Bone Marrow Transplantation (2020) 55:779–792
https://doi.org/10.1038/s41409-020-01110-y

ABSTRACTS COLLECTION

The 46th Annual Meeting of the European Society for Blood and Marrow Transplantation: Quality Management Group Poster Session (P722-P740)

29 August - 1 September, 2020 ● Virtual Meeting

Modified and published with permission from https://www.ebmt.org/annual-meeting

Sponsorship Statement: Publication of this supplement is sponsored by the European Society for Blood and Marrow Transplantation. All content was reviewed and approved by the EBMT Committee, which held full responsibility for the abstract selections.

Quality Management Group Poster Session

P722.

Implementation of JACIE accreditation at a novel transplant program: the impact on the clinical practice

Cira Riccardi[1], Simona Maria Muggianu[1], Maria Celentano[1], Tiziana Ascione[1], Antonio Meles[1], Mariangela Pedata[1], Mario Toriello[1], Giuseppe Russo[1], Aniello Galdi[2], Caterina Fusco[1], Michele Vacca[1], Assunta Viola[1], Vincenzo Faraone[1], Barbara Pocali[1], Mimmo Ripaldi[1], Felicetto Ferrara[1], Alessandra Picardi[1,3]

[1]*AORN A. Cardarelli, Naples, Italy,* [2]*Federico II University, Naples, Italy,* [3]*Tor Vergata University, Rome, Italy*

Background: FACT-JACIE standards establish criteria for a comprehensive quality management program that covers the major domains of activity in stem cell transplantation. It is known that clinical improvements are driven by the implementation of the accreditation programs but if changes in clinical practice may result from the application of the standards is still matter of debate. Aim of this study is to evaluate which type of impact on the management of a new Transplant Program has had the implementation of a quality system, according to JACIE Standards.

Methods: From June 2019, Transplant Program of AORN Cardarelli has started the allogeneic activity and is actively working in order to achieve the JACIE accreditation. In this context, from January 2019 to date, 61 transplant procedures have been carried out (54 autologous and 7 allogeneic). Nine non-compliance reports have been collected at the clinical unit, one of which has been considered as adverse event related to autologous product, that cryoprecipitated during the cryopreservation. Moreover, the quarterly analysis of clinical data documented 12 sepsis, 5 of which CVC related (4 *S. haemolyticus* and 1 *S. hominis*) over the last 6 months. The *S. haemolyticus* represents a gram positive germ potentially carried by health workers, highly dangerous in immune-compromised hosts if Methicillin-resistant (MRSA). For this reason, after a meeting involving all the clinical staff, who agreed to understand if the germ's transmission was related to a potential human carrier, bilateral nasal swabs were performed to the transplant team.

Results: The transversal root cause's analysis documented that the product's adverse event was linked to lack of specific training in cryopreservation procedure of hematologists who address the patients to PBSC collection. The presence of IgM cryoglobulin related to the lymphoproliferative disorder of patient was known but not considered as a factor of risk and, consequently, not communicated to the transplant program team. The conclusion of this analysis consisted of a training meeting concerning the graft processing involving all the haematologysts. On the other hand, the nasal swabs showed 3/22 workers' colonizations, one of which likely related to the *S. haemolyticus* MRSA patients' infections. For this reason, the hand washing and

individual disposable use retraining was successfully performed. Unexpectedly, other two workers resulted *E. coli* positive sensible to all the antibiotics and *K. pneumoniae* ESBL+, respectively. All of them suffer of immunological disorders for which 1 with *E. coli* was in treatment with topical therapy and the other 2 with *S. haemolitycus* MRSA and *K. pneumoniae* ESBL+ were ongoing immunosuppressive therapy. The colonization of multi-drug resistant germs is a risk factor for dangerous infections' development of personnel affected by immunological disorders and for potential patients' contamination, for which the job replacement of the nurses was considered.

Conclusions: Our data confirm that the JACIE accreditation system represents a useful tool for a critical management of the transplant programs allowing the identification of the problem solving policy for the stem cell clinical practice and the health workers safety.

Disclosure: Nothing to declare.

P723.

How one processing center prepared for its first JACIE inspection?

Tina Cirman[1], Vesna Galvani[1], Primož Poženel[1], Marko Cukjati[1]

[1]*Blood Transfusion Centre of Slovenia, Ljubljana, Slovenia*

Background: Apheresis and Processing Centres of Department for Therapeutic Services (DTS) have participated in the haematopoietic stem cell (HSC) supply for over 30 years. The ever evolving quality management, communication between involved parties and continued improvement of the procedures encouraged us to apply for the JACIE accreditation. Processing laboratory has been the first to meet the stringent demands for the quality and safety of the products.

Methods: The preparations for the accreditation started in December 2015 when the JACIE working group was formed, consisting of 4 members (two from the Processing and one from the Apheresis centre, one from the Quality Management). In the following 15 months the group met at 26 meetings, determining compliance of the center with the JACIE standards. The personnel of the DTS, colleagues from the donor registry, tissue typing center, clinical department and the management of the Blood Transfusion Centre of Slovenia (BTC) all participated in the implementation of the corrective actions.

At the same time, several lectures on the significance and benefits of the JACIE accreditation were given to the employees of the BTC and the wider healthcare community. Two employees participated in the course on the JACIE standards, one becoming a JACIE inspector. Several employees visited a JACIE-accredited organization in U. K. to observe and exchange experiences on good practices.

Results: The application was submitted on February 27th 2018, 14 months after the work started. The agreement between BTC and EBMT was signed in July 2018 and all the pre-audit documentation submitted at the end of the same month. The inspection took place on October 2nd and 3rd 2018 with the final report from JACIE inspectors received at the end of January 2019. The implementation of the corrective actions took another 6 months so the documentation with the description of the corrective actions was submitted on July 25th 2019. At the moment of writing, the center is awaiting JACIE decision.

Conclusions: So what did we learn? Accreditation takes a lot of time. It needs a lot of resources of all kinds (financial, personnel, facilities). The procedure of applying for the accreditation runs smoother if there is a central person who coordinates the extra-work. But most of all, the accreditation is a group effort and the work is done more efficiently if there is a group of highly motivated people who have an understanding of why the accreditation is needed.

The path we followed was always for the benefit of the patient. The implementation of JACIE standards has changed the mindset of entire department and is now totally focused to quality and safety products.

Clinical Trial Registry: n/a.

Disclosure: n/a.

P724.

