and usefulness of each questionnaire item, a panel of experts in palliative and end-of-life care will be consulted. o To finalize the questionnaire, it will be pre-tested with a small number of healthcare providers randomly selected from the survey's intended population. Implement the questionnaire to doctors/nurses providing direct end-of-life care by purposeful sampling at an acute community hospital. o Beforehand, survey interviewers will be recruited and trained. Perform quantitate and qualitative analyses o Answers to closed-end questions and quantitative data will be tallied using Microsoft Excel and analyzed using STATA statistical software. o Relationship between the participant's characteristics and their knowledge, attitudes and practices will be assessed using chi-square test. o Answers to open-ended questions in the questionnaire will be collected, analyzed based on their content, and placed in more comprehensive categories by NVivo software. RESULTS/ANTICIPATED RESULTS: It is expected to capture variations and/or consistencies in the amount of knowledge, the type of attitudes and the actual practices among and within physicians and nurses on end-of-life care in a community acute hospital. DISCUSSION/SIGNIFICANCE OF IMPACT: The proposed research is expected to contribute key information from the perspectives of physicians and nurses who deliver end-of-life care in an acute community hospital in Puerto Rico. This contribution is significant because it will serve as the platform to develop culturally-appropriate educational/training materials and, subsequently, implement culturally-responsive guidelines for the care of seriously ill Hispanics, with the expectation of improving their quality of life, and perhaps reducing their medical care costs.

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Macrophages, APOL1 Genotype, & Immunometabolism in CVD (MAGIC

Ashira D. Blazer[1], Miao Chang, Kimberly Robins, Jill Buyon and Robert Clancy
[1]New York University - H+H Clinical and Translational Science Institute

OBJECTIVES/SPECIFIC AIMS: This study aims to understand the potential immunomudualtory effect of APOL1 variants in autoantigen activated myeloid cells by assessing lysosomal integrity in activated cells expressing APOL1. The primary stimuli were: 1. ssRNA hY3 as a proxy for the Ro immune complex; 2. in an bulk RNA seq model, interferon-response gene, Siglec 1, as a read out of interferon activity. The primary outcomes were: 1. Myeloid cell APOL1 expression both in primary macrophage cultures and ex-vivo patient derived macrophages; 2. Lysosome integrity as measured by fluorescence intensity of lysotracker dye on light microscopy. METHODS/STUDY POPULATION: All recruited subjects provided written informed consent as per the NEW YORK UNIVERSITY Division of Rheumatology-wide Specimen and Matched Phenotype Linked Examination (SAMPLE) protocol. Subjects were African American; SLE subjects met 4 American College of Rheumatology criteria for SLE. Healthy donor monocytes representing each genotype in duplicate (reference allele: G0/G0; heterozygote variant: RV/G0; and homozygote variant RV/RV) were cultured with GM-CSF to yield macrophages which were incubated in serum free media or with hY3 ssRNA (TLR 7/8 agonist) to yield inflammatory M1 macrophages. Fold increase of APOL1 in untreated vs hY3 treated macrophages was measured using qPCR. Live cells were then cultured on glass chamber slides with DNA dye, DAPI, and Lysotracker red, a fluorescent dye that stains acidic lysosomes. As a proof of concept, interferon response gene, Signlec1, and APOL1 transcriptional activity in peripheral blood monocytes (PBMCs) were measured and correlated in 17 SLE patients by RNA seq. RESULTS/ANTICIPATED RESULTS: Regardless of genotype, hY3 increased APOL1 expression by 29 (+/−18.4) fold ($P = 0.007$ vs no treatment). Genotyping of the qPCR product showed concordance with the chromosomal DNA with the RV heterozygotes expressing both alleles. To examine lysosomal membrane integrity, live hY3-treated macrophages were stained with lysosotracker dye and fluorescence intensity was measured. Compared to reference allele carrying macrophages, each additional variant allele corresponded with a lesser degree of lysosome compartment staining. In SLE PBMCs, we found that APOL1 was highly expressed, and significantly correlated with Siglec1 ($F=10.5$; $P = 0.005$) supporting an association between circulating interferons and APOL1 accumulation in monocytes. DISCUSSION/SIGNIFICANCE OF IMPACT: Given that the "cytokine milieu" in SLE elicits APOL1 expression, induces inflammatory cell metabolic rewiring, and stimulates autophagy thereby exposing defects in autophagic flux, this gene-environment interaction may underpin the relationship between chronic inflammation and heightened APOL1 polymorphism-attributed cardiovascular risk. These data support further inquiry into the intersection between chronic autoimmunity and APOL1's functional role in the vascular microenvironment. The in vitro studies herein extend our prior work by demonstrating a mechanistic link between SLE-associated inflammation, APOL1 risk variant status and CVD via a lysosomal defect which converges on common autophagic and metabolic pathways in mononuclear cells.

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Maternal Daytime Dysfunction Due to Sleepiness and its Relation to Child Psychopathology

Cameron Strong[1], Kate Fitzgerald and Julie Premo
[1]University of Michigan School of Medicine

OBJECTIVES/SPECIFIC AIMS: Anxiety is prevalent in early childhood and, when left untreated, increases children's risk for chronic anxiety and depression later in life. Maternal risk factors (e.g. income and marital status) have also been shown to heighten their children's risk for the development of the aforementioned psychopathology. Sleep plays a critical role in behavior regulation, is affected in depression, and is influenced by a wide range of demographic and psychological variables. The purpose of this study was to examine the relationship between maternal sleep and the presence in their children of reported symptoms relating to anxiety, depression, and behavior regulation. METHODS/STUDY POPULATION: Children (n=59, aged: 4-9 years ($M = 6.069$, $SD = 1.006$, 59.3% female) and their mothers were sampled from clinic and community settings and were administered questionnaires. Maternal sleep quality was assessed by the Pittsburgh Sleep Quality Index, which captures both numeric and self-reported categories relating to an individual's perception of their sleep. Child anxiety and depression were assessed via parent-reported Child Behavioral Checklist (CBCL). Maternal depression symptoms were assessed with the Beck Depression Inventory (BDI). Associations between these measures were analyzed by ANOVA with post-hoc analysis and linear regression as appropriate. RESULTS/ANTICIPATED RESULTS: A statistically significant difference was observed in the mean child CBCL scores when children were sub-set into maternal categories of self-reported days of dysfunction due to sleepiness over the past month. Mean child CBCL T-score domains with statistically significant differences

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