IN THE SPOTLIGHT: Pain and Suffering: The Catholic Perspective

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My friend, Vincent, has asked me to expound a bit on Pain and Suffering. While having witnessed much pain and suffering, as a pediatric transplant and heart failure physician, my life has been blessed with little, or perhaps this is only my perception. How my perception has come to be shaped is a matter of perspective, and I can write freely from my perspective. But I’d like to explore further and invite you to explore with me. For the next few months I hope to change the position of my gnomon, and recast the viewpoint of pain and suffering from other religious and a-religious perspectives. Irrespective of the viewpoint, we can likely agree on a definition: pain is an objective experience; suffering describes an element of human reaction.

My view is rooted in Catholicism. The Catholic version of pain and suffering is linked to the crucifixion (“Summum Dolores” or ultimate pain) and finally earning that perfect sacrifice of the crucifixion in order to experience the resurrection and salvation. The learned scholars and dilettantes within the church write about the experience of pain and suffering as a means to eventually acquiring hope, improving the depth of faith, and growing closer to God. It’s a personal journey toward a greater union with the divine, an opportunity for spiritual growth. Healing, and remediation of pain, can be possible through prayer, and if not granted, the absence must be accepted with faith equal to rejoicing in its remedy, as God’s will.

Though the Catholic doctrine is rooted in my childhood I find this perspective dystonic. It’s hard to swallow. Why do my patients have to suffer? What makes a perfectly normal child suddenly experience cardiovascular collapse with an EF of <20%, needing resuscitation and MCS? What are his parents thinking when they assign their trust to me, to care for their child? Whose pain and suffering is greater: the child’s or the parents’?

I daily reframe pain and suffering as an opportunity to provide others with relief, respite, succor. Is it personal, personally spiritual or a daily wrestle with a demon (or angel)? Why do what I do, why do any of us do what we do, over and over again, providing temporary succor? Death always wins. I’m left with more questions than answers.

St. John of the Cross, the Spanish mystic, gifted us with his breath-holding and perspective-changing drawing of Christ on the cross, viewed from above, so contrary to the typical portrayal.

His writings of the Ascent of Mount Carmel provide direction that the circuitous way up to the “Iuge Convivium,” the continual feast of the soul is surrounded by charity, science, enjoyments, security, glory, knowledge, honor, but the most direct path is “nada.” Nothing. Nothing that we as humans
can possibly relate to with ease. Nothing known to us. Nothing familiar. Nothing easy. We must carry nothing. We must divest from everything, to have nothing, in order to be open to the divine.

We get this innately as humans, I think. Some sparked chemical connection back in the limbic system tells us that enjoyment and other earthly metrics of success are ephemeral. There’s more to life than just, well, life. This realization isn’t easy. It’s pain and suffering of the spiritual order. But, once we achieve this divestment of earthly delights (physical, mental, philosophical, spiritual), we can achieve the ultimate peak.

I’m not sure how this keeps me motivated every day, or even if it does. Many days my motivation comes from a much simpler place: to do good work, care for my patients as best I can, pay my bills, and care for my family. My personal experiences with pain, suffering and loss are pallid in comparison to the experiences of the patients and families I treat. I don’t know that my own journey down the Via Dolorosa (the Way of Suffering) is made less dolorous by the knowledge that the path is leading me to deeper faith or deeper union with God. Once again, more questions than answers, though possibly another mile marker on the road to enlightened thought? Writers, much more worthy of the title than I, have expounded for volumes on these questions.

Next month we’ll explore another view of pain and suffering.

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ISHLT 2016 Pharmacy and Pharmacology Council Review: PHARMing for Answers?

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This year’s ISHLT Annual Meeting provided a tremendous amount of education content, not only for pharmacists, but for all individuals involved in advancing the care of our patient populations. Among the many sessions, I would like to focus on two presymposium Wednesday sessions – Anticoagulation in MCS: Can We Do Better? and Lifecycle Journey of the Hepatitis C Heart Failure Patient. Both of these sessions featured a multidisciplinary approach to managing these complicated patient populations.