Tips for generating successful "teamworking" in our healthcare facilities: the experience of a hospital unit in a French cancer center

Sabine Khalife-Hachem[1,2], Christelle Dufour[1], Nadia Aguini[1], Kamelia Alexandrova[1], Jean Henri Bourhis[1], Valerie Lapierre[1], Sylvain Pilorge[1], Sylvie Psyche[1], Pascale Usubelli[1], Eric Solary[1,3,4], Etienne Minvielle[1,5], Cristina Castilla-Llorente[1]

[1]*Institut Gustave Roussy, Villejuif, France,* [2]*Ecole des Hautes Etudes en Santé Publique (EHESP), Rennes, France,* [3]*Université Paris-Saclay, Le Kremlin Bicetre, France,* [4]*INSERM U1170, Paris, France,* [5]*Institut Polytechnique de Paris, Paris, France*

Background: Nowadays, the concept of "teamworking" is emerging in healthcare institutions. It's not just a simple addition of individual skills. We asked ourselves the question of the application of collective work in our institution and its efficiency. That´s why we chose to analyze "team-

making" in a hospital unit, as part of its preparation for internal audit in the setting of the JACIE accreditation.

Methods: We joined the group performing internal audit on the apheresis unit in Hematology JACIE program, in one of the largest cancer centers in Europe. This internal audit was conducted to determine compliance with standards according to FACT-JACIE standard 7th edition. To analyze teamwork, we collected 3 types of data: more than 100 h of implicative observation, participation in meetings and interviews with various actors of the team, written documentation of observations and more than fifty exchanges by e-mail. All these data were analyzed according to five micro-management principles detailed in our study (governance, psychological environment, framing, learning organization and crossing borders).

Results: The preparation for JACIE allowed the actors to embody some principles of micro-management to achieve the objectives set. Their framing was good, with clear objectives and a satisfactory material commitment. The mesh effort was palpable, except that the time constraint prevented team members from investing enough in the preparation, with a very heavy workload. Despite this, the environment was conducive to exchanges and listening. On the other hand, the distribution of missions and execution of tasks was complicated, mainly because of a "partial" collective governance, which was still poorly defined, with obstacles such as frontiers of knowledge and status, which, when exercised, prevented any collaboration with negative consequences on work organization.

First, intensification of work seems to be the origin of the difficulties encountered, lack of time being the main factor inhibiting the performance of JACIE team. Interprofessional network was also affected by this constraint. Despite this, we have shown a favorable psychological environment. This is why it is becoming necessary to be both a good manager and a good healthcare professional, but this is not spontaneously acquired. We raise the urgency to train health professionals to management so they can better integrate coordination and organization in their work. Second, shift towards collective governance is another sensitive subject. In order for this collective governance to be achievable, it's necessary to invest in the awareness and training of existing jobs in the organization and management, and to invest in the recruitment of people holding new coordination jobs.

Conclusions: Work overload, time constraint, misguided governance, and hidden power games, didn't prevent this team from reaching its goal of integrating the apheresis program into the Hematology JACIE quality management program, and this because of the considerable personal commitment of some team members. To succeed in team-building ideally, new management tools and new "coordination" jobs must be implemented, as well as training and awareness of health professionals to management. But, faced with increasingly constrained financial means, would we be able to invest as much for the long term?

Disclosure: Nothing to declare.

P725.

Implementation of a quality system for running a cell and gene therapy clinical trial within a JACIE-accredited transplant program

Simone Biagini[1], Mario D'Angelo[1], Giuseppina Li Pira[1], Elia Girolami[1], Valentina Cirillo[1], Maria Giuseppina Cefalo[1], Gianpiero Conflitti[1], Pietro Merli[1], Mattia Algeri[1], Federica Galaverna[1], Annalisa Ruggeri[1], Vincenzo Iaconianni[2], Franco Locatelli[1,3]

[1]Bambino Gesu Children's Hospital, Rome, Italy, [2]ICmed S.R.L, Sesto San Giovanni, Milano, Italy, [3]Sapienza University of Rome, Rome, Italy

Background: The clinical trial center conducting cell and gene therapy clinical studies is asked not only to run the studies according to the study protocol/GCP rules, but also to maintain high quality standards in compliance with current legislation and accreditation entities. One of the challenges in running several clinical trials is due to the different trial-specific requirements. To overcome this issue, a tight interconnection of regulatory and operational aspects associated with cell collection and cell manipulation is required to avoid potential risks in both communication and management due to the multiple stakeholders involved in a clinical trial.

In this perspective, it is essential to identify all the key-subjects involved in the trial, the characteristics of procurement and manipulation of the collected cells (gene-modified or cellular products) and the national and international regulatory requirements.

The Department of Pediatric Hematology/Oncology and Cell and Gene Therapy of the Bambino Gesù Children's Hospital runs different clinical trials in the frame of the Quality System and Good Clinical Practice (GCP). Thus, an internal documental organization is highly desirable to avoid SOP duplications and to comply not only with the national (CNT/CNS) and International JACIE Standards, but with the study-specific requirements for each trial.

Methods: We developed a trial-specific tool named "Clinical Trial Project Plan" which details: (i) the organizational structure involved in the trial; (ii) the different functions in the Transplant Program with a description of tasks and responsibilities; (iii) the relations with the various subjects external to the Transplant

Program; (iv) the methods for implementation of the Quality System of the Transplant Program for each activity pertaining to the process.

Results: This trial-specific tool has been applied to simplify management of the different studies run in our Department, considering that at least 6 SOP (e.g. taking charge, manipulation, cryopreservation, product release, labeling, thawing and infusion) needed to be modified according to trial-specific requirements. Thus, the project plan has been instrumental to avoid SOP duplications in running 2 no-profit clinical trials on CAR T-cell therapy in children with B-cell lymphoid malignancies and neuroblastoma, 4 pharma-sponsored clinical trials on CAR T-cell therapy in children with hematological malignancies, 4 pharma-sponsored clinical trials on gene therapy for treating inherited disorders (Thalassemia, Sickle-cell diseases and Adrenoleukodystrophy), 3 no-profit cellular therapy trials.

Conclusions: This document has been created to provide a practical guidance for centers who run several clinical trials within their Quality System. The Project Plan allows taking into account the different requests by each trial by identifying deviations from the SOP described in the Quality System and, thus, lightening the documental burden associated to the management of the different trials in the frame of a Transplant Program.

Disclosure: Nothing to declare.

P726.

New online platforms in quality management: coordination and multidisciplinary care

Marta Garcia-Recio[1], Teresa Ros[1], Neus Beltrán[1], Marta Torres[1], Antonia Sampol[1]

[1]*Son Espases University Hospital, Palma, Spain*

Background: Centers already accredited by FACT/JACIE to perform bone marrow transplant (BMT) in adult and pediatric patients usually share quality management (QM) reports and protocols through internal and secured networks. However, despite most centers have an institutional web platform shared with all departments, relevant QM documents are usually restricted to professionals working in one specific department like BMT (ex. internal or external audits). After the FDA and EMA approval of Immune Effector Cell (IEC), a fast and effective coordination with different departments, institutions and health care professionals (doctors, physician's assistants, nurses or technicians) became an urgent issue. Our center developed an online regional platform accessible to any health care professional who may have a patient candidate for BMT or IEC in our region.

Methods: For years, nurses at our center who rotate between different departments have been sharing documents through an online platform called "sharepoint". Recently, the institution decided to expand the use of this informatic tool to connect all different hospitals and departments in our region. To do so, we created a multidisciplinary website for BMT with a subsite for IEC. Both sites require institutional passwords and usernames to get access. Each folder and document have its own privacy settings which can be customized to secure any modifiable documents. All committees, meetings (including QM), assistants and topics are marked on our online calendar. Specific training was offered to all new users.

