

## HIV/HCV Co infection in Pregnancy - 1<sup>st</sup> ever case in Sri Lanka

RWKMD Rajapakshe<sup>1</sup>, SM Senanayaka<sup>2</sup>, S Asogan<sup>3</sup>, GNA de Fonseka<sup>4</sup>

### Abstract

HIV and Hepatitis B, C infections in pregnancy adversely affect maternal health and also cause mother to child transmission (MTCT). Effects are more when there is co-infection with these viruses. A 38 year old pregnant mother with newly diagnosed HIV infection was also diagnosed to have HCVco-infection. This was the first case of HIV/HCV co-infection in a pregnant mother reported in Sri Lanka. She was started treatment for HIV during pregnancy and successfully achieved viral suppression. Since HCV treatment is not recommended in pregnancy, treatment for HCV deferred till postpartum period.

Identifying HIV and Hepatitis B, C infections in pregnancy are important due to their impact on maternal health and risk of MTCT. Even though HIV is screened routinely, Hepatitis Band C screening is only done at risk basis. Management of HIV/HCV co infection in pregnancy is challenging and involves multidisciplinary approach.

**Key words:** HIV infection, HCV infection, HCV /HIV Viral Load, Mother to Child Transmission (MTCT), Anti Retroviral Treatment(ART), Directly Acting Antivirals(DAAs)

**Authors:** <sup>1</sup>Dr RWKMD Rajapakshe (MBBS, PgDVen, MD), Consultant Venereologist, DGH, Kalutara, Sri Lanka.

<sup>2</sup> Dr SM Senanayake (MBBS, MD, MRCP), Consultant Gastroenterologist, DGH, Kalutara, Sri Lanka. <sup>3</sup>Dr S Asogan (MBBS, MS Obs&Gynae), Consultant Obstetrician and Gynaecologist, DGH, Kalutara, Sri Lanka. <sup>4</sup>Dr GNA de Fonseka (MBBS, MD), Consultant Anaesthetist, DGH, Kalutara, Sri Lanka.

**Corresponding author:** <sup>1</sup> Dr RWKMD Rajapakshe, Email-manjuladil75@gmail.com.

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### Case Report

#### Introduction

Hepatitis B and C infections are not commonly seen among HIV positive mothers. However, when those infections coexist, physicians face many challenges in managing those since they adversely affect pregnancy and maternal health as well as cause MTCT. Measures should be taken to prevent maternal complications and to prevent vertical transmission of both infections.

#### Case report

A 37 year old woman was diagnosed with HIV infection through her routine antenatal (AN) screening at 11 weeks of POA of her 1<sup>st</sup> pregnancy in February 2019.

She was asymptomatic at diagnosis and her baseline HIV viral load (VL) was 27542 copies/ml and nadir CD4 was 390 cells/ml.

She was started Anti Retroviral Treatment (ART) with Tenofovir /Emtricitabine /Efaviranz (TDF/FTC/EFV) regimen at 13 weeks of POA and achieved undetectable VL by 6 weeks of ART.

As routine baseline tests done for HIV patient, Hepatitis B and C screening was done at 11 weeks of POA before starting ART. Her Hepatitis C Antibody test was reactive and she had a Hepatitis C RNA VL of 98300 IU/ml confirming active Hepatitis C infection. Her Hepatitis C genotype was genotype 3. Hepatitis B screening was negative.

She received care by a multidisciplinary team (MDT) of specialists including Obstetrician, Gastroenterologist and Venereologist. She did not have any features of acute hepatitis. Her liver functions were normal (ALT -17U/L, AST-19U/L, ALP-99U/L, albumin -29g/L, total bilirubin -0.2 mg/dL, platelet count -233, PT/INR 18.6s, 1.45INR) at baseline as well after commencing ART. Liver ultrasound revealed

mild fibrosis and no oesophageal varices found in endoscopy.

According to recommendations (1, 2), it was decided not to treat her HCV infection during pregnancy but to treat after delivery if active infection persists.

She was closely monitored throughout the pregnancy by the MDT. She had well controlled HIV infection with undetectable HIV VL and had no ART toxicities or side effects. She did not have any obstetric complications and foetal growth was satisfactory. She did not develop intrahepatic cholestasis of pregnancy (ICP) and did not have any deterioration of her liver profile.