In the MCS session, the entire spectrum from thrombosis to bleeding in MCS was covered by Dr. Ulrich Jorde. Dr. Doug Jennings then discussed issues surrounding inherited thrombophilia in MCS patients and the potential impact on the use of antithrombotic therapy. Dr. Anna Meyer presented challenges in monitoring INRs and options of improving monitoring modalities with respect to vitamin K antagonists. Dr. Chris Hayward discussed the advantages and disadvantages of monitoring unfractionated heparin with aPTT or Xa testing. Dr. Robert Page reviewed available monitoring technology for antiplatelet therapy in MCS. Finally, Dr. Nir Uriel highlighted nuances of gastrointestinal bleeding, acquired von Willebrand disease, and novel treatment approaches to this common adverse consequence of MCS therapy.

Clinical Pearls from the Anticoagulation in MCS Session:
- Utilize log files to assist in understanding HVAD thrombosis
- Inherited thrombophilia is rare in MCS; however, when present it may not necessitate increasing INR target above usual for MCS
- Concordance between monitoring modalities for heparin in MCS is low; Xa monitoring may provide more reliable heparin dosing
- Many platelet monitoring modalities exist, but none reigns superior in MCS
- There are other agents besides octreotide in the management of GI bleeding in MCS, including thalidomide, danazol, doxycycline. VEGF may also play an important role.

The Lifecycle Journey symposiums have typically been the prominent PHARM council presentation at the ISHLT Annual meeting. This year’s symposium covered issues surrounding the newer therapies that have been dubbed ‘game changers’ in the management of hepatitis C. The symposium was moderated by Dr. Jerrica Shuster and Dr. Andreas Zuckerman; Dr. Adam Cochrane reviewed treatment options for Hepatitis C and guideline statements regarding Hepatitis C treatment and immunosuppression. Dr. Paolo Grossi discussed the interplay between Hepatitis C, CMV and cardiac transplant outcomes. Dr. Michael Shullo then reviewed the importance of how various immunosuppressants can impact Hepatitis C replication and resultant clinical outcomes. Dr. Donna
Mancini then reviewed data surrounding malignancy in cardiac transplant. Dr. Deborah Meyers rounded out the symposium with a passionate discussion regarding palliative cares issues in the heart failure and heart transplant patient population.

Clinical Pearls from the Lifecycle Journey of the Hepatitis C Patient Session:
- Patients with sustained viral response to novel Hepatitis C therapy, monitoring for HCV viral replication may not be needed once immunosuppression is initiated.
- Drug interactions are prevalent through both cytochrome and p-glycoprotein pathways
- HCV and CMV co-infection may place patients at greater risk for coronary artery vasculopathy
- Bolus doses of corticosteroids could negative impact outcomes with respect to HCV more than other immunosuppressive agents
- Employ risk factor modification and enhanced surveillance for malignancy, especially prostate or breast cancer
- Introduction of palliative care early in the disease process can assist in symptom management

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Pharmacy & Pharmacology Council: With Great Power Comes Great Responsibility

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It is amazing to me to think about how far we have come as a council since “7 people met in a room” in San Diego 5 years ago to discuss the formation of a Pharmacy and Pharmacology Council within ISHLT. It is certainly ironic to me as we begin planning once again for our next meeting in San Diego on how we have evolved and how I hope we will continue to move forward “as a collective” with our contributions to the intellectual content and practice ideas and help the Society advance the care of this very complex patient population.

