JOURNAL-BASED LEARNING EXERCISES

IBMS Institute of Biomedical Science
Continuing Professional Development

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

DEADLINE WEDNESDAY 2 DECEMBER 2020

Position paper on International Collaboration for Transfusion Medicine (ICTM) Guideline 'Red blood cell specifications for patients with haemoglobinopathies: a systemic review and guideline'. Trompeter S, Massey E, Robinson S; Transfusion Task Force of the British Society of Haematology Guidelines Committee. *Br J Haematol* 2020; **189**: 424–7. Assessment No 080220

01	The International Collaboration for Transfusion Medicine Guidelines was established in 2010 and includes international experts.	11	Many adults in the UK who are on long-term transfusions for SCD are treated on automated exchange where the regime can vary from six to eight weekly and need 8–12 units a time.
02	The British Society for Haematology Guidelines Committee has four taskforces.	12	The donor population in England is less than 88% Caucasian, therefore matching large quantities of blood for these antigens routinely is feasible.
03	The first recommendation is aimed at patients with sickle cell disease (SCD) who have one or more clinically significant antibodies.	13	Patients may have their transfusions delayed if blood is requested beyond their Rh and K antigen match.
04	The first recommendation also states that patients should be transfused with CcEe- and K-matched red blood cells.	14	Blood services are striving to increase donations from black and minority ethnic groups.
05	The 2013 BSH guidelines recommend that the patient's RBC phenotype but not genotype should be known prior to transfusion.	15	The fourth recommendation is aimed at patients with thalassaemia syndromes who have only one or more clinically significant alloantibodies requiring transfusion support.
06	Phenotyping patients is a cheaper option that genotyping, and is only carried out at one site: IBGRL, Filton, Bristol.	16	Provision of blood which is CcEe-, K-, Fy^a-, Fy^b-, JK^a-, Jk^b, Ss-matched is not current UK guidance or BSH guidance for patients with thalassaemia who have one or more alloantibodies.
07	The second recommendation is for patients with sickle cell disease who have one or more clinically significant antibodies to be transfused with antigen-negative blood.	17	Alloimmunisation of patients who have thalassaemia with one or more alloantibodies is often caused by Rh and Kell antigens and is usually due to historical transfusions prior to recommendations for Rh and Kell matching.
08	BSH guidance on compatibility has previously recommended that red cells provided for transfusion should be antigen-negative for all antibodies.	18	Development of further antibodies in transfusion-dependent thalassaemia patients occurs more commonly than patients in the sickle cell cohort.
09	BSH guidance states that patients should be informed of their antibody status and be given a card to notify health workers.	19	A precision transfusion model could be applied to each patient if whole-genome sequencing of donors and patients is introduced, creating more stringent matching.
10	The third recommendation for patients with SCD who have one or more alloantibodies should be transfused with CcEe-, K-, Fy^a-, Fy^b-, JK^a-, Jk^b- only red blood cells to reduce the risk of alloimmunisation.	20	The ICTMG guidance focuses on the age of blood as well as the provision of HbS-negative units.

REFLECTIVE LEARNING

01	Compare the terms phenotype and genotype.	02	Discuss the benefits and accompanied limitations of extended phenotyping for new SCD patients.

DEADLINE WEDNESDAY 2 DECEMBER 2020

Digital pathology in the time of corona. Stathonikos N, van Varsseveld NC, Vink A *et al.*
J Clin Pathol 2020 Jul 22; jclinpath-2020-206845. doi: 10.1136/jclinpath-2020-206845. Online ahead of print (https://jcp.bmj.com/content/early/2020/07/21/jclinpath-2020-206845). Assessment No: 080720

01	Submitted specimens and autopsies need to be treated as potentially infectious.	11	A digital diagnostic workstation included a 3D mouse and multiple screens, of which a 27-inch, 4k display with an IPS panel was used as the main image viewer.
02	The UMC Utrecht started to build up a digital pathology infrastructure in 2018 based on three Leica Aperio scanners, a tape storage system and a custom in-house-developed image integration software.	12	During the multidisciplinary meetings that are often done by another pathologist than the one signing out, including full review of all cases to be discussed, no errors attributable to working from home have been detected in the first six months.
03	UMC Utrecht has amassed a complete digital archive of scanned histology slides over the last two years.	13	Pathology residents were also divided into two teams that would work week-on/week-off on the premises and from home. In each team, junior and senior residents were equally represented. The supervising pathologist kept in touch with both teams to coordinate activities.
04	The scanned slides are added to the correct case, based on the barcode information alone.	14	The residents would not place annotations and comments on the digital slides, which could be reviewed by the supervising pathologist, and created the pathology reports by structured reporting or keyboard.
05	The UMC Utrecht PACS holds all images of diagnostic cases from the department, including order forms, and macro, electron microscopy, immunofluorescence, autopsy and fluorescence *in situ* hybridisation (FISH) images.	15	Meetings were replaced by video conferencing (Zoom, later WebEx because of security concerns), including the monthly staff and diagnostic meetings.
06	The PACS employs a direct archive access protocol that permits us to view the archived cases without the need to retrieve them from archive (an otherwise time-consuming operation), which effectively forbids us to access the history of a patient since 2008.	16	The removal of tubes and lines was preferably performed on the ward before moving the patients to the morgue.
07	The 2020 COVID-19 crisis did not force us to quickly come up with a new way of working, based on international standards and social distancing, even within the department.	17	If the COVID-19 status of the autopsy patient was evident, we considered the patient positive and took precautionary measures according to our protocol of infected autopsies.
08	Working from home was facilitated through a VPN connection.	18	The molecular findings were reported in the pathology reporting system. If any feedback was necessary (eg reflex testing), this was mentioned in the digital molecular authorisation list, which was regularly checked.
09	Passage between the reception desk and grossing room was restricted to avoid cross-contamination and was only used for transfer of primary specimen containers and forms. All forms were digitised and made available via the PACS and were stored afterwards in this reception area.	19	The wish list to further optimise the home-working space consisted of the sync between the PACS and pathology reporting system (UDPS), speech recognition, a 3D mouse, higher image retrieval speed and higher screen resolution.
10	Medium-risk and high-risk tissues were fixed in formalin for at least 24 hours and further initially dissected (eg opening bowel specimens) while submerged in formalin.	20	Although there were certainly disadvantages for family life by being much more at home (with less morning stress for those parents with young children), some faced higher stress having to work at home with the kids around, day care facilities being closed.

REFLECTIVE LEARNING

01	Reflect upon the changes the coronavirus pandemic has brought on your department.	02	Consider the potential changes required for your department to migrate to digital pathology.