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### MFM Provider Adherence to USPSTF Low Dose Aspirin Guidelines for Preeclampsia Prevention in Nulliparous Patients\*

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**OBJECTIVES/GOALS:** Recent studies suggest nulliparous patients benefit from low dose aspirin (LDA), yet there are limited studies examining MFM providers adherence to USPSTF guidelines and predictors of adherence. We identified demographic, obstetric, and clinical characteristics associated with guideline concordant counseling on LDA in nulliparous women. **METHODS/STUDY POPULATION:** Retrospective cohort study of pregnant nulliparous patients who received MFM prenatal care at a single tertiary center (1/1/2019-6/30/2020). Multiple gestations, > 2 spontaneous or therapeutic abortions, and contraindications to LDA were excluded. Maternal demographic and clinical characteristics were abstracted from the electronic medical record. The primary outcome was documented LDA counseling based on USPSTF guidelines. Data were analyzed using bivariate analysis and logistic regression using R 4.1.0 (R Core Team, 2021). **RESULTS/ANTICIPATED RESULTS:** Among 394 records in the analysis cohort, 316 met USPSTF guidelines for LDA. 164 (51.9%) meeting guidelines had documented LDA counseling. 67.4% of individuals with ?1 major USPSTF risk factors were counseled and 50.7% with ?2 moderate risk factors were counseled (Table 1). Age at the estimated due date (EDD), Black or Other race, chronic hypertension, and obesity are significantly associated with higher odds of aspirin counseling (Table 2). Patients with chronic hypertension had 4.15 higher odds of receiving low dose aspirin counseling compared to non-hypertensive patient (Table 2). **DISCUSSION/SIGNIFICANCE:** Our results suggest that only 51.9% of patients eligible for LDA received counseling despite MFM care. Increasing MFM provider awareness about the USPSTF guidelines and creating tools that facilitate guideline concordant counseling may increase the number of eligible patients who are counseled about LDA.

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### The mediating role of bonding on pandemic maternal stress and child behavioral outcomes<sup>†</sup>

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**OBJECTIVES/GOALS:** The COVID-19 pandemic may have affected the relationship/experience of the mother-child dyad (Provenzi et al.,

2021). Our objective is to identify the association of pandemic related maternal stress with child development. We will further evaluate the role of bonding, attachment, and trauma on this association. **METHODS/STUDY POPULATION:** We aim to recall a prospective cohort (n=200) of Latinx/Hispanic mothers from an ongoing study, power analysis will estimate minimum sample size (power=0.80 and alpha =0.05). Assessments of pandemic related maternal stress (PRMS) will be done with the COVID-19 and Perinatal Experiences Interview, perceived stress scale, and Parental Stress Index. Bonding, attachment, and trauma history will be assessed with psychological questionnaires and Childs behaviors with the Ackerman-CBCL questionnaire. Descriptive statistical analysis will be done. Correlations will identify associations and multivariate models will assess the role of parental bonding and effects of maternal attachment/trauma on associations to PRMS and child behavioral outcomes (controlling for confounding effects). **RESULTS/ANTICIPATED RESULTS:** First, we expect to find that mothers will report higher levels of stress (pandemic related, perceived, and parental) which will be associated with less bonding behaviors towards her child. Second, we expect that mothers levels of PRMS will be mediated by poorer bonding characteristics thus leading to negative child behavioral outcomes (i.e., poor regulation, crying spells, alterations in physiological patterns, and social-emotional developmental outcomes). Further mothers insecure attachment traits and trauma history will moderate perception of stress and negative child behavioral outcomes. **DISCUSSION/SIGNIFICANCE:** Results will describe stress in Latinx/Hispanics mothers during the pandemic and effects on child development. Identifying the role of maternal bonding/attachment will point to how this formative relationship has transformed during the pandemic, providing knowledge of mother-child resiliency.

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### Inflammatory Cytokines and Neurocognitive Functioning in Bipolar Patients across Mood Episodes

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**OBJECTIVES/GOALS:** Accumulating evidence supports the involvement of immune and inflammatory pathways in Bipolar Disorder (BD) pathophysiology. This pilot study aims to determine if altered peripheral IL-2, TNF-a, IL-4, IL-6, IL-10, IFN-y, IL-17A levels are associated with BD across mood episodes (euthymic, manic, depressive), and worsen neurocognitive function. **METHODS/STUDY POPULATION:** Twenty-eight participants (17 cases and 11 controls) were recruited. We assessed the clinical features and cytokine plasma levels of participants. Cytokines were measured using Flow Cytometry. All subjects were interviewed by a trained psychiatrist. Each participant was fasting before the blood sample was taken. Neuropsychological tests were used to measure verbal fluency, speed processing, working memory/attention, visuospatial skills, verbal learning, executive functions, and motor skills. Descriptive statistics were used to calculate the demographic characteristics of the sample. An independent-sample Kruskal-Wallis Test and Mann-Whitney Test were carried out using SPSS version 21. **RESULTS/ANTICIPATED RESULTS:** Serum biomarker concentration showed a decrease in levels of IL-4 (anti-inflammatory) in BD patients vs healthy controls ( $p < .05$ ). There was a major concentration of IL-6 (pro-inflammatory) on bipolar patients vs controls ( $p = .003$ ). When we analyze the results