antibiotics will present with gut microbial dysbiosis, changes in fecal bile acid concentrations and develop more GI symptoms compared to unexposed children. METHODS/STUDY POPULATION: We analyzed fecal samples from 174 subjects at 12 months of age, of whom 52 were exposed to antibiotics in their first year of life. Of these, 33 subjects were sampled again at 24 months of age. DNA from 200mg of frozen stool (−80C) was isolated with the Qiagen DNeasy PowerSoil kit. Shotgun libraries were generated using the NexteraXT kit and sequenced on the Illumina HiSeq 2500 using 2x125 bp chemistry. Sequence data were analyzed using the Sunbeam metagenomics pipeline. The abundance of bacteria was estimated using Kraken version 2.0.8. Fecal bile acids will be quantified by liquid chromatography–mass spectrometry (LC-MS). RESULTS/ANTICIPATED RESULTS: Overall bacterial community composition at 12 or 24 months was not associated with antibiotic exposure (PERMANOVA test, Bray-Curtis distance). An increase in *Enterobacteriaceae*, in particular *Escherichia coli*, is a signature of antibiotic-induced dysbiosis, but also of early infant gut. Children with antibiotic exposure had slightly higher abundance of *Escherichia coli* compared to those with no exposure ($p = 0.03$). At 24 months, the abundance of *Bacteroides caccae*, a commensal gut species, was decreased for children exposed to antibiotics in the first year of life (fdr = 0.02). We will perform further analysis of bile acid modifying bacteria, fecal bile acid concentrations and correlate to GI symptoms. DISCUSSION/SIGNIFICANCE OF IMPACT: Our findings suggest a significant but nuanced impact of early life antibiotic use on the composition of the gut microbiota. The association of antibiotic exposure with *B. caccae* and *E. coli* warrant further attention in the context of the rapidly developing early-life microbiome. CONFLICT OF INTEREST DESCRIPTION: The authors declare no conflicts of interest relevant to this work.

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The Effect of the Affordable Care Act on the Stage at Diagnosis in Low income Privately Insured Cancer Patients, including those with Marketplace coverage

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OBJECTIVES/GOALS: The goal of this study was to examine the change in the odds of being diagnosed with metastatic cancer after the Affordable Care Act (ACA) among low-income, privately insured, nonelderly patients with newly diagnosed cancer. Low-income was defined as having income<250% FPL (federal poverty level). METHODS/STUDY POPULATION: Using Ohio cancer registry data linked with census tract-level income data, individuals aged 18-64 years diagnosed with one of the 15 leading cancers and reported being privately insured or uninsured were identified. Low-income patients were isolated using probability weighting, a process in which each observation was assigned a weight equal to the probability of a patient having an income <250% FPL based on the patient's census tract of residence. Then, a multivariable logistic model was fitted to examine the independent association between the exposure (Post-ACA, years 2015-2016 versus Pre-ACA, years 2012-2013) and the outcome (metastatic versus non-metastatic disease at diagnosis). RESULTS/ANTICIPATED RESULTS: Between the Pre-ACA and Post-ACA periods, the percent uninsured in the low-income study population decreased from 14.1% to 4.5% ($p < 0.01$). In the Post-ACA period, among those with insurance coverage, an estimated 11.7% of individuals had Marketplace coverage. After adjusting for potential confounders (sex, age, race-ethnicity, marital status, community-level income, rurality, and cancer type), individuals diagnosed Post-ACA had 5% lower odds of having metastatic disease relative to Pre-ACA (Adjusted Odds Ratio: 0.95, 95% Confidence Interval: 0.91 - 0.99, $p = 0.04$). DISCUSSION/SIGNIFICANCE OF IMPACT: The shift towards non-metastatic disease likely reflects increases to coverage brought on by the marketplaces. However, the shift is smaller than those observed in Medicaid enrollees, suggesting that policy refinements in the marketplaces can further improve outcomes in low-income cancer patients.

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The effects of hemodilution *in vitro* on coagulation in term parturients using thromboelastometry

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OBJECTIVES/GOALS: Little is known about the effect of hemodilution with crystalloid on blood coagulation in obstetric patients. The purpose of our study was to examine the impact of hemodilution on components of blood coagulation using rotational thromboelastometry (ROTEM®) in term parturients METHODS/STUDY POPULATION: This is a prospective, observational pilot study including 35 healthy, pregnant patients at term (≥37 weeks) without history of bleeding or clotting disorder or on medication affecting coagulation. Venous blood samples were collected from all patients and divided into specimen tubes to generate varying degrees of hemodilution with Plasma-Lyte (0%, 20%, 25%, 30%, 35%, 40%, 45%, 55%, 60%, 65%, 70%, 75%, 80%). Rotational thromboelastometry was then performed on samples to assess for coagulation changes. RESULTS/ANTICIPATED RESULTS: EXTEM (extrinsically activated assay) clotting time (CT) became prolonged at 65% hemodilution and above, and the median CT was in the coagulopathic range (>80 seconds) at a dilution of 80%. FIBTEM (extrinsically activated assay with platelet inhibitor, primarily measuring contribution of fibrinogen to coagulation) amplitude at 5 minutes (A5) began to diminish at 35% hemodilution, with the median A5 in the coagulopathic range (<12 mm) at 55% hemodilution. The area under the curve (AUC), a marker of clot strength, for EXTEM and FIBTEM consistently declined as hemodilution increased. Greater decreases in FIBTEM AUC were seen compared to EXTEM AUC, with the ratio of FIBTEM:EXTEM AUC at each dilution demonstrating a statistically significant difference from baseline. DISCUSSION/SIGNIFICANCE OF IMPACT: All thromboelastometry values demonstrated a hypocoagulable trend as hemodilution increased. However, the samples analyzed by the FIBTEM assay trended toward a coagulopathy at a lower degree of hemodilution compared to the EXTEM assay. As FIBTEM tests analyze the role of fibrinogen in hemostasis and EXTEM tests analyze the role of platelets, our findings suggest that platelets may be able to withstand higher degrees of hemodilution before impairing hemostasis compared to fibrinogen. These findings support the growing body of literature that in early stages of severe obstetric hemorrhage, the prioritization of fibrinogen replacement may be critical in preventing further coagulopathy. CONFLICT OF INTEREST DESCRIPTION: All authors have no conflicts of interest to report.

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