Pregnancy in Women with Cirrhosis: A Population-Based Cohort Study

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Background
Cirrhosis incidence is rising in women of childbearing age. Contemporary maternal, infant and liver-related outcomes in pregnant women with cirrhosis have not been described in North America.

Objectives
To describe the association between cirrhosis and maternal and infant outcomes compared to the general population and to evaluate the proportion of pregnant women with cirrhosis who develop liver-related outcomes up to one-year post-partum.

Methods
This is a retrospective population-based cohort study using universal, routinely collected healthcare data in Ontario, Canada from 2000-2017. Pregnant women with cirrhosis identified using both validated case definitions and routine mother-infant linkage were matched 1:5 on birth year and socioeconomic status (SES) to pregnant women in the general population. Maternal and infant outcomes up to 6 weeks post-partum and liver-related outcomes up to one year post-partum were compared.

Results
2,022 pregnant women with compensated cirrhosis were matched to 10,110 pregnant women in the general population (median age 31 years [IQR 27-34], median gestational age 39 weeks [IQR 38-40]). After adjusting for age, SES, multiple births, co-morbidity and pre-pregnancy metabolic risk factors; cirrhosis was independently associated with higher risks of intrahepatic cholestasis of pregnancy (rate ratio [RR] 10.64, 95% CI 7.49-15.12), induction of labor (RR 1.15, 95% CI 1.03-1.28), puerperal infections (RR 1.32, 95% CI 1.02-1.70), pre-term delivery (RR 1.60, 95% CI 1.35-1.89), large for gestational age infants (RR 1.24, 95% CI 1.05-1.46) and neonatal respiratory distress (RR 1.20, 95% CI 1.02-1.42). The overall proportion of pregnant women with cirrhosis who had a liver-related complication was low (<2%) but was significantly higher in women with a history of hepatic decompensation compared to women with compensated cirrhosis (13% vs. 1.2%, P <.001).

Discussion
Women with cirrhosis do achieve pregnancy highlighting the need to consider family planning and contraception counselling in this population. Cirrhosis is an independent risk factor for many perinatal outcomes however, adverse liver-related outcomes are rare. A multidisciplinary team providing coordinated care to pregnant women with cirrhosis both during pregnancy and post-partum is critically important to optimize outcomes.