Results: Since April 2019 our BMT and IEC multidisciplinary "sharepoint" has progressively been opened to other departments and regional health care institutions improving our coordination and effectiveness. The implementation of this tool has also improved the team implication in our quality system.

Conclusions: International accreditations are essential tools to guarantee good practices in different centers. We present an online platform that facilitates the correct application of the standards and the integration of quality management in any professional daily activities. This tool also improved our multicenter and multidisciplinary coordination. However, its development and maintenance require organizational skills and specific training in QM. We consider essential the role of the quality manager to successfully implement the presented platform.

Disclosure: Dr Garcia-Recio and Dra. Sampol report honoraria from Janssen and Takeda.

P727.

Risk management assessment in implementing CAR-T cell therapy in a clinical unit

Ann-Mari Berthelsen[1], Jeanette Holder[1], Camilla Borch Jacobsen[1], Søren Lykke Petersen[1], Anne Fischer-Nielsen[1]

[1]*Rigshospitalet, Copenhagen, Denmark*

Background: CAR-T cell therapy is expanding worldwide and even well-established Jacie accredited allogeneic bone marrow transplant centers faces new procedure and workflows in the implementation of this novel treatment. In order to secure clinical quality and patient safety during implementation of these new procedures, risk assessment is essential. The new procedures are addressed in all pathways from referral to CAR-T treatment until control/follow-up visits post CAR-T treatment. In the planning phase from referral until lymphodepletion chemotherapy, several stakeholders are involved in the process, including cell therapy

facility, pharmaceutical industry, referring physicians, transplant coordinator and transplant physicians. Therefore, this phase can have serval risk points where internal and external factors may affect the procedures.

The aim of this project is to systematically identify critical risk factors during the implementation of CAR-T cell therapy in the period from referral until lymphodepletion chemotherapy.

Methods: We established a Microsoft Visio diagram for the whole CAR-T cell procedure. The diagram is divided into different areas from referral to discharge of the patient. We focused on the time from referral to start of lymphodepleting therapy and analyzed along the way in the period from mid-September to end of November 2019.

With inspiration from ISO 27005 Risk Assessment Process Analyze Tool, we analyzed each area of the Microsoft Vision diagram to address protentional risk factors that could affect the outcome of the CAR-T cell procedure.

Results: We identified four local procedures in our workflow since these are areas, we can improve to maintain a high level of patient safety:

- Request of collection and confirmation from the apheresis unit.

  In collaboration with the Stem cell lab. we established a written form for request of apheresis with a signature field to be completed and returned to the transplant coordinators, as confirmation.
- Inclusion of Syphilis test according to national law.

  We added the Syphilis test to the blood test order form in our electronic patient file and the test is added to our clearance checklist.
- Written confirmation of the infusion date from the Stem Cell lab...

  On our current order form for requesting infusion of products a signature field has been added.
- According to our Microsoft Visio chart we initially planned the full pre-examination program to take place before the harvest. We experienced that if the pre-examination tests are performed before harvest, they will expire according to international guidelines at the time of infusion of the CAR-T product.

  We have revised our Microsoft Vision chart in order to change the logistics, so the tests will not expire. We have added a pre-examination before harvest and a full examination before conditioning/infusion.

Conclusions: In order to secure clinical quality and patient safety during implementation of CAR-T cell therapy, risk assessment is essential. Risks were identified and procedures were changed.

Since the risk assessment is performed along the way of planning and treating CAR-T cell patients, we will need to monitor and review the process again, to make sure the new established procedures are well implemented.

Disclosure: Nothing to declare.

P728.

Febrile reaction after HSC infusion is more frequent if no steroid premedicaton is given which results in more frequent use of antibiotics early post-transplant

Lucija Romić[1], Violeta Rezo Vranjes[2], Zinaida Peric[2,3], Lana Desnica[2], Ranka Serventi-Seiwerth[2], Radovan Vrhovac[2,3], Nadira Durakovic[2,3]

[1]Community Healthcare Center Zagreb West, Zagreb, Croatia, [2]UHC Zagreb, Zagreb, Croatia, [3]University of Zagreb, Zagreb, Croatia

Background: There is no consensus as to the need for steroid premedication before fresh product hematopoietic stem cell (HSC) infusion, but most centers would avoid it, at least in ABO compatible transplants. Our institutional SOP warrants steroids to be given in case of ABO incompatible graft infusion. However, in case of febrile reaction, happening usually after hours, on call staff frequently prescribes antibiotics along with antipyretics. Considering the recent data on the value of microbiota and its influence on GVHD incidence, we analyzed the frequency of febrile reactions and the use of antibiotic after HSC infusion in 149 consecutive patients. The aim of this study was to evaluate if a change in current SOP is warranted.

Methods: In the time period between 1/2018 and 10/2019 total of 149 patients were transplanted in our institution. Per institutional SOP, all patients received premedication consisting of 20-mg chloropyramin-chlorid iv, and in case of ABO incompatible graft 1-mg/kg methylprednisolone iv.

Results: Median age was 48 years (3–70); 72 female and 77 male patients. Majority of patients was transplanted for AML (n = 72, 48%), 19 (13%) patients had MDS; 24 (29%) ALL, 6 (4%) AA, 6 (4%) OMF, 9 (6%) HL, 7 (5%) NHL, 2 (1%) CML and MM, 1 Fanconi anemia and 1 HLH. Ninety-five patients (64%) received graft from a matched unrelated donor, 30 (20%) from matched related donor and 24 (16%) from haploidentical related donor. Fifty-five (37%) patients received myeloablative conditioning, 94 (63%) reduced intensity/NMA. In 72 (48%) patients there was no ABO incompatibility, while 22 (15%) had major, 38 (26%) minor and 17 (11%) bi-directional ABO incompatibility.

Fifty-one patients (34.1%) received antibiotic treatment prior to day 0 and were excluded from further analysis. Fifty-two patients (34.8%) received steroids ("steroid" group), and from that group 12 patients (23%) developed fever after graft infusion, while in the group of 46 patients (30%) that did not receive steroids ("no-steroid" group) prior to graft infusion, 26 of them (57%) developed fever ($p < 0.001$). In the "steroid" group 9 (17%) patients had received iv antibiotics as opposed to "no-steroid" group where 16 (35%) received iv antibiotics ($p < 0.05$). There was no difference in the number of patients that had positive blood cultures within 24 h of graft infusion; in "steroid" group there were 3 (6%) and in "no-steroid" group 4 (7%) such patients ($p = 0.27$).

Conclusions: This analysis showed that even though there is no difference in the frequency of febrile episodes caused by a systemic infection, a significantly more patients that do not get steroid premedication develop fever and are treated with iv. antibiotics. Use of antibiotics early post-transplant without real need could potentially have further implications due to its influence on microbiota, as well as MDR strain selection. There are two possible changes that could be instigated: (a) all patients could receive steroids prior to HSC, or (b) revision of infusion SOP to include more detailed instructions as to treatment of febrile reactions early after infusion coupled with training nurse staff and on-call physicians.

