

# The Flash of Cw-

## The journey to find Anti-Cw



*Dr Anastasia Osadchuk*<sup>1</sup> *Dr Sarah Janssens*<sup>1</sup>

<sup>1</sup> Mater Mothers Hospital, Brisbane, Queensland, Australia

### Introduction

Haemolytic disease of the fetus/newborn (HDFN) occurs when maternal antibodies cross the placenta and destroy fetal red cells. Up to 2% of general Caucasian population have the Cw rhesus antigen. Anti-Cw is an IgG antibody causing mild to severe HDFN in approximately 0.1% of pregnancies.

### Aims

To describe the case of identification of Cw alloimmunisation causing mild HDFN.

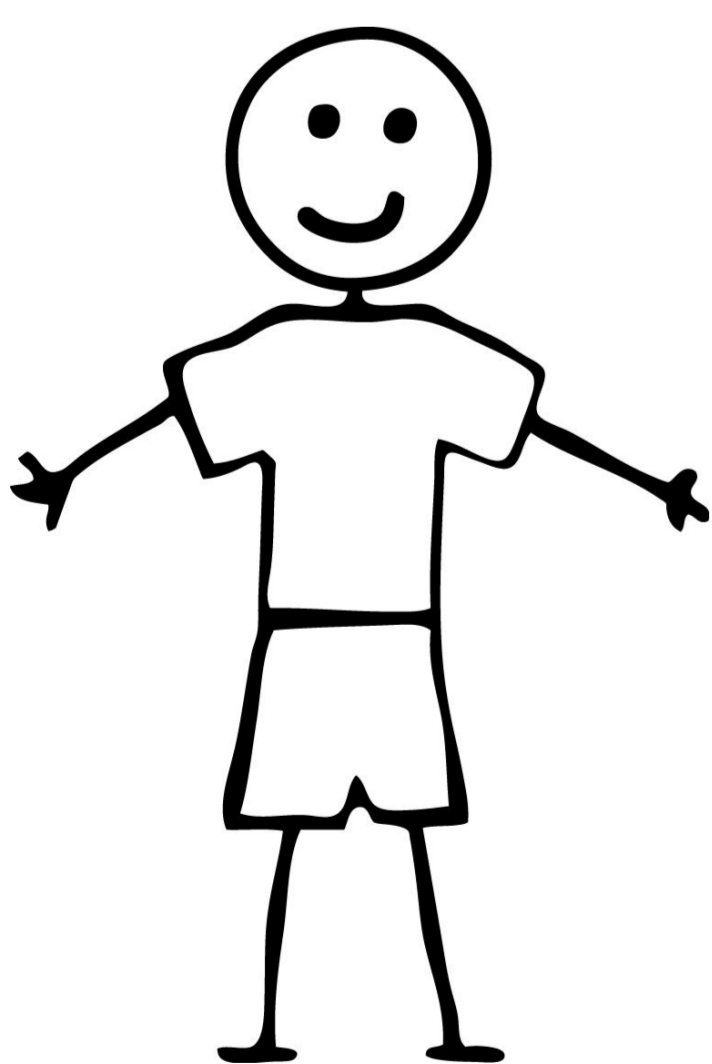
### Case

A 29 old G4P2, O positive blood group, had a negative antibody screen in pregnancy. Following birth at 39+2 the baby developed Jaundice at 18 hours. The newborn blood sample showed a positive DAT. An extended maternal antibody panel was performed, and anti-Cw was identified. In this case, HDFN was mild and resolved with two days of phototherapy.

