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Opinion

# Hydroxychloroquine Use to High-Risk Pregnant Woman with Cardiac Fetal Lupus in Asia

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Anti-SS-A antibody is an autoantibody found in systemic lupus erythematosus and Sjogren's syndrome, and about 1% of all pregnant women are anti-SS-A antibody positive. It has been found that 10% of infants born to mothers with high anti-SS-A antibodies develop neonatal lupus, and 1% of them have complete heart block(CHB). In Japan, there are 1 million births per year, 1% of them are anti-SS-A antibody positive pregnant women, and 1% of them are estimated to have 100 CHB. Recurrence rates in a subsequent pregnancy are approximately six to ten-fold the risk of cardiac-NL and the occurrence rate after a previous child with cutaneous-NL ranges from 13 to18% [1]. Most symptoms of neonatal lupus are reversible and disappear spontaneously at 6 months when anti-SS-A antibody disappears, but CHB is irreversible and there is no improvement after autoantibodies disappear. It is a very serious complication that need to embed pacemaker in 60% of cases.

It is thought that anti-SS-A antibody passes through the placenta and damages the fetal myocardium and progresses from myocarditis to CHB. There is no established treatment to prevent the development of CHB.

Izmirly., *et al*. reported that there was a possibility of preventing CHB in children who were taking hydroxychloroquine (HCQ), an antimalarial drug, during pregnancy [2]. Of the 40 patients who received HCQ, only 3 patients (7.5%) developed CHB, and the incidence was significantly lower compared to the non-medication group (21.2%). It is also very interesting that there were no cases of IUFD in the HCQ group.

The mechanism of action of HCQ is to prevent myocardial damage by suppressing macrophages in the process of anti-SS-A antibody inducing apoptosis (Figure 1).

There were no reports of HCQ use to pregnant women in Asia, over the past 10 years.

In the 1960s, when high doses (900-1800mg/day) of chloroquine were used for a long time, many chloroquine retinopathy developed and production was discontinued in 1974. It is possible that this was a concern. Unlike chloroquine, hydroxychloroquine is characterized by a low incidence of retinopathy and extremely low side effects. In Japan, the therapeutic effect of HCQ is evaluated, and it is covered by insurance for systemic lupus erythematosus and cutaneous lupus erythematosus.

This time, we experienced HCQ use to high-risk pregnant woman with cardiac fetal lupus. With the consent of our hospital ethics committee and the patient's family, the patient started taking HCQ. We performed blood flow Doppler method and M-mode method every week from the 16th to 30th week of pregnancy, and confirmed that there was no onset of arrhythmia. She delivered at 37 weeks of gestation. The child did not develop CHB but developed skin lupus 2 weeks after birth. Skin lupus is transient and the child is still alive.

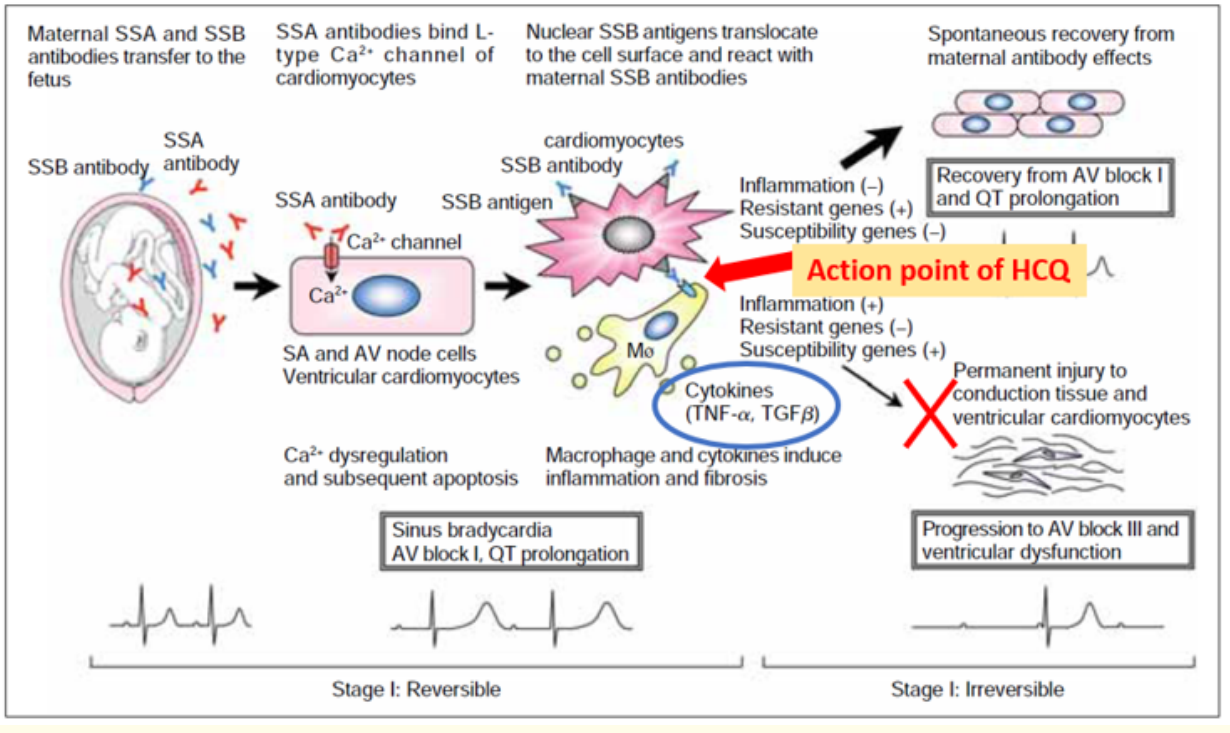


***Figure 1***

## Conclusion

Since it may be possible to prevent the onset of CHB by taking HCQ, we expect that similar reports will be made in Asia in the future.

I would also like to see the results of J-PATCH in Japan.

## Bibliography

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