# Evaluation of point of care test - "ABD ® PAD" for detection of weak A and Weak D groups

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ePoster ID is **eP093**

## BACKGROUND

- ABO/Rh discrepancy is one of the most important parameters that needs to be addressed while compatibility testing. In such cases, the detailed blood grouping is cumbersome, time taking and requires additional reagents and manpower.
- Rapid whole blood-based ABD pads are now available for blood grouping which can give results in less than 30 seconds thus saving precious time. Also, they may be used for blood grouping in outdoor camps. These cards have already been validated on a large group of donors by a few authors.
- The aim of the study was to evaluate the accuracy of these cards specifically for individuals with weak antigenic expression on the red cell surface including blood donors and newborns.

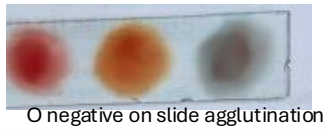
## OBJECTIVES

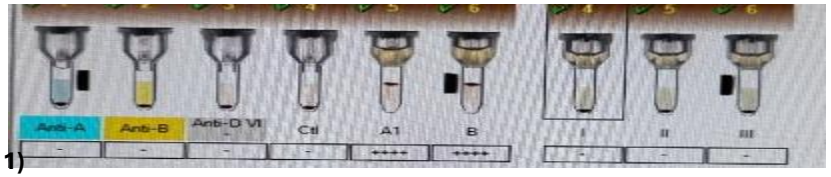
1. To compare the results between the ABD ® PAD & gel card technique and look for concordance.
2. To evaluate whether ABD ® PAD was able to detect weak A and weak D groups.

## MATERIALS & METHODS

1. **Type of study:** Cross-sectional comparative study
2. **Place of study:** UCMS & GTB Hospital Blood Centre, Delhi
3. **Duration of study**: 6 months.
4. **Inclusion Criteria:** i) Healthy donors donating blood screened as per drug and cosmetic act & ii)newborns.
5. **Exclusion Criteria:** i)Subjects with antibody screen positive & ii) newborns with history of Rh incompatibility.
6. **Methodology:**
   - Manual whole blood-based ABD ® PADs were used for ABO and D grouping.
   - The results were compared with the standard gel card technique i.e. ABO/D+ Reverse grouping cards for donors & ABO/Rh cards for newborns.
   - Discrepancies were further resolved by using Anti-A1 lectin and antibody elution in weak A individuals and indirect agglutination test by using Ig G anti-D antibodies in weak D individuals.

Faint positive on ABD®PAD


O negative on slide agglutination test



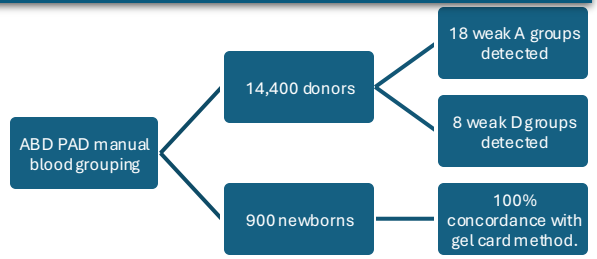
1)

1)Discrepancy on forward and reverse blood grouping. 2) Positive on IAT with Ig G anti-D Ab.

2)

## RESULTS

The new ABD ® PAD technique detected the 18 weak A and 8 Weak D groups tested in 14,400 healthy donors as revealed by lighter and faint color produced in the A and the D well respectively which were missed on gel-card technique and picked up as discrepancy in forward and reverse blood grouping whereas it showed 100% concordance in neonates.




## CONCLUSION

The new ABD ® PAD, which uses M-trap technology, is a promising device for fast and effective manual blood grouping, using whole blood. It enabled the detection of weak A and weak D individuals which showed discrepancy in gel card. It can also be used for neonatal blood grouping.
The study suggests that ABD ® PAD can be used as point of care test in cases of emergencies and resource limited areas- blood donation camps and in the peripheral centres.

***References:*** *1) www.diagast.com. 2) Patel, Tarak R.; Shah, Sangita D.[1],&Bhatnagar, Nidhi[1];et all. The Evaluation of M-TRAP Technology in Detection of ABO Groups and Its Subgroups and Its Efficacy as a Point-of-Care Test for Blood Grouping. Global Journal of Transfusion Medicine 6(2):p 150-155, Jul–Dec 2021.*