IDSOG Oral Presentations

1 Comparison of obstetric to institutional antibiograms as an approach to advance antimicrobial stewardship in maternal care

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OBJECTIVES: Our objective was to create an antibiogram derived exclusively from our obstetric population and compare the clinical isolates and susceptibilities to our institutional antibiogram.

METHODS: We included all clinical isolates and susceptibility data collected by the University Hospital Clinical Microbiology Laboratory from 01/01/2018-12/31/2018 which generated our institutional antibiogram, For comparison, we created an OB antibiogram using a subset of all clinical isolates collected during the study interval from the OB triage, labor & delivery, antepartum and postpartum wards. The antibiotic susceptibilities of the OB clinical isolates were compared to the institutional clinical isolates. In accordance with The Clinical and Laboratory Safety Institute guidelines, only isolates with greater than 30 patient specimens were compared.

RESULTS: In total, we identified 929 clinical isolates from our OB population over the study interval. Urine was the predominant source of clinical isolates (76.3 %). The remaining sources included wound (10.1%), genital (9.0%), blood and other fluids. Escherichia coli (E. coli) accounted for nearly half of all isolates (48.7%) followed by Group B Streptococcus (10.7%), Enterococcus sp. (9%) and Klebsiella pneumoniae (7.2%). Overall, susceptibilities of the gram-positive organisms in the OB antibiogram are similar to the institutional antibiogram. Conversely, common gram-negative organisms demonstrated less antibiotic resistance in the OB antibiogram compared to the institutional antibiogram. E. coli, Klebsiella pneumoniae and Proteus mirabalis were more susceptible in the OB antibiogram compared to the institutional antibiogram for cefazolin (81%, 91%, 81% versus 62%, 71%, 45%, respectively) and trimethoprim/ sulfamethoxazole (71%, 91%, 90% versus 63%, 77 %, 81%, respectively). E. coli and Klebsiella pneumoniae were also more susceptible in the OB antibiogram compared to the institutional antibiogram for ceftriaxone (94%, 96% versus 83%, 85%, respectively) while Proteus had similar susceptibilities.

CONCLUSION: Compared to our institutional antibiogram, gram-negative clinical isolates in our OB population exhibit less antibiotic resistance. Creation of an OB-specific antibiogram, which more accurately reflects antibiotic resistance patterns, may promote appropriate antimicrobial use by assisting in more informed antibiotic selection and limit unnecessary use of broad-spectrum antibiotics.

LEARNING OBJECTIVES: Learners will be able to: 1.Identify common sources and microorganisms isolated from an Obstetric population. 2.Demonstrate differences in OB antibiogram compared to an institutional antibiogram to promote appropriate antibiotic use.

2 A pharmacokinetic and treatment study of ledipasvir/sofosbuvir in pregnant women with hepatitis C virus

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OBJECTIVES: Hepatitis C virus (HCV) infection is increasing among pregnant women in the United States. Pregnancy is a window of opportunity for health care interventions, including HCV treatment that could improve maternal health and prevent perinatal HCV transmission. Physiologic changes during pregnancy affect the pharmacokinetics (PK) of some medications. The objectives of this study were to compare the PK parameters of ledipasvir/sofosbuvir (LDV/SOF) in pregnant versus nonpregnant women, and to assess adverse events and viral response.

METHODS: In this open-label, phase 1 study, HIV-negative pregnant women with chronic genotype 1 HCV infection were enrolled between 23-24 weeks gestation. At entry, participants began LDV 90mg-SOF 400mg daily for 12-weeks. Three intensive PK visits were performed at 25-26, 29-30, and 33-34 weeksgestation. Plasma was collected pre-dose, 0.5, 1, 2, 3, 4, 5, 8 and 12 hours post-dose to measure LDV, SOF and GS-331007 (the inactive metabolite of SOF) by validated HPLC-MS/MS methods. PK parameters were averaged across the three visits and compared between participants and non-pregnant women from regulatory trials of LDV/SOF by geometric mean ratio and 90% confidence interval. Maternal adverse events, delivery outcomes, and the sustained virologic response 12 (SVR12) weeks after therapy were also determined.

RESULTS: Of 29 women, 20 were excluded due to genotype 2 or 3 infection (n=10), ongoing illicit drug use (n=4), declining participation (n=3), intention to deliver off-site (n=2), and an APRI score of >1 (n=1). All 9 women enrolled were white, with a median age of 31 years. Eight women were HCV infected due to intravenous drug use (4 receiving opioid pharmacotherapy) and one was perinatally infected. Similar LDV and SOF, but lower GS-331007 (inactive SOF metabolite), PK exposure was observed between pregnant and non-pregnant women. Eight of 9 participants had an undetectable viral load at delivery, and all nine achieved SVR12. All adverse events related to LDV/SOF were less than grade 2. One-year follow-up of infants is ongoing and all remain HCV negative.

CONCLUSION: In this first study of HCV treatment during pregnancy, LDV/SOF was safe and effective with similar LDV/SOF PK exposure in pregnancy. Larger studies are needed before this strategy can be recommended. Given the high prevalence of genotype 2 or 3 infection, evaluation of a pan-genotypic regimen is needed.

LEARNING OBJECTIVES: Compare the pharmacokinetics of ledipasvir and sofosbuvir exposure during pregnancy to those of nonpregnant women and describe the safety and efficacy ledipasvir/sofosbuvir treatment during pregnancy.

3 Chorioamnionitis versus intraamniotic infection among preterm deliveries: is postpartum infectious morbidity different?

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OBJECTIVES: With new intraamniotic infection (IAI) diagnostic criteria, fewer women experiencing preterm delivery may qualify for intrapartum antibiotic treatment, potentially resulting in higher postpartum infectious morbidity. Thus, the objective of this study was to estimate whether subjects diagnosed with clinical chorioamnionitis have decreased odds of developing endometritis compared to those subjects meeting criteria for IAI.