Disclosure: Nothing to declare.

P729.

Searching for other topics of qualification plans in the transplant program clinical part—the one center experience

Marie Dobrovolna[1], Jan Vydra[1]

[1]*Institut of Hematology and Blood Transfusion, Prague, Czech Republic*

Background: As initial accredited center (JACIE v.6.01) we reviewed all procedures and processes to implement the requirements of the JACIE v7 Standards.

Compliance with C.4.13 and D.4.13 directly followed the already established system of defined requirements for critical manufacturers, vendors, equipment, supplies, reagents, facilities and services and performed validations.

The requirements of the new text of B.4.13 were a challenge to consider whether other areas are also suitable for the qualification plans formulation, not just for the marrow collection and processing or for the clinical procedure's technical aspects only. After all, the qualification plan in the broader sense is the answer to the question "What must be done to ...?"

Methods: The process diagram of the clinical part of the institutional Transplant Program was analyzed and a number of topics suitable for the formulation of qualification plans were found.

Results: In clinical care we defined the possibilities of qualification plans, e.g. for HSCT indication of patients, for choice of the best available donor, for the new treatment procedure implementation or for removal and disposal of the cryopreserved cell therapy product.

The new treatment procedure qualification plan for CAR-T therapy was defined. The plan consist of the type of treatment (approved/experimental), availability of external information sources, cooperation of other facilities, treatment indication, patient information, informed consents, patient specific risks and complications management, technical support, personal education training and competency, requirements of cell collection, products processing and storage, transport, application workflow, related records and data management, safety aspects and quality management.

Further to the issued recommendations of the Czech Hematology Society, we proceeded to establish criteria for long-term storage of cryopreserved cell therapy, which we have not yet clearly defined.

We used the Qualification Plan Points to create a specific checklist forms that allow us to clearly identify compliance with the Qualification Plan in practice and detect possible deviations.

So far, we have used this approach to introduce a new immunotherapeutic procedure (CAR-T19) and optimize related procedures and documentation (SOP structure and content).

We also defined institutional policy for cryopreserved cell therapy products long term storage.

Specific checklists are routinely used for all related bone marrow donations realized in cooperation with external facilities.

Similarly, we verify the continuity and accuracy of recipient and donor medical documentation and stored electronic data.

We want to use this approach wherever we work on new topics or where the evaluation of established quality management shows us that there is higher probability of deviations or potential risks. However, this is always based on the conditions, established procedures and control mechanisms specific to the center.

Conclusions: Formulation of qualification plans for other areas, not required by JACIE standards only, according to the center´s experience, enables better preparation of new processes and procedures, more effective internal control activities and better long-term adherence to daily practice with defined procedures.

Disclosure:

Dobrovolna Marie : Nothing to declare.

Vydra Jan: Nothing to declare.

P730.

Maintaining donor safety and welfare throughout cellular therapy product donation

Abeer Banna[1], Samar Okaily[1], Ammar Zahreddine[1], Ali Bazarbachi[1]

[1]*American University of Beirut, Beirut, Lebanon*

Background: The Joint Accreditation Committee of ISCT and EBMT (JACIE) sets standards to protect donors. At the American University of Beirut Medical Center (AUBMC) prior to November 2018, the issues encountered with the donor workflow were decentralized donor information, delay in processing collection requests, and delay in obtaining the mobilization agent from the pharmacy. The objective of this project is to show that the implementation of Electronic Health Records (EHR) enabled the transplant team to provide comprehensive care through centralization of information and automation of collection requests, as well as mobilization orders.

Methods: A multidisciplinary task team came to order including clinical application analysts, oncology pharmacist, transplant physicians, transplant coordinators, and unit nurses. The team met regularly during the adoption phase of the EHR project to integrate all processes related to donors into a single automated workflow that includes the following core activities: The BMT episode, BMT SmartForm, and apheresis plan.

Results: In November 2018, AUBMC implemented the EHR. Donor information became readily available for all team members in a timely manner; the BMT episode stores donor encounters under one umbrella, the BMT SmartForm provides a link between the donor and recipient, and the medication administration record (MAR) stores the mobilization administration.

Donor planning starts by the application of the apheresis plan which includes the mobilization and collection orders. The collection request includes all information required by JACIE and is automatically printed in the Stem Cell Processing Lab (SCPL) upon signature; this ensures completeness of collection information and allows the apheresis unit and SCPL to plan the collection.

The billing team can immediately view the mobilization orders upon signature. This allows billing officers to secure financial clearance in a timely manner and decrease the average time needed to obtain medications from the pharmacy.

Conclusions: The implementation of EHR at AUBMC provided a closed-loop process that starts with donor identification and ends with cellular therapy product collection. Centralization of donor information, automation of collection requests, and automation of mobilization orders allow the integration of JACIE standards into practice and enable the transplant team to view and review donor information in a timely manner, thus maintaining donor safety and wellbeing throughout the process.

Disclosure: Nothing to declare.

P731.

Integration of cellular therapy in the JACIE (Joint Accreditation Committe ISCT-EBMT) quality management plan. single center experience

Maria-Jose Jimenez[1], Anna Torrent[1], Sandra Suarez[2], Fatima Hidalgo[1], Mireia Morgades[1], Blanca Xicoy[1], Montserrat Batlle[1], Susana Vives[1], Miriam Moreno[1], Juan-Manuel Sancho[1], Gladys Ibarra[1], Laura Abril[1], Albert Oriol[1], Josep-Maria Ribera[1], Christelle Ferra[1]

[1]*Universitat Autónoma de Barcelona, Badalona, Spain,* [2]*Hospital Alvaro Cunqueiro, Vigo, Spain*

Background: The administrative authorization to perform T-cell chimeric antigen receptors (CAR-T) therapy in Spain has been limited to specific centers. Having a JACIE´s accredited transplant program was crucial to be considered for CAR-T cell therapy. In addition, centers had to prove that they had a Quality Management Plan (QMP) focused on cellular therapy (CT). We aim to show the implementation of the CAR-T cell therapy program in a JACIE QMP from a single center.

Methods: From January 2018 to October 2019 CAR-T therapy was administered to 10 patients. The circuits and involved professionals were developed. Moreover, standard operative procedures (SOP) and patient information sheet specific of CT were designed and activated.

