptor-Positive Breast Cancer Patients

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OBJECTIVES/SPECIFIC AIMS: (1) To evaluate the association of patient and clinical factors with adherence to adjuvant hormone therapy (HT). (2) To examine the association of HT-related symptoms and the extent of remediation with early discontinuation of hormone therapy. **METHODS/STUDY POPULATION:** Retrospective cohort study of risk factors for interruption and early discontinuation of adjuvant hormone therapy in hormone receptor-positive nonmetastatic breast cancer patients diagnosed between 2009 and 2015. This study will include incident hormone receptor-positive breast cancer patients who initiated their HT and were followed at Tufts MC until Dec 31, 2016. Primary data source is electronic medical records (EMRs) **RESULTS/ANTICIPATED RESULTS:** The primary outcome of this study is early discontinuation to HT, defined as the first treatment gap of greater than or equal to 180 days following the initiation of HT. Treatment interruption, defined as any patient- or provider-initiated treatment gap of ≥ 2 weeks, will be examined as the secondary endpoint. Any HT-related symptoms occurred during a follow-up interval will be captured and categorized into five major types (i.e., vasomotor, neuropsychological, gastrointestinal, gynecological, and musculoskeletal symptoms). Onset and duration of a HT-related symptom will be recorded. Severity of the symptoms will also be rated by clinical oncologists. Remediations in response to HT-related symptoms will be collected and categorized into two groups (pharmacological or non-pharmacological) and whether they were patient- or provider-initiated. Response to a remediation is defined as complete relief, partial relief, no relief, or with worsening symptoms. Response to a treatment change (i.e., HT switch or hold) was collected separately but using the same criteria. Analyses will be performed on the association between patient and clinical factors with rates of nonadherence (unplanned treatment interruption and/or early discontinuation) of hormone therapy, respectively. We also will explore whether patients with elevated symptoms and/or incomplete remediation will have earlier discontinuation of hormone therapy. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Through formal chart review, we will establish a dataset that contains highly detailed information about treatment-emergent symptoms and remediations, which will enable us to quantitatively assess the impact of these treatment factors on adherence to hormone therapy for breast cancer. The in-depth analysis of risk factors associated with nonadherence to hormone therapy will inform development of interventions to improve cancer outcomes.

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Understanding barriers to and facilitators of a healthy lifestyle of Hispanic adults with end stage renal disease in hemodialysis: Intensive Development and Experiences in Advancement of Research and Increased Opportunities (IDEARIO)

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OBJECTIVES/SPECIFIC AIMS: Physical inactivity and mineral imbalances greatly contribute to morbidity and mortality in patients with end-stage renal disease (ESRD). Barriers for engaging in physical activity and adhering to the hemodialysis diet have been reported predominantly with white participants from countries other than Puerto Rico. Therefore, this study's aims were to explore the barriers and facilitators that Hispanic adults with end-stage renal disease encountered for engaging in physical activity and adhering to the hemodialysis diet. **METHODS/STUDY POPULATION:** Three focus groups were conducted among 19 adults living with ESRD who received services from a renal center in Puerto Rico. Sessions were recorded, transcribed, and coded first using inductive methods. **RESULTS/ANTICIPATED RESULTS:** The presence of fatigue, lack of acceptance of the renal condition, and lack of knowledge of appropriate exercises for patients in hemodialysis were the most frequently reported barriers to engage in physical activities. Cost of the renal diet, limited availability of the renal diet products, the restrictive nature and the lack of Puerto Rican taste of the renal diet, and inadequate educational materials were the most frequent barriers to adhere to the hemodialysis diet reported by the sample. The most commonly reported facilitators to engaging in physical activities were having a positive attitude, opportunities for group exercises, and listening to Hispanic music while exercising. Health benefits, family support, having financial resources, availability of community resources, and having willpower were the most commonly reported facilitators to adhere to the hemodialysis diet. **DISCUSSION/SIGNIFICANCE OF IMPACT:** We identified a number of culturally relevant individual, interpersonal, institutional, and community-related barriers and facilitators to physical activity and adherence to the hemodialysis diet in patients with ESRD living in Puerto Rico. Evidence-based solutions to overcome these barriers and strategies for enhancing these facilitators should be addressed in future studies aimed at increasing the level of physical activity and increasing adherence to the hemodialysis diet in patients with ESRD living in Puerto Rico.

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Understanding epicardial adipose biology by imaging, transcriptomic, and lipidomic profiling

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OBJECTIVES/SPECIFIC AIMS: The study aims to understand if pro inflammatory epicardial white adipose phenotype is positively associated with coronary atherosclerosis, while the brown adipose phenotype is negatively associated. Primary outcome is association between epicardial fat fraction and coronary atherosclerosis and cardiac function. Secondary outcome is transcriptomic and lipidomic profiling between epicardial, extra pericardial, and