### Results



Blood Group: **O positive**  
Phenotype: **Cw negative**  
Original Antibody Screen: **Negative**  
Repeat Antibody Screen: **Anti-Cw detected**



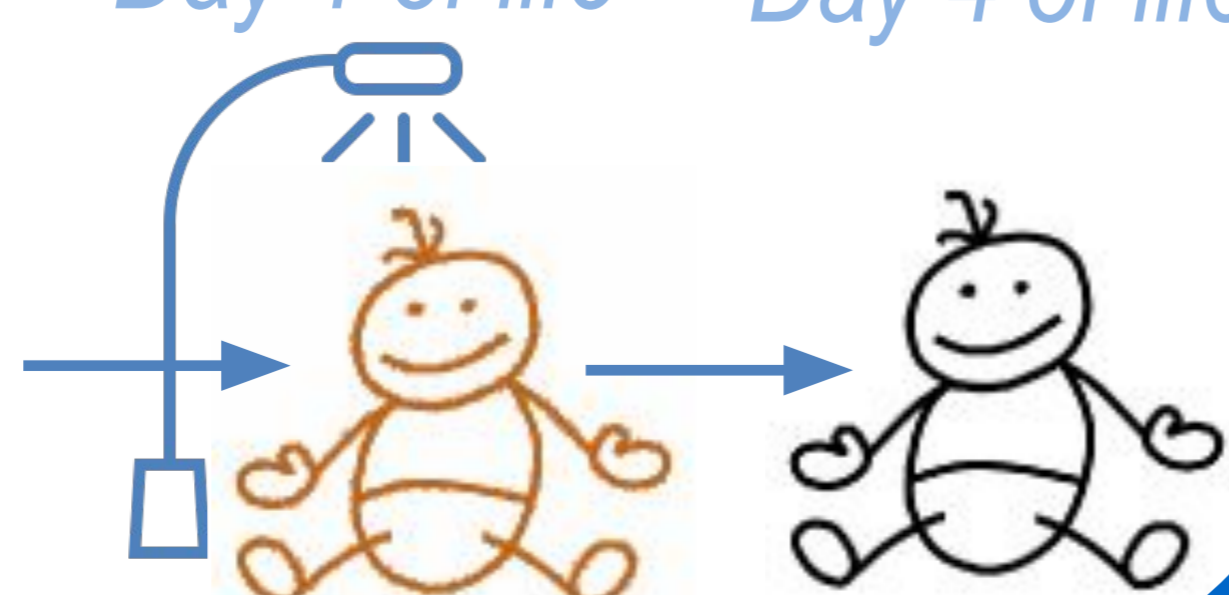
Blood Group: **O positive**  
Phenotype: **Cw positive**  
Antibody Screen: **Negative**



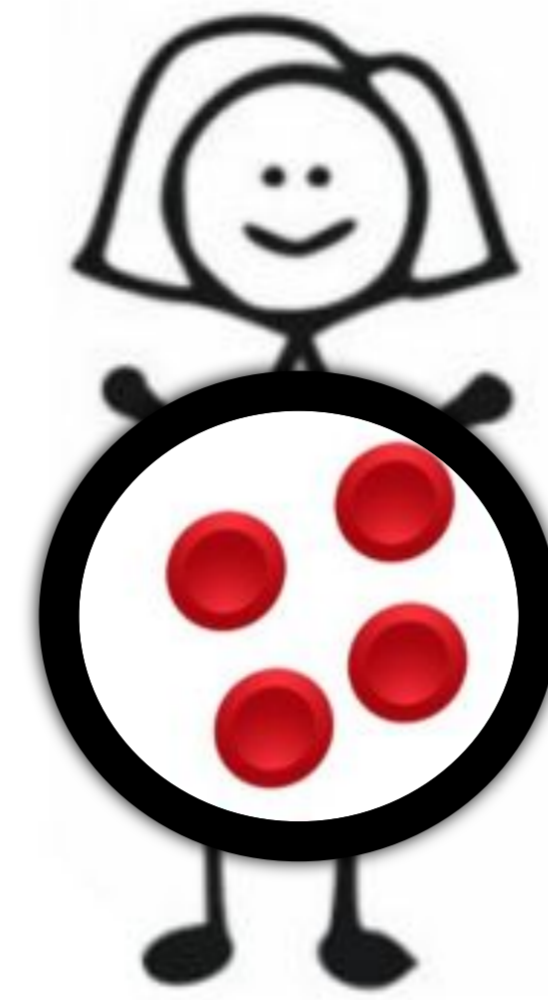
Blood Group: **O positive**  
Phenotype: **Cw positive**  
DAT: **Anti-Cw eluted**