Results: From January 2018 to December 2018, 6 CAR-T were administered as part of a clinical trial. Most of those procedures were prescribed by the investigational protocol. Then, in January 2019 our institution was accredited for the administration of one commercial CAR-T, Tisagenlecleucel (Kymriah®), which allowed to set up the integration of the CAR-T therapy and the HSCT program in a global CT program. Some critical points were considered at this point: the need of a CAR-T committee meeting before each patient hospitalization, communication with the CAR-T manufacturing centers (in special for CAR-T production and distribution to the site), control of the stock of tocilizumab at the inpatient yard and at the Intensive Care Unit and training the staff on the new therapy. In order to integrate CAR-T procedures in our QMP, the main quality documentation (quality manual, process map and organization chart) was updated. New SOP and other documentation were created (e.g.: patient eligibility

criteria for CAR-T therapy, leukapheresis, lymphodeplecting conditioning, identification and treatment of adverse events and informed consent and patient information sheet for follow-up). From January 2019 to October 2019 6 patients were included in the CT program, 5 of which finally received the CAR-T therapy (acute lymphoblastic leukemia [n = 2] and diffuse large B-cell lymphoma (DLBCL) [n = 3]). The remaining patient, with DLBCL, died by infection before CAR-T leukapheresis. All patients followed our site´s protocols and there were no remarkable incidences.

Conclusions: Having a strong QMP associated to HSCT program has facilitated the design and integration of new SOP for CAR-T therapy in a global CT program. As a consequence, we are able to manage and follow-up more efficiently the patients treated with this novel CT outside of clinical trials.

Funding: Josep Carreras Leukemia Research Institute (IJC), Badalona, Barcelona, Catalonia, Spain.

Disclosure: Nothing to declare.

P7320.

Audit—a method to evaluate interventions—experiences from an attempt to improve nutritional status in patients treated with autologous hematopoietic stem cell transplantation

Lea Brandt Kristensen[1], Stine Skriver Bregenov[1]

[1]Aarhus University Hospital, Aarhus N, Denmark

Background: Audit is a method to measure if interventions have had the desired effects.

Patients receiving autologous transplantation are at risk off weight loss due to oral mucositis, nausea, conditioning and disease. As we consider a weight loss of more than 5% at day 30 after autologous transplantation, may endanger the patients' health, we investigated how many patients lose that much.

The investigation was carried out in 2015. 50% of patients treated with BEAM, TBI/CY or Melphalan conditioning treatment were included.

The result showed that 60% of the patients lose more than 5% of their body mass in kilo grams (Kg). The result contributed to interventions developed on the basis of both experience and literature review. The interventions were: new guidelines concerning nutrition (early use of nasogastric tube), medical treatment of nausea, and cryo-therapy as a part of Melphalan conditioning (Oral ice in 10 min before, under and 10 min after). SOP´s were revised and all personnel completed educational sessions concerning interventions.

The personnel had the impression that interventions worked, and cryo-therapy played an important role. Still some patients lost more than 5% of weight.

In 2019 an audit was planned to measure how many patients had excessive weight loss, and if there was a connection to omission of cryo-therapy.

Methods: 53 patients were autologous transplanted at the department in 2019. 29 patients had received Melphalan conditioning and cryo-therapy. The audit included the latest 30% of the patients who received Melphalan conditioning.

The audit collected following data: Weight at the day before conditioning, weight at day +30, and if cryo-therapy was completed due to instructions in SOP.

Results: The audit, surprisingly, showed an insignificant improvement. 50% of the patients still had a weight loss of more than 5% at day +30. As we found that cryo-therapy intervention was 100% implemented, this was not due to omission of cryo-therapy.

The results of this audit show the importance of frequent follow up to interventions with important impact to quality of treatment to be able to adjust the interventions on an ongoing basis.

Based on the results the following possible conclusions exists: (1) Our interventions did not work, (2) We do not know if all of our interventions was implemented as intended, we only had focused on the one we found most important (cryo-therapy), and omission of some of the other planned interventions may explain the poor result. A new audit is needed to achieve more details of the implementation of interventions. After gaining more knowledge of reasons for continuing weight loss follow-up actions must be planned.

Conclusions: Audit is a method to get an overview and evaluate if goals have been achieved and if interventions are implemented. When audits are planned it seems more effective to build up a great data source. But this may result in no audit and no quality assessment because of lack of time for quality management. Instead a quick audit with few data, creates the possibilities of actually measure the goals and the interventions. The difficult part is to choose most suitable indicators.

Disclosure: Nothing to declare.

P733.

Quality of life assessment after pediatric hematopoietic stem cell transplantation

Aybuke Kacir[1], Murat Elli[1], Sema Anak[2], Yöntem Yaman[1], Gökhan Baysoy[1], Kürşat Özdilli[1], Hülya Bilgen[1], Volkan Hazar[1], Leyla Telhan[1], Sedat Öktem[1]

[1]Medipol University Hospital, Istanbul, Turkey, [2]Istanbul Medipol University, Istanbul, Turkey

Background: Hematopoietic stem cell transplantation (HSCT) is a curative therapeutic option for many

malignant and non-malignant diseases in childhood. Continued advances in HSCT techniques and expansion of indications for HSCT have resulted increasing number of population of childhood survivors of HSCT. These survivors are at risk of treatment related complications which leads to short and long term morbidity that affects quality of life. Therefore, evaluation of the health related quality of life (HRQoL) in children following HSCT has become an important research topic. The aim of the present study was to evaluate the HRQoL of pediatric patients undergoing HSCT in post-transplant period and the factors affecting it.

Methods: We used Pediatric Quality of Life Inventory (PedsQL) 4.0 to children and their caregivers. The 32 patients aged between 8–18 years, has received allogenic/autolog HSCT between July 2014 and December 2018 and has been follow up with disease-free in İstanbul Medipol University Pediatric Hemato-Oncology clinic.

Results: The 32 patients aged between 8-18 years, has received allogenic/autolog HSCT between July 2014 and December 2018 and has been follow up with disease-free in İstanbul Medipol University Pediatric Hemato-Oncology clinic. Patients were included in our study at least 3 months after HSCT. The 87 healthy children at same age group were included in our study also. The 65.6% of patients underwent HSCT for oncologic reasons and 34.4% of patients for non-oncologic reasons. When the quality of life scores obtained from child and parents reports were compared in the whole group, it was seen that the children who underwent HSCT, perceived the quality of life related to physical and psychosocial functionality worse than healthy peers. In the patient group, boys reported better quality of life related to social functioning than girls. The children who underwent HSCT for oncological reasons perceived quality of life related to social functioning better than non-oncological transplanted group.

Conclusions: These findings indicate that the physical and psychosocial functioning of the patients are significantly lower than the healthy population due to diagnosis, treatment and complications after HSCT process. The HRQoL of HSCT survivors should be assessed at regular intervals. Patients who are defined in risk group should be provided assistance to achieve better quality of life after transplantation.

Clinical Trial Registry: Istanbul Medipol University, Ethics Committee 21.12.2018 //10840098-604.01.01-E.53729

Disclosure: The authors of this paper have no conflicts of interest, including specific financial interests, relationships, and/or affiliations relevant to the subject matter or materials included.

P734.