Over the past year we have continued to make progress in making our presence felt within the Society and in advancing our council initiatives. This was clearly in evidence with our presence at the 36th Annual Meeting in Washington, DC. Our council submitted a total of 10 symposia to the Program Committee for consideration for placement on the meeting agenda. In addition, there were 8 other submissions by other councils that had Pharmacy and Pharmacology members included. Through the Program Committee process, we were able to secure and sponsor 2 sessions. Our pre-meeting symposium session entitled “Lifecycle Journey of Hepatitis C Heart Failure Patient in 2016” marked the return of this symposium format for our council after a one year absence. Our sunrise session entitled “Precision Medicine in Transplantation: Drug Levels and Beyond” focusing on potential future innovative monitoring strategies received high acclaim by those in attendance. At this meeting we also had council members as speakers and/or chairs in 8 sessions sponsored by other councils. With the quality of abstracts submitted through our council, we were also able to sponsor a full oral abstract session, a mini-oral session co-sponsored with MCS, and a poster session. In total, 27 abstracts were accepted through our council for presentation. Of equal importance to many was our ability this year to offer 13 hours of ACPE credit as a value enhancement for our members. This level of representation speaks volumes about how far we have come in this venue as a council in such a short time.

We also continue to make great strides with regards to other council activities within the Society. Efforts lead by Mike Shullo resulted in the revision, submission, and approval of our core competencies document by the ISHLT Board this past September and are now are available on the ISHLT website. As a follow-up to this work, Mike, along with Robert Page will be leading an effort to further call attention to standards pertaining to the practice of Thoracic Transplant Pharmacy highlighting our core competencies document as a reflection of this. Another council project lead by Rebecca Florez and Patty Uber looking at the development of a standardized/universal set of patient education materials using various types of media/technology as well as tools to verify learning and retention continues to make progress. Work to this point has resulted in the creation of a survey to identify specific needs will be circulated to the broad membership soon. Results from this survey will be used to support a “proof of concept” and identify next steps going forward. Our involvement in
work with Standards & Guidelines committee continues to intensify as our expertise in pharmacotherapy continues to be sought. Our members have participated in multiple guideline projects (ex: lung AMR, antifungal guidelines, MCS infections, primary graft dysfunction, and consensus on perioperative management of lung transplants) many of which have now made it to publication. Future projects here include a major effort on our part as we as a council lead by Chris Ensor, Patty Uber, and Robert Page will be taking the lead role in the effort to update the guideline on generic drugs in thoracic transplantation.

Education continues to be a central role in our council activities. Activity is already underway in planning for next year’s meeting in San Diego with our members working with Kyle Dawson and his education workforce on symposia ideas for submission to the Program Committee by the June 2nd deadline. In addition, we are making headway on our goal to be involved with the planning and participation in Academy efforts within the Society. We emphatically endorsed the ID councils Academy: Core Competencies Course in Infectious Diseases and Cardiothoracic Transplantation and Mechanical Support which was approved and will be conducted at the 2017 meeting in San Diego. Members of our council are serving as content advisors to review session titles and presentation topics at this time. We are also now involved in the development of a proposal for a donor procurement academy being put forth by the Heart Failure/Transplant and Pulmonary Transplant Council. Submission of this proposal is due by the end of May 2016 for consideration and potential presentation in 2018 or 2019 if accepted. Potential for involvement in future Academy proposals such as pediatric heart failure academy are also being entertained. Much of our abilities to compete in this arena have to do with the strength and diversity of our council membership which allows us to have representation and interests in virtually all areas of the Society.

Our involvement with the LINKS continues to be a successful venture for us as a council. We were the primary contributors to the September 2015 issue with 3 articles published. In addition, our council was the recipient of 3 LINKS awards including Writer of the Year Winner (Kyle Dawson) and 2 Runner-up awards (Adam Cochrane, Christa Kirk). This continues to be a format where we excel (previous winners: Chris Ensor 2014, Runner-up: Amanda Ingemi 2014) and where our contributions are highly sought after. Our next focus issue will be in September 2016 with a submission deadline in August.

