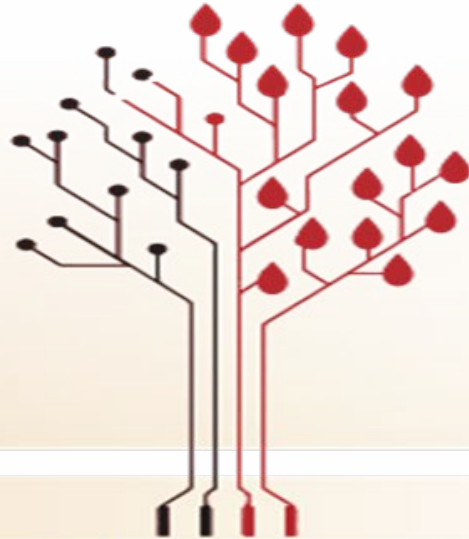




IRREGULAR RED CELL ANTIBODIES IN ANTENATAL PATIENTS:

A 5 YEAR REVIEW



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Background

- Testing of antenatal samples is routinely performed by the Red Cell Serology (RCS) Laboratory in Constantia Kloof, Gauteng.
 - Confirmatory RhD typing
 - Irregular antibody screening tests to identify the presence of irregular red cell antibodies.
- Antibody identification tests are performed on screen positive samples.
- Samples that are considered to be RhD negative from the initial rapid Rh screening done in clinics are sent to RCS Laboratory for confirmation.
- Irregular red cell antibodies that are IgG in nature are considered obstetrically significant due to their ability to transverse the placenta as opposed to IgM antibodies, which do not.





Background

- These results facilitate patient management in cases where there is a risk of Haemolytic Disease of the Foetus and Newborn.
- A retrospective study was performed using data obtained from the RCS Laboratory (Constantia Kloof) from January 2014 – December 2018
- Study objectives:
 - List the number and type of irregular red cell antibodies found
 - Describe the number of obstetrically significant and insignificant antibodies identified.



Materials and Methods

- Erytra -automated gel column agglutination technique.
 - Antibody screen.
 - Antibody Identification.
 - RhD typing.
- Manual tube IAT technique.
 - Confirmatory RhD typing using Anti-D Blend reagent.
 - Titration of obstetrically significant antibodies.





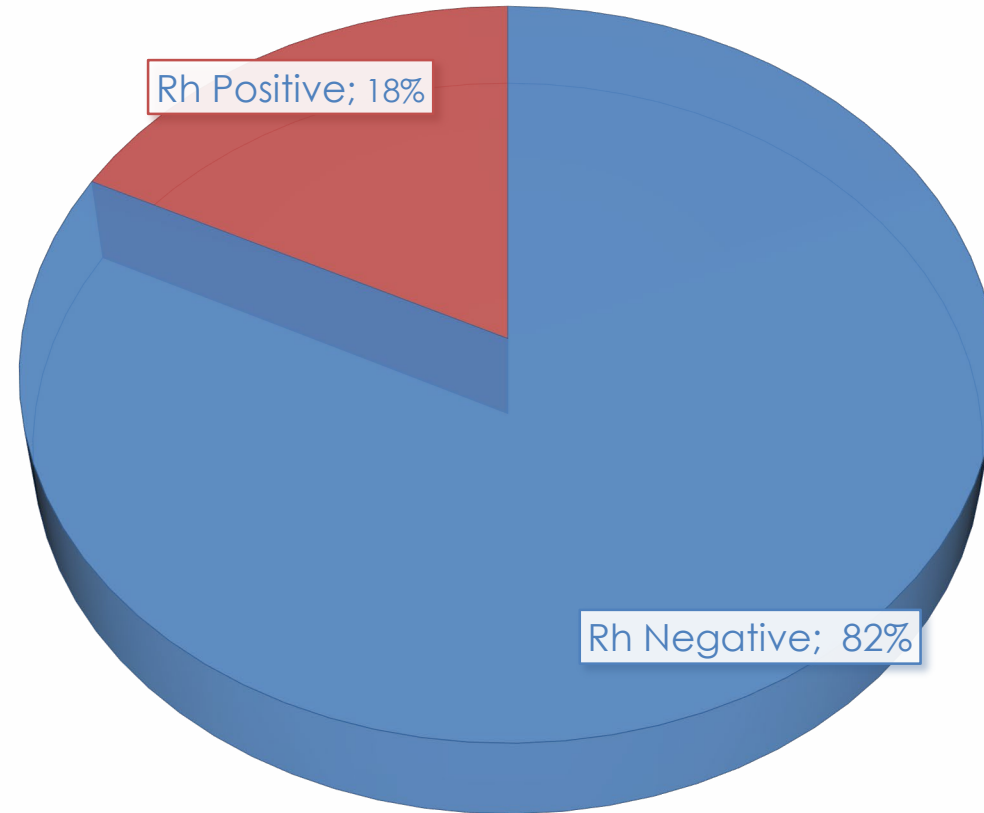
Materials and Methods

- Sample numbers and Rh results were extracted from the SANBS Business Intelligence(BI) system.
- Percentages were calculated from this data using Microsoft Excel.
- Antibody specificity data was obtained by manual reviewing of laboratory records.