Retrospective analysis of time to alternative donor identification and hematopoietic stem cells procurement in the absence of matched-sibling donors in a single center in Spain

Gracia Bravo[1], María Jesús Lorenzo[1], Emilio Ojeda[1], María Esther Martínez-Muñoz[1], Guiomar Bautista[1], Carlos de Miguel[1], Carlos Vilches[1], Rafael Cabrera[1], Rafael Duarte[1]

[1]*Hospital Universitario Puerta de Hierro de Majadahonda, Majadahonda, Spain*

Background: In the absence of a matched sibling, the search for unrelated donors (UD) requires a number of details and compliance with administrative requirements according to current legislation, including patient medical report, stem cell source, estimated time to transplant, degree of compatibility accepted, and patient's and first-degree relative's HLA typing. Time to identifying a suitable UD and then obtaining donor progenitor cells ready for infusion in the recipient is of paramount importance in the current paradigm to decide over other alternative donor options.

Methods: We retrospectively reviewed all patients without matched-sibling donors who received an allogeneic HSCT from an alternative donor in our center between January 2009 and October 2019. Our aim was to analyze the time-interval from the start of an alternative donor search to the reception of the graft in our center for transplant, including adult volunteer unrelated donors (UD), cord blood units (CBU), and related haploidentical donors (HD).

Results: A total of 136 consecutive allogeneic transplant recipients were analyzed (71 CBU, 42 UD and 23 HD), with a median age of 51 years, 58% men. Main indication for transplant was acute myeloid leukemia (41%, $n = 57$), followed by acute lymphoblastic leukemia (19%, $n = 26$), myelodysplastic syndrome (17%, $n = 23$) and others (22%, $n = 31$). Fifty-four out of these 136 patients were diagnosed in our hospital, the rest were referred to us from other centers for allogeneic transplantation. Source of hematopoietic progenitor cells were: Centro Regional de Transfusión Madrid ($n = 35$), USA ($n = 24$), Banco Sangre y Tejidos Barcelona ($n = 23$), Banco Transfusión Malaga ($n = 15$), German DKM ($n = 15$), Anthony Nolan Trust London ($n = 9$), and other registries ($n = 15$). Median time from start of search to transplant were significantly different for the different alternative donor options (ANOVA $p < 0.05$), with 69 days for CBU (range 16–343), 110 days for UD (range 31–605) and 27 days for HD (range 13–359).

Conclusions: Undoubtedly, haploidentical donors seem faster than any other option, including cord-blood, to identify and obtain allogeneic progenitor cells for transplantation in patients without a full-matched sibling. This may be a deciding factor for patients in whom avoiding delays and proceeding very fast to transplant is a priority. Other factors should also be taken in consideration to guide donor selection in clinical scenarios less urgent.

Disclosure: Nothing to declare.

P735.

Governance, risks and regulatory aspects of unlicensed lentiviral vector-modified autologous stem cell treatment

Beatriz Duran Jimenez[1], Jane Kinsella[1], Wendy Ogden[1], Simon Jones[1], Brian Bigger[2], Robert Wynn[1]

[1]Manchester University NHS Foundation Trust, Manchester, United Kingdom, [2]University of Manchester, Manchester, United Kingdom

Background: In January 2019, a 2 year old Mucopolysaccharidosis IIIA patient received the world's first e-vivo gene therapy treatment for this rare fatal progressive disease caused by a genetic mutation and deficiency in the SGSH gene. This was done ahead of trials or marketing authorization, as an unlicensed medicine in the Royal Manchester Children's Hospital.

This case study illustrates the governance and regulatory aspects considered prior using an unlicensed cellular gene therapy, in order to safeguard the patient, clinical staff and the organization.

Methods: A gap analysis was performed using the current regulation and guidelines to identify pertinent risks assessments, and to establish a local governance framework for first in human unlicensed ex-vivo gene therapy ahead of trials.

Regulation and guidelines:

- HTA regulations
- JACIE guidelines
- Special needs: Regulation 167 of the Human Medicines Regulations 2012
- Medicines Act 1968
- Advanced therapy medicinal products (ATMP) Regulation 1394
- Health and Safety Executive (HSE) Genetically Modified Organisms (Contained Use) Regulations 2014
- First in human and Good Manufacturing Practice (GMP) for ATMPs guidelines

Results:

(1) *Risk management plan included assessments and mitigation strategies for:*

- Pre-clinical evidence for gene-modified stem cell therapy
- Use of gene modified treatment:

  Insertional mutagenesis and genotoxicity
  Replication-competent virus exposure
  Germ-line transmission of vector sequences
  Phenotoxicity
  Vector shedding
  Treatment failure

- Treatment Procedure

  Risk of apheresis
  Haematopoietic Stem Cell Transplant
  Concomitant treatment: mobilization of cells, myeloablative conditioning
  Allergic/immunological response to cell processing excipients
  DMSO exposure
  Risk of Infection
  Supportive care
  Data management and adverse events reporting to the regulator

- Product Manufacturing/Quality

  Vendor Assessment
  Contract with the manufacturing site: Technical Agreement including Roles and Responsibilities.

- Waste management

(2) *Local Governance, the multidisciplinary committees involved were:*

- HTA-DI assessment
- Medicines Management Committee
- Local Ethics Committee and external peer review
- Medical Advisory Committee and Hospital Quality and Safety Board

(3) *The 2 year old MPSIIIA patient received the world's first e-vivo gene therapy treatment ahead of trial.*

Conclusions: Ex-vivo gene therapy is becoming available to treat rare diseases. The use of unlicensed ATMPs may be required ahead of trial, during trials and while using licensed product. This is common if the product doesn't reach the product specification (i.e. cell counts), for a special patient need or compassionate use. Gap analysis, risk identification and mitigation strategies are vital to stablish the right local governance to deliver unlicensed ex-vivo gene therapy to patients.

Vendor assessment, agreements, data management, follow up, handling, waste and staff training needs required careful consideration.

This case study identified the regulation, governance and risks to consider when treating a rare disease patient with an unlicensed ex-vivo gene therapy.

Local treatment approval was granted by establishing an unlicensed pathway in line with the local ATMP policy. This will inform the steps to be followed for future requests. Challenges were successfully overcome by involving multidisciplinary research teams.

Disclosure: Nothing to declare.

P736.

Unique supportive care algorithms for children undergoing haploidentical HSCT for benign hematological disorders

Revathi Raj[1], Ramya Uppuluri[1], Venkateswaran Vellaichamy[1], Indira Jayakumar[1], Jeevitha Sambath[1], Deepa Karmegam[1], Nikila Ravichandran[1], Kesavan Iyer[1]

[1]*Apollo Speciality Hospital, Chennai, India*

Background: Haploidentical haematopoietic stem cell transplantation (HSCT) with post-transplant cyclophosphamide offers a chance of cure for children with benign hematological disorders and the numbers are increasing each year. Standardized protocols are required in this group of children as there are unique complications seen at every stage of the treatment.

Methods: Children undergoing haploidentical HSCT were evaluated for cytokine release syndrome, cardiac toxicity due to cyclophosphamide, engraftment syndrome and haemophagocytic syndrome resulting in graft rejection in a systematic manner and specific interventions were made for each of these situations.

