# JOURNAL-BASED LEARNING EXERCISES

Please select your choice of correct answers and complete the exercises online at: **www.ibms.org/cpd/jbl**

## DEADLINE WEDNESDAY 6 NOVEMBER 2019

### Prevention of hemolytic transfusion reactions with intravenous immunoglobulin prophylaxis in U- patients with anti-U.

Win N, Almusawy M, Fitzgerald L, Hannah G, Bullock T.
*Transfusion* 2019; **59** (6): 1916–20. doi: 10.1111/trf.15230.
**Assessment No: 080219**

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| 01 | The U– phenotype is found predominantly in black African populations at a frequency of between 0.5% and 2.7%. |
| 02 | The MNS locus is found on chromosome 4. |
| 03 | With this and other related papers it is no longer considered necessary to make the effort to provide U– units to patients with anti-U. |
| 04 | The acronym IVIG stands for intravenous immunoglobulin. |
| 05 | For Patient 1, NHSBT provided 37 units of U– blood from the National Frozen Blood Bank (NFBB) over a period of 20 months. |
| 06 | For Patient 2, a combination of IV iron infusion and oral ferrous sulfate supplementation resolved her iron deficiency anaemia. |
| 07 | The NFBB is located at NHSBT-Filton Centre. |
| 08 | The post-thaw shelf life of most reconstituted cryopreserved red cell units is 72 hours. |
| 09 | Tranexamic acid is prescribed to prevent pain. |
| 10 | For Patient 2, a total dose of 2 g/kg/day was given over three days. |
| 11 | A hospital multidisciplinary team consists, where such teams are available, of a haematologist, an anaesthetist, a representative from the cell salvage team, an obstetrician (depending upon the patient case), a transfusion practitioner and a senior member of the hospital transfusion laboratory. |
| 12 | In the case of Patient 2, 800 mL of autologous red blood cells were returned to the patient via intraoperative cell salvage. |
| 13 | In the case of using reconstituted cryopreserved red cells, they will always be available within four to six hours. |
| 14 | The only symptoms of a delayed haemolytic transfusion reaction are lethargy, yellow colouring of the whites of the eyes (the sclera) and the passing of dark urine. |
| 15 | In the case of Patient 3, she suffered a large postpartum haemorrhage of approximately 3 L, due to uterine atony. |
| 16 | In the case of Patient 3, placental swabs grew *Streptococcus aureus*. |
| 17 | Case reports of anti-U in the literature include descriptions of one case of a fatal acute haemolytic transfusion reaction and at least one case of stillbirth due to anti-U. |
| 18 | The 2015 SHOT report describes one case of mortality due to severe delayed HTR and four additional reports of major morbidity, all attributed to Kidd blood group antibodies. |
| 19 | Use of the monocyte monolayer assay (MMA) to predict clinical severity of an antibody is used widely in the UK blood service as an accurate prediction of the severity of antibody reactions *in vivo*. |
| 20 | Therapeutic plasma exchange (TPE) can be used for the removal and neutralisation of free Hb caused by a delayed HTR, allowing for the restoration of tissue perfusion and to limit renal toxicity. |

### Breast cancer biomarkers in clinical testing: analysis of a UK national external quality assessment scheme for immunocytochemistry and *in situ* hybridisation database containing results from 199 300 patients.

Dodson A, Parry S, Ibrahim M *et al. J Pathol Clin Res* 2018; **4** (4): 262–73 (https://www.ncbi.nlm.nih.gov/pubmed/30066480) **Assessment No: 080719**

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| 01 | More than 299,000 patient biomarker data sets were collected in the study. |
| 02 | Menopause status was not captured, patient age at test ≥56 years was defined as post-menopausal. |
| 03 | Cut-points for defining oestrogen receptor-positive disease were Allred >3. |
| 04 | Two cut-points were used to define progesterone receptor status of Allred ≥3 and Allred ≥4. |
| 05 | The results collected by NEQAS suggest that practice for assessing progesterone receptor positivity were not standardised. |
| 06 | After exclusions, 182,413 (97.4%) were collected between 2011 and 2015. |
| 07 | The median age of patient ER/PR status assessment was 51 years. |
| 08 | The inter-quartile range of patient testing was 51–71 years. |
| 09 | HER2 status in UK patients showed an overall positivity rate of 13.2% in the collected sample data. |
| 10 | Out of the cohort of breast cancer patients examined, 61.8% were symptomatic. |
| 11 | No difference in the frequency of HER2-positive cases was observed in ER-positive versus ER-negative breast cancers with respect to nodal status (whether Nx, N0, N1 or N2) and grade. |
| 12 | ER-negative breast tumours were much more likely to be HER2 3+ than ER-positive tumours. |
| 13 | Intraductal carcinoma accounts for 80.1% of the entire examined cohort. |
| 14 | The majority of breast tumours in the report were less than 20 mm in diameter. |
| 15 | The number of ER-negative / PR-positive cases was large (69.3%). |
| 16 | In ER-positive / PR-positive tumours, the HER2 positivity rate increased rapidly with increasing patient age, up to age 60 years, after which it plateaued at approximately 6.5%. |
| 17 | Table 2 describes the majority of HER2-positive patients to be most likely to have an N3 node status. |
| 18 | There is a change in ER positivity status related to age. The collected data show younger patients <35 years had a 66.6% positivity to 86.9% in ≥90-year-old patients. |
| 19 | Across the whole cohort group, the progesterone positivity rate was 74.9%. |
| 20 | Increasing HER positivity rates were strongly associated with symptomatic versus screen-detected tumours. |

## REFLECTIVE LEARNING

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| 01 | How does this paper reflect the findings of the few other studies cited by the authors? Discuss this in detail. |
| 02 | In what other circumstances, including antibody specificities and ethnicities, would it be wise to have the same discussions with a multidisciplinary team, even if, after the discussion, the decision is not to go ahead with 'least-incompatible' units? |
| 01 | Review the mechanisms used in your laboratory to assure accuracy of test sensitivity to record breast HER2, ER and PR. |
| 02 | Review the local failsafe mechanisms for attending to assay drift for ER, PR or HER2 rates. |