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## Background

Anti-G has been reported as a possible cause of hemolytic disease of the fetus and newborn (HDFN), either independently or in association with anti-D, anti-C or both. The antibody mimics the pattern of anti-C and anti-D reactivity in the identification panel.

## Case Report

A 30-year-old female was referred to the Specialized mother and child hospital of Tlemcen at 30 weeks of gestation. The patient presented with decreased fetal movement. Cardiograph showed reduced beat with variable deceleration for which the mother underwent into preterm labor. The baby was pale with respiratory depression. Blood grouping, direct antiglobulin test to the son and antibody screening to the mother were performed. The mother's blood group was O Rh (D) negative ccee K-, and her antibody screen was positive. Her husband was A Rh (D) positive with CCee K-. Cell group of the baby was O Rh (D) Positive and phenotype was Ccee K-. DAT was strongly positive.

Further identification of antibody revealed a multiple alloantibody pattern of anti-D and anti-C specificity. Adsorption elution tests were conducted to discriminate among the combinations of anti-C, anti-D, and anti-G. The patients' plasma was adsorbed into treated r'r' cells to adsorb anti-C and/or anti-G: negative with D+ RBCs: No anti-D present. Eluate from D- C+ adsorbing RBCs adsorbed to completion with D+ C- G+ RBCs: negative with C+ RBCs: No anti-C present. Eluate from D+ C- G+ adsorbing RBCs: positive with D+ C- RBCs, positive with D- C+ RBCs, negative with D- C- RBCs: Anti-G identified. Double adsorption technique has been widely used and reported in literature. The baby's hematological results were as follow: hemoglobin (Hb) was 6.45 g/dL with higher reticulocyte counts and total bilirubin was 30 mg/dL with indirect bilirubin being 15 mg/dL. The neonate received one exchange transfusion. With phototherapy, the total bilirubin was maintained at normal range and eventually diminished, and the baby was discharged in healthy condition.

[Table-1]:- Interpretation of antibody patterns obtained from the parallel adsorption-elution tests to distinguish anti-G from anti-C and anti-D

Antibody in plasma	Plasma adsorption with R2R2 (cDE/cDE) *				Plasma adsorption with r'r' (Cde/cde) **			
	Eluate		Adsorbate		Eluate		Adsorbate	
	Pattern	Interpretation ^	Pattern	Interpretation ^	Pattern	Interpretation ^	Pattern	Interpretation ^
Anti-C+D	Anti-D	Anti-D	Anti-C	Anti-C	Anti-C	Anti-C	Anti-D	Anti-D
Anti-C+G	Anti-C+D	Anti-G	Anti-C	Anti-C	Anti-C+D	Anti-C+G	-	-
Anti-D+G	Anti-C+D	Anti-D+G	-	-	Anti-C+D	Anti-G	Anti-D	Anti-D
Anti-C+D+G	Anti-C+D	Anti-D+G	Anti-C	Anti-C	Anti-C+D	Anti-C+G	Anti-D	Anti-D
Anti-G	Anti-C+D	Anti-G	-	-	Anti-C+D	Anti-G	-	-

\*Removal of Anti-D and/or anti-G from plasma, ^Removal of Anti-C from plasma, \*\*Antibodies present in the eluate or adsorbate

[Fig-1]:- Antibody identification test results of the patient's



## Conclusion

This, to our knowledge is the first report of Anti-G antibody from Algeria. The report highlights the importance of performing advanced investigations in order to accurately characterize the immunizing antibodies especially in pregnant women.

## References

- 1) Rindlisbacher I. Further identification of anti-CD antibodies by adsorption-elution and titration.

<https://www.medi.ch/arbeiten/poster-iabel-rindlisbacher.pdf>