Results: A total of 170 haploidentical HSCT has been performed at our center with 127 for benign disorders and PTCY was used in 139 children. T replete grafts results in cytokine release syndrome (CRS) and the grading of CRS is documented in all children. Early introduction of low dose adrenaline infusion for grade 3 CRS helps prevent the progression of CRS and the need to use expensive medications such as Tociluzimab. Tociluzimab is used early in grade 4 CRS to prevent mortality. Steroids are avoided during the first 72 h after the graft has been infused. High dose cyclophophamide is an alkylating agent known to cause severe cardiac toxicity and its metabolites deplete antioxidants and augment the inflammatory damage to the cardiac myocytes. N-acetylcysteine (NAC) helps replenish the oxidant pool in the body and provides cardio protective and overall superior outcomes. Children who received 50 mg/kg of cyclophosphamide on day 3 and day 4 after infusion of stem cells (dose reduced to 25 mg/kg in Fanconi anaemia) had mesna infusion started with the first dose of cyclophosphamide as a continuous infusion till 24 h after the second cyclophosphamide dose. All children had a cardiac ECHO performed by a pediatric cardiologist before conditioning and on day 5 after completion of Mesna. NAC at a dose of 10 mg/kg/h from the start of cyclophosphamide reduced the cardiac death from 10% to 0% and graft rejection from 13.5% to 3.6% and improved overall survival from 46% to 67.5%. PTCY is potentially nephrotoxic and intravenous voriconazole which could increase the drug level was consciously avoided during PTCY. All children had serial measurements of serum ferritin as a surrogate marker of CRS two times a week from the day of infusion until engraftment. A serum ferritin of over 30,000–100 times upper limit of normal at our center during the time of engraftment predicts the onset of haemophagocytosis. Children who had received methylprednisolone at 1–2 mg/kg/day did not subsequently reject their graft compared to those that did not receive steroids p less than 0.05.

Conclusions: Unique interventions in subsets of children undergoing HSCT that address the issues in that cohort help us improve survival outcomes and avoid morbidity. Low cost interventions such as estimation of serum ferritin, early use of adrenaline for CRS, NAC infusion and directed steroid therapy during engraftment has resulted in providing a cure for over 75% of these children.

Disclosure: Nil.

P737.

Quality of life in parents of Turkish and Syrian pediatric bone marrow transplant and oncology patients

Gülay Sezgin[1], Asiye Yaylacı[1], İlker Ünal[1], İbrahim Bayram[1]

[1]*Çukurova University, Adana, Turkey*

Background: A migrant is any person who is moving or has moved across an international border or within a State away from his/her habitual place of residence. Migration happens regardless of (1) the person's legal status; (2)

whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is. Currently, Turkey hosts over 3.6 million registered Syrian refugees. Interest in measuring the Health Related Quality of Life (HRQoL) of the immigrants increased in recent years. Our purpose was to compare the HRQoL of parents of Syrian children welcomed in Adana to parents of Turkish children getting treatment in our pediatric bone marrow transplant and oncology unit by using the SF-36 questionnaire.

Methods: We conducted a study using the Short-Form Questionnaire (SF-36 Arabic and Turkish forms) to evaluate and compare the perception of the health of the Syrian and Turkish parents. SF 36 a generic questionnaire on quality of life, made up of 36 items and 8 scales Physical Activity (PA); Physical Role (PR); Physical Pain (PP); General Health (GH); Vitality (VT); Social Activities (SA); Emotional Role (ER); Mental Health (MH). We collected information from the SF-36, but also information about age and sex. Questionnaires were administered directly to the parents.

Results: We collected 100 questionnaires, 50 from each group of parents. There were 70 pediatric oncology and 30 pediatric bone marrow transplant patients. 55 of the parents were fathers and 45 parents were mothers in the whole group. The mean age of the whole group was 37 ± 8,19. In the Turkish group there were 28 mothers and 22 fathers and the mean age of the group was 38,6 ± 7,53. 13 children had bone marrow transplantation and 37 children were oncology patients. Syrian group consisted of 33 fathers and 17 mothers. The mean age was 35,6 ± 8,6. 33 children were oncology patients and 17 children had bone marrow transplantation. Turkish parents reported better results in physical functioning, emotional well-being, physical pain and general health. The other parameters did not show significant differences.

Conclusions: This study evaluated the health-related quality of life (SF-36) in the Turkish and Syrian parents whose children are followed in the bone marrow transplant and oncology clinic. Our study showed that Turkish parents were better in four items namely general health, pain, emotional and physical well-being. Although Syrian refugees are welcomed in Turkey, their well-being might be affected by state of war in their homeland and living in another country.

Disclosure: No conflict of interest.

P738.

Effective CAR-T cell delivery: a multidisciplinary approach at MFT

Wendy Ogden[1], Beatrix Duran[2]

[1]Manchester Royal Infirmary University NHS Foundation Trust, Manchester, United Kingdom, [2]Manchester University NHS Foundation Trust, Manchester, United Kingdom

Background: The first gene therapy medicines, chimeric antigen receptor T-cells (CAR-T) have been licensed in the UK and are NICE approved for the NHS.

Manchester University NHS Foundation Trust (MFT) was selected as a first wave Advanced Therapy Treatment Centre (ATTC) CAR-T provider for this treatment. Most UK hospital pharmacy departments lack the infrastructure to handle advanced therapy medicinal products (ATMPs) from a governance and operational point of view[1].

Pharmacy and the Stem Cell Laboratory (SCL) have worked collaboratively to achieve the successful implementation of NHSE CAR-T cell treatment at MFT. Horizon scanning predicts exponential growth in this area[2], demanding increased resources and specialization in ATMPs from hospital pharmacies and Stem Cell Laboratories across the UK.

Methods: Governance, quality and gap analyses were performed using current ATMP legislation[3]/national guidance.

Audits were performed on trust governance systems and processes, including clinical settings and the stem cell laboratory prior to JACIE accreditation.

Pharmaceutical manufacturers performed audits on the SCL and delivered product specific training.

Collaboration: Multidisciplinary working groups established, utilizing the expertise from multidisciplinary teams to enable rapid implementation.

o Pharmacy and the SCL have also collaborated with national forums to ensure shared learning via early engagement from other NHSE approved centers. Relationships have been established internally and nationally, which makes progress more streamlined.

o A task and finish group—including clinical/medicines management pharmacists and clinical trials/SCL staff.

Results: · Creation and implementation of an ATMP policy.

- Oversight of the SCL was implemented for licensed products as per current clinical trial processes:
  Pharmacy performed an audit on SCL systems and processes for this purpose, and an audit plan was drafted.
- An Advance Therapy Assurance Committee was approved to feedback to the Medicines Optimization Board.
- Strategic planning priorities were established.

Conclusions: Early engagement and open regular communication between teams and national groups was vital due to the speed required for service transformation in this

introduction of ATMP's. Both Pharmacy & Stem Cell worked collaboratively and developed their knowledge set each of whom is aware of their teams' responsibilities and also those of other disciplines. This standardized approach makes MFT an attractive proposition for future standard of care ATMP treatment and innovative ATIMP trial possibilities giving clinicians another treatment tool in patient care.