Developed **Jaundice**  
Day 1 of life

Resolved with  
**phototherapy**  
Day 4 of life



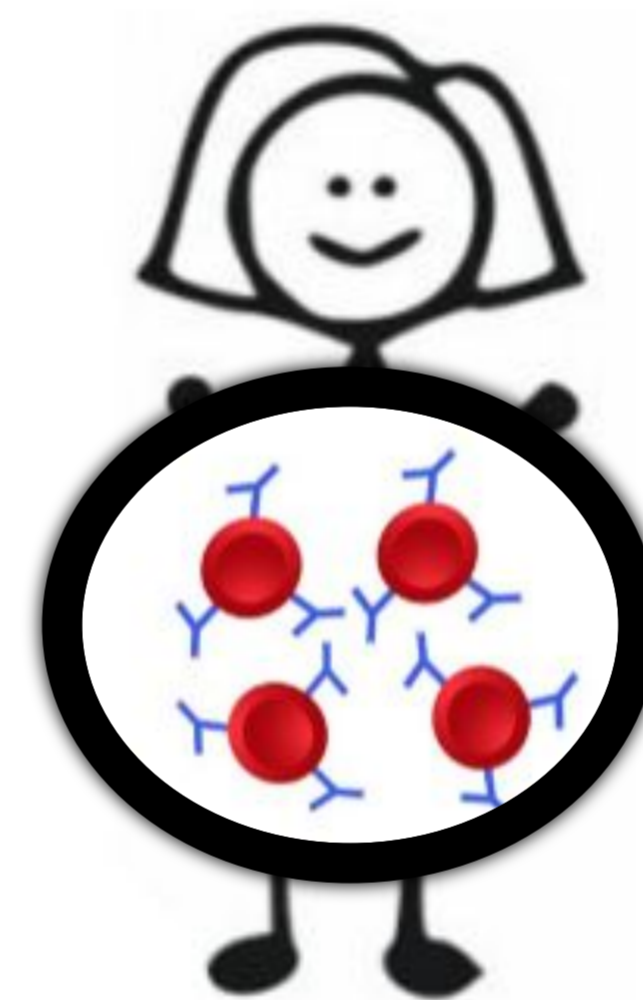
### Pathophysiology



During pregnancy **Cw positive fetal red cells** enter the maternal blood stream of a Cw negative mother.



The mother is sensitized to the Cw antigen and produced **anti-Cw antibodies**. Typically, this occurs after delivery and the fetus is not affected.



During subsequent pregnancies with a Cw positive fetus, stimulate the mother to make **Anti-Cw antibodies** that cross placenta. The antibodies cause agglutination and haemolysis of the fetal cell leading to HDFN.

### Discussion

Identification of babies at risk of HDFN is heavily dependent on the screening cells used by different transfusion laboratories. The Anti-Cw could have easily been missed as it is a low frequency antibody. A positive DAT requires further testing even when previous maternal antibody screens have been negative. This interesting case demonstrates that even low frequency antibodies can be clinically significant and can cause HDFN. The original maternal result was amended from negative to positive and may have implications for monitoring in future pregnancies.

### Summary

There is always a reason for a positive DAT in a newborn that develops jaundice within 24 hours of life.

#### References

1. Gopalam Kollamparambil, T., Rameshchandra Jani, B., Aldouri, M., Soe, A. and Ducker, D.A., 2005. Anti-Cw alloimmunization presenting as hydrops fetalis. *Acta Paediatrica*, 94(4), pp.499-501

#### Disclosure

No relationships to disclose

