

# COVID-19 Infection – A cause for cholestasis of pregnancy!

H.K.M. Murday<sup>[1]</sup>, J.L. Keane<sup>[1,2]</sup>, S. Tara<sup>[3]</sup>

## Background

There is increasing evidence that the rate of intrahepatic cholestasis of pregnancy (ICP) went up during the SARS-CoV-2 pandemic in patients affected by the viral infection. Both ICP and COVID-19 infection can have severe adverse outcomes to both mother and baby if not detected early and managed adequately.

## Aims

To add to the literature regarding the correlation between cholestasis of pregnancy and SARS-CoV-2 infection in pregnancy and to help improve detection and treatment of affected patients as both conditions can be detrimental if not appropriately managed.

## Case

A 28-year-old primiparous lady was diagnosed with COVID-19 infection at 35 weeks and 6 days gestation and 9 days later was diagnosed with intra-hepatic cholestasis of pregnancy. The patient had mild COVID-19 symptoms and a few days later, she developed itchiness in her palms which eventually spread to her soles and whole body. Otherwise, she had an uncomplicated pregnancy. She denied any significant past medical, surgical, obstetrics or gynaecological history. She was only on iron supplements, denied any known allergies and had a BMI of 25 at her booking appointment. All her antenatal results including liver enzymes were normal. She always reported normal foetal movement and no signs and symptoms of pre-eclampsia throughout the pregnancy.

## Results

Upon investigation of the new itchiness, her blood works demonstrated new deranged liver enzymes, normal hepatitis screen and raised bile acids. A diagnosis of intra-hepatic cholestasis of pregnancy was made at 37 weeks + 1 day and she was commenced on ursofalk. She was induced at 39 weeks and proceeded with an uneventful forceps delivery. The next day of the delivery, her liver enzymes levels greatly improved.

Test Results (Range/Units)	37+1	38+0	39+1 (Ripening Day)	D1 postpartum
Hb (120-150 g/L)	137	142	132	107 L
WCC (4-10 x 10 <sup>9</sup> /L)	8.9	11.1	12.0 H	16.9 H
Platelets (150-410 10 <sup>9</sup> /L)	187	199	195	165
Creatinine (45-90 µmol/L)	35 L	41 L	51	50
eGFR (>90 mL/min/1.73m <sup>2</sup> )	>90		>90	>90
ALT (5-35 IU/L)	263 H	376 H	146 H	120 H
AST (5-30 IU/L)	154 H	131 H		68 H
GTT (6-42 IU/L)	60 H	44 H	43 H	32
ALP (30-110 IU/L)	226 H	212 H	204 H	158 H
Fasting bile acids (1-26 µmol/L)	29 H			

## Discussion

The aetiology of cholestasis of pregnancy is multifactorial and is related to high level of circulating bile acids in the blood. It is associated with severe complications such as preterm birth and stillbirth if not detected and managed appropriately. COVID-19 infection in pregnancy is associated with severe respiratory distress requiring Intensive Care Unit admission, thromboembolic issues, preterm birth and stillbirth. More and more research papers are demonstrating that COVID-19 infection causes liver damage, transaminitis and high fasting bile acids in pregnant patients. However, there is not enough data to show whether having intrahepatic cholestasis of pregnancy with COVID 19 infection worsens perinatal outcome.

Affiliations:

1. Monash Health;
2. Monash University;
3. Eastern Health