Careful assessment is needed to anticipate and identify key areas of focus to ensure compliance and patient safety using ATMPs. Streamlined and adaptable procedures are needed; applicable to all potential ATMP trials. So far, the system has been able to cope to an extent with growing demand, however, resources are reaching capacity, therefore expansion and future proofing are required which should not be underestimated.

Horizon scanning predicts likely dates of availability and impact of ATMP's; therefore, in co-ordination with the trust medicines optimization board, the advanced therapy assurance group will be critical in addressing challenges identified. Such challenges include: communication/engagement, equipment, data management and capacity planning. NHS hospitals will be required to incorporate ATMPs into routine practice. Our work may serve as a model to other NHS Trusts.

Clinical Trial Registry: n/a.

Disclosure: Nothing to declare.

P739.

Start-up of an adherence reception for allogenic stem cell transplanted patients at The Hematological Department Linköping, Sweden

Malene Bokinge[1]

[1]*Region Östergötland, Linköping, Sweden*

Background: The number of hematopoietic stem cell transplantations (HSCT) has expanded in the last decades and continues to increase still. To ensure safe and effective care in a vulnerable and polymedicated high-risk population, an experienced and fully dedicated multidisciplinary team should undertake the treatment (1). Pharmacists have established their role in many European centres. This is in part a resultant of the Joint Accreditation Committee-ISCT & EBMT (JACIE) standards, defining the pharmacist as a key member of the HSCT team. (2)

Patients are today self-determining agents in healthcare rather than just passive recipients of treatment. Noens et al. and Marine et al show that despite the long-term survival benefit that is offered by different therapies many patients are non-adherent to their medication. (3, 4)

There are many adherence programs in Europe but most of them are not formally integrated into a healthcare system. (5)

At the university hospital in Linköping we do on average 20–25 allogenic stem cell transplantations every year. (6)

Methods: The patient's way through the allogenic stem cell transplantation:

Inpatient care

(1) The patient is coming to the hematological department to undergo transplantation
(2) Conditioning treatment
(3) Stem cell infusion
(4) Discharge from the hospital - first contact with the HSCT pharmacist

Outpatient care

- Regularly visits for follow-up at the HSCT ward. The patient meets the HSCT team including the pharmacist.

  Before the patient leaves the hospital, the pharmacist at the hematological department will ensure the patient will get all medications from the pharmacy. This is the patient's first contact with the HSCT pharmacist (step 4). The pharmacist will give the patient information about all their new medications. The patient will handle, from now on, all the medications by himself/herself at home. The patient receives a brochure containing information about their new drug treatment, as a result of the transplantation, written by the HSCT team.

  In a couple of days, the pharmacist and the patient will meet again at the hematological reception. The content of the conversation is then about how it works with the medications at the patient´s home. The pharmacist uses the method of motivational interviewing. It is very important the patient will take all medications and do it in the proper way. The number of times the patient and the pharmacist meet varies depending on the patient needs.

  Results: Continuing dialog and follow-up counseling adjusted to the needs of the individual patient are needed to better support patients in managing their medication.

  Comments from patients in the adherence reception so far:
- they feel more secure about their treatment
- they experience an increased knowledge about their medications
- they feel even more motivated to take their medications in the proper way

Conclusions: A working model for an adherence reception is now established in the HSCT team. Next step will be to scientifically evaluate our work in the team.

Disclosure: Nothing to declare.

P740.

Enumeration of residual red blood cells in mis-matched allogeneic PBSC collections—traditional hematology analyzer vs flow cytometry

James Pittson[1]

[1]*Plymouth Hospitals NHS Trust, Plymouth, United Kingdom*

Background: The enumeration of residual red blood cells (rRBCs) in mis-matched allogeneic PBSC collections is required for clinical management of potential transfusion reactions post-transplant. Currently, rRBC analysis is performed (in our laboratory) by a traditional hematology analyzer (Abbott CELL-DYN Sapphire). Due to the removal of this analyzer from routine use and the inability of our replacement hematology analyzer (Abbott AlinityHQ) to enumerate rRBCs in PBSC samples, an alternative method was required for future provision of this analysis. Culibrk *et al*. (2012) also state that there is no automated, accurate assay for the enumeration of rRBCs in non-RBC components for transfusion despite the potential risk with mismatched allo-immunization, which possibly provides a further use-case for an alternative method.

Methods: A new single tube (Trucount) flow cytometric method was therefore developed as a possible solution. Post apheresis peripheral blood stem cells were stained with CD235a FITC/CD45 APC prior to acquisition and enumeration on a FACSLyric Flow Cytometer. Antibody titration experiments were performed to ensure adequate labeling of RBCs whilst keeping red cell aggregates to a minimum, therefore maximizing accuracy.

'Normal' peripheral blood samples ($n = 22$) with known 'authorized' RBC counts (analyzed using the Abbott AlinityHQ) were diluted to levels that were comparable to those seen in our PBSC collections. These known RBC levels were then analyzed using the CELL-DYN Sapphire and the FACSLyric. In addition neat PBSC sub-samples ($n = 11$) were analyzed using these latter two methods.

Results: In the case of diluted PBs, results from the Cell-DYN Sapphire were very significantly correlated with the Alinity HQ ($p \le 0.0001/r = 0.99$), as were the results from the FACSLyric (Trucount) method ($p \le 0.0001/r = 0.99$). This demonstrates the FACSLyric's ability to reliably measure RBCs at the low levels (0.012–0.101 × 10^12/L) relevant to post-apheresis samples. However, for PBSC red cell analysis, contrasting results were observed: the FACSLyric flow cytometric rRBC levels ranged from 0.028–0.13 × 10^12/L (cv-64.3%) demonstrating the expected spread of data across the PBSC samples tested. However, using the CELL-DYN Sapphire, an approx. 10X increase in rRBC levels were seen, with very minimal spread in data (0.247–0.555 × 10^12/L/cv-24.5%). This difference was confirmed statistically with paired T test analysis ($p \le 0.0001$).

In an effort to understand this difference in results for PBSC sample analysis, a color chart was created by serial dilutions of a 'normal' PB sample of known RBC count, to visually represent the intensity of color seen at varying RBC levels. The comparison of PBSC samples to the chart 'by eye' was remarkably well correlated with the FACSLyric analysis. However visual correlation was poor with the RBC levels enumerated by the Sapphire.

Conclusions: The above suggests that, for PBSCs, the Sapphire is unable to measure rRBCs lower than 0.25 × 10^12/L. As this is not the case with diluted 'normal' PBs samples, it is likely this discrepancy may be due to the very high WBC counts characteristic of this sample type,

From this data it is suggestive that flow cytometric analysis out-performs a traditional hematology analyzer when enumerating the low levels of rRBCs found in post-apheresis PBSC collections.

Disclosure: No conflict of interest.