

# SPECIFICATION SPN564/1

## Red Cell Unit for Intra Uterine Transfusion and Exchange Transfusion with Positive Direct Antiglobulin Test

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*This Specification replaces  
NEW*

**Copy Number**

Effective

**01/03/13**

### ***Summary of Significant Changes***

N/A

### ***Purpose***

The chance of an RBC unit having a positive Direct Antiglobulin Test (DAT) is remote.

This SPN gives guidance on what action is to be taken in the unexpected event of a positive DAT detected while crossmatching blood for Intra Uterine Transfusion / Exchange Transfusion

### ***Definitions***

**DAT** – Direct Antiglobulin Test

**IUT** – Intra Uterine Transfusion

### ***Applicable Documents***

See References at end of document

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#### REQUIREMENTS

The incidence of a positive DAT among healthy blood donors has been reported to be between 1:1000 and 1: 36,000<sup>1,2,3</sup> . DAT is not a mandatory test for blood donations. A positive DAT is only detected when hospitals report and return a unit to a blood establishment because of IAT cross match difficulties or when routine automated blood grouping of the donor has been unsuccessful as a result.

The current NHSBT policy for management of blood donors found to have a positive DAT is as follows:-

If a positive DAT is recorded for the first time, the donor is still allowed to donate and if this is detected again on subsequent donation, then the donor is removed from the donor panel and referred to the GP for investigation.

The donors have to pass the Hb screen test and overt or subclinical haemolysis is unusual in an otherwise healthy blood donor despite the finding of positive DAT<sup>3</sup>. It has been reported that there is no decrease in post-transfusion red cell survival<sup>4</sup> and no detrimental harm to a patient who has received DAT positive RBC units<sup>3</sup> .

Studies have suggested that the risk of healthy blood donors (who pass the vigorous donor selection criteria) with a positive DAT developing a serious medical condition seem to be small (< 5%)<sup>3,5</sup> .

Recently Yang et al have reviewed the issue regarding blood transfusion and transmission of cancer. The authors have concluded that "transmission of malignant disease through transfusion has never been established"<sup>6</sup> . Therefore it is reassuring that even if a healthy donor with positive DAT later develops a malignant disease, the risk of transmission to a recipient is exceedingly small.

For both immediate spin cross match (ISCM) and electronic cross match techniques (whereby recipient RBC antibody screen investigation is negative), positive DAT of the donor unit will be missed and will be transfused unknowingly to the patient. There have been no concerns regarding missing positive DAT of the transfused units in this setting<sup>2, 7</sup>.

Requests for blood for IUT or exchange transfusion can be broadly divided into two categories:-

- 1) Non immune cause (e.g., parvovirus induced marrow suppression / G6PD def etc.)
- 2) Immune cause related to maternal red cell alloantibodies.

### Red Cell Unit for Intra Uterine Transfusion and Exchange Transfusion with Positive Direct Antiglobulin Test

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For non immune causes, if there are no irregular alloantibodies in the maternal samples, RBC can be selected and issued either by ISCM or by electronic issue<sup>8</sup>. On the other hand if red cell alloantibodies are detected in the maternal sample the relevant (detected) antigen negative units will be selected for transfusion. For non immune causes, if there are no irregular alloantibodies in the maternal samples, RBC can be selected and issued either by ISCM or by electronic issue<sup>8</sup>. On the other hand if red cell alloantibodies are detected in the maternal sample the relevant (detected) antigen negative units will be selected for transfusion purpose, but IAT cross match will be incompatible if the DAT is positive. If the donor has passed the donor selection criteria, including Hb assessment, the positive DAT, can be considered to be benign in nature and an incidental finding. As noted above, evidence indicates that there is no immediate clinical consequence or adverse event caused by transfusion of DAT pos units. The only consideration may be that it might cause positive DAT in delivery sample of the newborn.

### CONCLUSIONS

The chance of an IUT unit having a positive DAT is remote and there is no documented adverse consequence of transfusing DAT pos units. Introducing testing of DAT screening for blood for IUT/Exchange would have no impact on clinical safety and will have additional burden on donation testing, and therefore it is unwarranted.

### RECOMMENDATIONS

In the unexpected event of a positive DAT detected while crossmatching blood for IUT/exchange transfusion, this issue should be discussed with the NHSBT Consultant and relevant clinicians (obstetrician/paediatricians).

- a) If time permits the index unit should be returned and a replacement unit issued.
- b) But for an urgent situation after discussion and agreement, the DAT pos unit can be used under concession.
- c) NHSBT Consultant should ask the Clinical Support Team to update donor medical history record with the Positive DAT.

### REFERENCES

1. Garratty G. The significance of IgG on the red cell surface. *Transfusion Med Rev* 1987; **1**: 47-57
2. Bellia M, Georgopoulos J, Tsevrenis V, et al. The investigation of the significance of a positive direct antiglobulin test in blood donors. *Immunohematology* 2002; **18**:78-81

**Red Cell Unit for Intra Uterine Transfusion and Exchange Transfusion with Positive Direct Antiglobulin Test**

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3. Judith L Hannon. Management of blood donors and blood donations from individuals found to have a positive direct antiglobulin test. *Transfusion Medicine Reviews*; (April) 2012; **26** No 2: 142-152.
4. Judd W J. The clinical significance of a positive direct antiglobulin test. In: *Direct Antiglobulin Test in the New Millennium*. Bethesda: American Association of Blood Banks; 1999.
5. Yakir Rottenberg, Vered Yahalom, Eilat Shinar, et al. Blood donors with positive direct antiglobulin tests are at increased risk for cancer. *Transfusion* May 2009; **49**: 838- 842.
6. Yang H, Lee J, Seed CR, et al. Can blood transfusion transmit cancer: A literature review. *Trans Med Rev* 2010; **24**: 235-243.
7. Significance of a Positive DAT on a donor unit. *Applied Blood Serology*, Issitt and Anstee 4<sup>th</sup> Ed1998. Chapter 39: 1018-1019.
8. Working Party of the British Committee for Standards in Haematology Blood Transfusion Task Force. Guidelines for compatibility procedures in blood transfusion laboratories. *Transfusion Medicine* 2004; **14**: 59-73.