The Strategic Planning initiative has been a major objective of the Society over the last year and in the years to come, one in which we will continue to play an integral part. Council participation on our part included participation by the council leadership in various conference calls with Society leaders, survey of council members on strategic objectives, and a council report to the Strategic Planning Committee on perceived strengths, weaknesses, opportunities, and threats to our council going forward. Our report, as well as reports from all other councils, lead to the development of the present strategic going forward. The 4 major areas that make up the strategic framework include: 1) enhance membership value, 2) improve science and drive innovation, 3) engage our community worldwide, 4) organizational vitality. In our report to the Board we, as council leaders, were asked to evaluate our needs going forward. Focus issues for us included: 1) continued support for ACPE at future meetings, 2) engagement of newer and younger members to support the growing initiatives of our council, 3) continued support of multidisciplinary efforts for participation in Society initiatives and
competition for awards, and continued education and support to develop leaders within the councils and define their roles. With this in mind we will: 1) evaluate the CE process including the data on how much was claimed and re-apply to the Board for continued support for ACPE for future meetings as a value enhancement to our members, 2) we will continue to work with other councils on symposia ideas to continue to increase our presence in this multidisciplinary forum and allow for increased intellectual contributions from our members. In addition, we will continue to search out and become involved in other educational (ex: participation in on going Masters Academy initiatives) and guideline projects where our expertise can be effectively utilized and employed, 3) continue to educate our newer and younger members about what opportunities exist for their involvement that is commensal with their level of comfort (for example members looking for more limited exposure or junior members looking to gain initial experience, opportunities that exist include involvement in workforce groups or project workgroups), 4) work with Society leadership on clearly defining leadership roles and accountability.

It continues to be my privilege to serve as chair of our council. Our growth as a council has been dramatic over the last 5 years. We truly have arrived as a mainstream council and are now interwoven into the Society fabric. The Society realizes this and much of its strategic planning has centered around providing value to its all of its members, engaging multiple disciplines, and making them part of its framework. However, as the Society invests in us, we must remember that to stay relevant at this level, investment is a two way street. As has been quoted by many, we must remember that “with great power comes great responsibility.” The good news is that our opportunities for involvement in projects and initiatives continue to increase as our true capabilities continue to be realized. The bad news is that as this is occurring, expectations for our council are increasing and our members must continue to rise to meet these challenges. Today we have a tendency to focus a lot on our value as an individual and what our institutions can do for us. For us to continue to succeed as a council, we must be willing to give of ourselves a little as well. So as we move forward, I ask you to also consider my adaption of President Kennedy’s famous inaugural address which is “ask not what your council can do for you, ask what you can do for your council”.

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After ISHLT 2016: A few random thoughts...

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First, I’d like to personally thank Andy Fisher [who, by the way, seems to be a genuinely cool guy] and all those responsible for planning and executing ISHLT’s 2016 annual meeting. I can hardly imagine how much time and effort was spent making it happen. I look forward to this meeting each year for the opportunity to learn from the research generated by other institutions, listen to the experts debate today’s current clinical controversies, and catch-up with colleagues from other parts of the country/world—this year’s meeting did not disappoint.

A few random thoughts...

My favorite talk of the meeting was probably Dr. Laurie Snyder’s discussion of the immune response to CMV in transplant recipients and the idea that the duration of prophylaxis against CMV could be personalized by analyzing T-cells to identify patients less likely to develop CMV disease post-prophylaxis. Alternatively, while I couldn’t catch all the relevant sessions, I was hoping the evidence would be a bit more definitive regarding the whole “treatment of DSAs after lung transplant” thing...

For those not attending any of the mini-oral abstract sessions [possibly due to their placement in the highly-coveted 6pm-7pm time slot?], I recommend trying to catch at least one block next year. These sessions are a nice change of pace (literally) because the limit of ~4 minutes and ~4 slides forces the presenter to omit any information that isn’t essential. These are also fun because one can catch 12 different talks in an hour and the presentations are often delivered by trainees and “junior” authors. [As an aside, when presenting in a mini-oral session, don’t be “that guy” that brings 20 slides and thinks the time limits don’t really apply to everyone—a good moderator will cut you off with no regard for human life].

Now is the time for symposium submissions for the 2017 meeting! If you happen to feel that XYZ session at the D.C. meeting was basically the same-old XYZ session presented at the last few meetings, now is your chance to try for something different next year. For those feeling stuck or uninspired, sometimes flipping through the JHLT Abstract Supplement Issue can help identify areas where the science is still lacking, topics that should be advanced, or ideas that might benefit from a different slant.

