South West Regional Transfusion Committee

Report on the South West regional survey of O-negative red cell distribution and use - June 2012

Executive Summary

A survey of hospitals in the South West region of England conducted over March to July 2011. The survey reviewed the stock holding of O^- red cells (both routine and emergency) by the hospitals, the provision of emergency O^- red cells to other sites outside of the hospital, and the use of emergency O^- red cells.

Results:

- 18/19 (95%) NHS and 3/4 (75%) independent South West hospitals responded.
- 443 units of O⁻ red cells were held by hospitals: 56% was stock, 30% emergency on-site, and 14% emergency off-site.
- 100% of hospitals held emergency on-site O⁻ red cells.
- 62% (13/21) supplied emergency off-site O⁻ red cells: the majority (n=11) supplied 1 or 2 fridges, one hospital supplied 4 fridges, and one supplied 5.
- In total 72 fridges held emergency O⁻ red cells; 48 were on-site and 24 off-site.
- 65% (31/48) of emergency on-site fridges held ≤2 units, 4% (2/48) held 3 units, and 31% (15/48) held 4+ units.

Larger hospitals held more on-site emergency O⁻ red cells, and there was commonality amongst all hospitals in the locations these were held.

- Emergency O⁻ red cells were used from 33/72 blood fridges in 2010: 30 were on-site fridges, 3 were off-site
- 20/72 fridges issued no emergency units (no data supplied for the other 19/72).
- 375 units of emergency O⁻ red cells were used in 2010
- The median number of units issued from on-site fridges was 6.

'Appropriate use' of O⁻ red cells by hospitals was gauged using 2 indicators. First was the number of O⁻ red cells as a percentage of total red cells issued to hospitals, and second was the percentage of O⁻ red cells transfused to O⁻ recipients.

There appeared to be a relationship between the total number of O^- red cells held and O^- red cells as a percentage of red cell stock; as one increased so did the other.

There appeared to be a tendency for hospitals holding higher total O^- red cell stock to transfuse a higher percentage of O^- red cells to non- O^- recipients.

There was no obvious correlation between the percentage of O^- red cells held as emergency (both on and off site) stock and indicators of appropriate use.

6/18 hospitals returned emergency O⁻ red cells to general red cell stock with 10 days or more shelf-life*

There appeared to be a relationship between shelf life remaining and percentage of O^- red cells given to O^- recipient: the shorter the shelf life remaining the lower the percentage of O^- units given to O^- recipients.

^{*} in 4 hospitals there was a difference in the shelf-life remaining on emergency O⁻ red cells being returned to general stock from on-site emergency fridges to off-site fridges; here a single shelf-life was calculated from the proportion of each.

Discussion

Only 2 NHS hospitals had >25% O⁻ red cells off-site; 3 had $\leq 10\%$, and 7 had none. This finding challenges the perception that large amounts of O⁻ red cells are held off-site in satellite hospitals.

The higher the total number of O^- red cells held, the higher the percentage of O^- red cells held as stock and the fewer units transfused to O^- recipients.

There was no obvious association between <u>where</u> the O^- red cells were kept and indicators of appropriate use.

There was however an association between 'fresher' emergency O[−] red cells being returned to stock within NHS hospitals and appropriate use.

Recommendations

Hospitals should reconsider the total amount of O⁻ red cells stocked; in particular:

- Reassess the need for storage of emergency O⁻ red cells in satellite fridges if none were used over a one year period;
- Reassess the need for storage of emergency O⁻ red cells on-site in locations very close to the main hospital issues fridge;
- Review the shelf life remaining on emergency O⁻ red cells on return to general stock; 10 or more days may reduce the amount given to non O⁻ recipients to avoid wastage.