Results

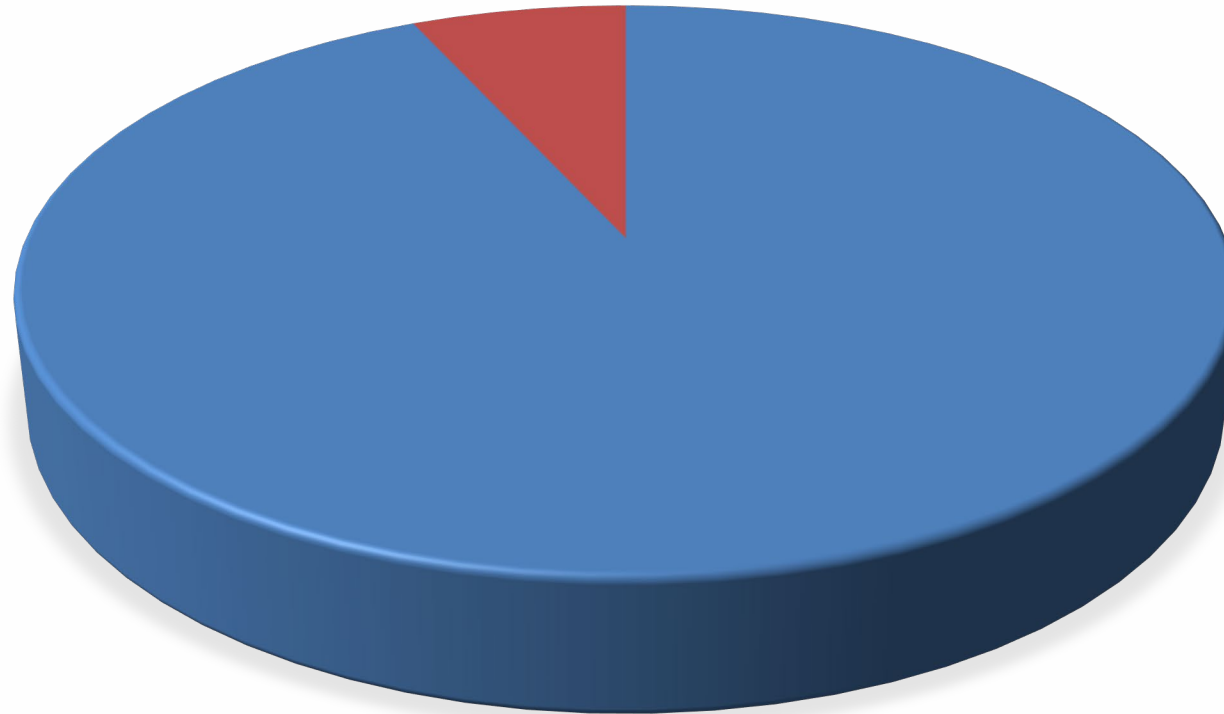
ANTENATAL SAMPLES TOTAL :10713



Results

TOTAL NUMBER OF ANTIBODIES: 661

Not obstetrically
significant; 7%



Obstetrically
significant; 93%





Results

SPECIFICITY	NUMBER	PERCENTAGE
Anti-D	501	76%
Anti-D, -C	80	12%
Anti-K	13	2%
Anti-D, -C, -E	12	2%
Anti-D, -E	3	0.5%
Anti-D; -C, -E, -S	3	0.5%
Anti-D, -C, -Jkb	2	0.3%
Anti-D, -C, -Jka	1	0.2%
Anti-D, -E, -Fya	1	0.2%
Anti-Lea	25	4%
Anti-M	19	3%
Anti-Leb	1	0.2%





DISCUSSION

- This study shows that 93% of the antibodies identified in antenatal patients tested were obstetrically significant.
- Of these, by far the most prevalent was anti-D.
- Anti-D was implicated in 6% of all antenatal samples tested and 91% of antibody cases.
- Anti-Lea, -Leb and -M antibodies, 45 in total, were IgM type antibodies, and deemed not obstetrically significant.
- The high incidence of anti-D seen in a sample group due to:
 - Disproportionate number of Rh negative to Rh positive.
 - Selective submission of Rh Negative samples sent to RCS.
 - Not representative of the population.





CONCLUSION

- The presence of this antibody is concerning as anti-D is largely a preventable antibody.
- The effective implementation of an antenatal anti-D prophylaxis programme is required.
- The study highlighted the need for a greater emphasis on the prevention of anti-D maternal alloimmunisation within the healthcare sector.





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Thank you