Shameless plug for the Pharmacy / Pharmacology Council... it was fantastic to see so many colleagues in D.C. this year (essentially standing room only at our council meeting). Our group is still trying to identify and recruit both North-American and especially International pharmacy practitioners working in the areas of cardiothoracic transplant, PAH, MCS, etc... If anyone reading this is currently working with a non-member pharmacist, please inform that our group is very welcoming...
Lastly, in case you missed the Easter egg at the bottom of the ISHLT communication regarding Last Minute Info to Prep for the 2016 Meeting..., please know that ISHLT Staff would greatly appreciate gifts of CHOCOLATE and TEQUILA...

Again, thank you to all those who were responsible for the DC meeting... I’m already looking forward to seeing everyone again next year.

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A Transplant Fellow’s Experience at the 2016 International Heart & Lung Transplantation Annual Meeting

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I was fortunate to attend the 2016 International Heart & Lung Transplantation (ISHLT) annual meeting in Washington, DC on April 26-30. The ISHLT is a multidisciplinary, professional organization dedicated to improving the care of patients with advanced heart or lung disease through transplantation, mechanical support and innovative therapies via research, education and advocacy. It was established in 1981 at a small gathering of cardiologists and cardiac surgeons. Today it consists of 3000 members from over 45 countries, representing over 15 different professional disciplines.

ISHLT was my very first transplant conference of such magnitude. I did not know what to expect and nothing could have prepared me for what I witnessed. Many of my esteemed colleagues were attending as well and I was honored to be a part of the group representing Toronto Lung Transplant Program. It was the first time I was exposed to such breadth of information on research and clinical work done in the field of lung transplantation. Additionally, there were dozens of presentations done by my colleagues covering state of the art research and clinical practice. In many sessions that I attended, there were multiple mentions of leaders from our lung transplant program (Director Dr. Shaf Keshavjee, program Medical Director Dr. Lianne Singer and others) who have made valuable contributions in the field and whom fellows like myself are very lucky to have as mentors and supervisors. I was so excited and proud to see that a significant amount of data obtained over the past few years in surgical techniques, lung preservation, intensive care and health-related quality of life assessment in advanced lung disease and lung transplantation came from my program. I felt humbled and proud to join a world renowned team of experts that are considered to be leaders in the field of lung transplantation. And I realize, that many other fellows from other centers felt similarly.

The conference also gave me a chance to network with experts and also trainees from around the world. Many fellows were conducting sessions representing their own countries and being an international fellow from Israel myself, I felt thrilled and inspired by that. Thanks to the conference, I have been able to gain plenty of cutting edge information and knowledge delivered by experts and I also learned to appreciate and never to take for granted our amazing and dedicated team.

The session that I enjoyed the most was the one presenting our group’s results regarding lungs from donors post circulatory arrest that were put on Ex-vivo lung perfusion and then transplanted. In contrast to all expectations, such lungs proved to be at least as good as lung taken from brain dead donors. The most amazing discovery was that we are actually leading in this technology that proves to increase lung donation through utilization of extended criteria donation that in the past would have otherwise been declined.
Overall, this conference was undoubtedly a unique learning opportunity that broadened my horizons and also made me feel really inspired and motivated. I had a chance to get acquainted with fields in lung transplantation that I had not been exposed to before and I also gained enormous appreciation for what we do. This experience also helped me get clearer on my future focus and goals incorporating clinical aspects in the care of lung transplant patients as well as lab research. There are not enough words to express how incredibly lucky I consider myself to have been allowed the opportunity to be a part of the ISHLT and my hope is that I can give back by raising the standards and contributing more in the future.

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Continued Enthusiasm of the MCS: Musings from the 2016 Annual ISHLT Meeting

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As usual, the success of MCS is multifactorial. First, the combination of Core Competencies in Mechanical Circulatory Support before and Master Classes after the official meeting led to the sustained presence of many participants. Even the last MCS session of the meeting in the final hours of the last day was jam-packed and could not be closed on time because of very fruitful and lively discussions. This point also contribute to the overall success. All MCS sessions, including the pre-meeting symposia, sunrise symposia and abstract presentations were fine-tuned to one important topic which led to sometimes very deep, sometimes emotional, but always scientific discussions.