She underwent an elective LSCS at 37 weeks of gestation. Neonate was started on Nevirapine (NVP) syrup as for post exposure prophylaxis for HIV and was put on exclusive formula feeding. Baby did not have any neonatal complications.

Mother was closely monitored and had uncomplicated postpartum period. She continued her HIV medication and it was planned to repeat her HCV viral load 4-6 months after the delivery to plan HCV treatment.

Four months after delivery in January 2020, mothers HCV VL was still detectable at low level of 313IU/L. Decision for treatment will be taken with repeat VL in 2 months' time. If still detectable she will be treated with Directly Acting Antivirals(DAA) Sofosbuir and Valpatasvir for 12 weeks recommended for genotype 3.(1) Her ART need to be switched to Abacavir /Lamivudine /Raltrgavir (ABC/3TC/RAL) or Zidovudine/ Lamivudine/ Raltrgavir (AZT/3TC/RAL) during the HCV treatment to minimize drug interactions.

The baby was screened with HIV DNA PCR at birth, at 6 weeks and 4 months which were undetectable. The confirmatory HIV antibody testing will be done at the age of 18 months.

As per the recommended guidelines (2), it is planned to do the HCV antibodies of the baby at 18 months of age followed by HCV RNA testing if the antibodies positive to detect the possibility of MTCT of HCV.

## Discussion

Even though the prevalent rates of HCV mono infection in pregnancy ranges from <1 to 2.5%, the rates increased much to 3-50% when there is a co infection with HIV with the wide range reflecting the proportion of women who are injecting drug users or from high HCV prevalence areas in the cohorts studied (1, 3) HCV Infection can give rise to poor maternal outcomes including preeclampsia, heamorrhagic complications and death especially in the presence of cirrhosis. (2)

Overall MTCT of HCV ranges from 2-10% but HIV co-infection is associated with a significant increase in HCV transmission (OR up to 2.82) [4,5]. Like HIV, HCV viral load also correlates with the risk of HCV vertical transmission [6,7]. Invasive obstetric procedures, internal foetal monitoring, prolonged rupture of membranes and female infant sex have been associated with MTCT of HCV but breastfeeding and LSCS do not pose an additional risk. (6,7) No correlation with HCV genotype and transmission has been identified [7]. Effective HIV treatment significantly reduce the rate of HCV transmission, possibly by reducing HCV viraemia. (6)

When a HIV positive pregnant mother is diagnosed with HCV infection, assessment of HCV VL, genotype and subtype, degree of liver inflammation and synthetic function, fibrosis are indicated. If cirrhosis is present, there is a significantly increased rate of complications. (1)

Although evolution of DAAs has made HCV a curable disease, there is no safety data on DAAs in pregnancy though few studies shown no safety concerns. (9,10) Therefore, HCV treatment during pregnancy is not currently recommended. (1, 2) HCV infected women should be re-evaluated with HCV RNA before planning for DAA therapy after delivery since there is a possibility of spontaneous viral clearance.(1,2) Children born to HCV infected mothers should be tested for HCV. HCV antibody should be done at 18 months followed by HCV RNA if HCV Ab is positive [2]. Treatment is only recommended after 3 years of age, and about 25% - 50% of infected infants

spontaneously resolve HCV infection by 4 years of age. (11,12)

High rate of success with DAA is seen also in paediatric population as for adults and is recommended if they do not show spontaneous clearance by age of 3 years. (2)

### Conclusion

Identifying and managing HIV/Hepatitis co-infections in a pregnant mother is important as they cause maternal morbidity and pose a risk of vertical transmission. Close monitoring and specific management by relevant experts is needed to avoid maternal complications as well as to prevent MTCT of both HIV and HBV/HCV. Though safe and effective interventions are available for PMTCT of HIV, there are no such interventions recommended for PMTCT of HCV except for providing effective ART for HIV/HCV co-infected mothers.

Effective PMTCT interventions have prevented MTCT of HIV in this baby. For PMTCT of HCV, effective ART was given and high risk procedures were avoided in this mother. The success of these interventions will only be evident in future by HCV antibody results of the baby at 18 months of age.

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