Further, the two forms of the Master Class Academy were more interactive and therefore judged by many participants, especially young clinicians, as more effective which fills educational gaps with more “long-lasting” knowledge. There were a wide range of highly interesting and informative abstracts and oral presentations for those in attendance. Many of them presented new ideas or different perspectives of old problems. Surprisingly, during a plenary session, the Berlin team presented the worldwide first and successful implantation of the HeartMate 3 as an RVAD. This experience heralds a new era in the so far short history of HeartMate 3.

The poster presentations were increased in number, but not always in the quality of data or presentation. However, the lively discussions with poster disputants contributed to the education of the young scientists and, I am quite sure their improved their skills will add to their valuable experience gained during the meeting. I hope for them that the 2016 experience will improve the quality of presentations that can reach oral presentation level for San Diego in 2017.

In conclusion, the MCS part of the meeting was a great success for the MCS program directors - congratulations!

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Basic Science and Immunology at the ISHLT 2016 Annual Meeting

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The International Society for Heart and Lung Transplantation meeting is held annually to provide a forum for the most recent advances in the field of heart and lung transplantation. There continues to be a strong basic research component. Research on humoral and cellular factors that influence the interplay between the allograft and the host immune cells, and immunological factors that antagonize infectious complications, had great presence at the conference.

In the pre-meeting symposium 12, new information about polyfunctional immune responses was presented. Borrowing information from other viral diseases, effective vaccination is associated with a polyfunctional response; HIV elite controllers have a polyfunctional response; control of hepatitis C, tuberculosis and other infections have been linked to a polyfunctional response. Laurie Snyder wondered whether we can apply this to transplant. She proposed for us to consider CD4 and CD8 cells, use of CMV pp65 and CMV IE-1 peptide pools along with multicellular cytokines and markers including: IFN-gamma, TNF-alpha, IL-2, CD107a, lymphocyte subset analysis and a bioinformatic approach to determine a polyfunctional signature. Among receptor CMV+ lung recipients, 3 lymphocyte subsets were identified as useful biomarkers including CD8+/CD107a+/IFN-gamma+/IL2-/TNF-alpha- T-cells.

D Chatterjee presented data on polyreactive innate like B cells among graft infiltrating B cells in human CAV independent of donor specific antibodies (Communication 75).

In the area of genomics new advances were presented in pre-meeting symposium 14 and in distinct communications. Gene expression profiling (GEP) as a biomarker of immune system activity in cardiac transplantation is being evaluated as a predictor of complications related to over immune suppression including CMV infection, new malignancy and infection requiring hospitalization. GEP scores were found to be suppressed in patients prior to a CMV infection (Communication 21 by Shah et al). Donor derived cell free DNA is a new biomarker of allograft rejection. The lack of correlation between GEP scores and this new biomarker in heart recipients suggests that donor derived cell free DNA could offer complementary information to gene expression profiling (Communication 66 by Kobashigawa et al).

The immunology of aging was reviewed in the pre-meeting symposium 17. Evidence that CMV plays a role in driving T cell immunosenescence in lung recipients was reviewed by Daniel Goldstein.

In communication 109 (Hodge et al), increased cytotoxic pro-inflammatory CD8+ T-cells in the distal airways was associated with worse clinical outcomes in BOS patients.
Immunological anti polysaccharide antibody responses are supposed to be T-cell independent (i.e. do not require T cell help for B cell responses). In presentation number 227, Adam et al presented interesting unpublished data on an experimental model, suggesting that this is not always true. Anti-A antibody production required T-cell help.

In communication 229, by Lin et al we learned that NK cells require secretion of IFN-gamma to mediate CAV in an experimental model.

The potential role of circulating exosomes expressing cardiac self-antigens in the pathogenesis of CAV was evaluated by Sharma et al in communication 247.

Luciano Potena presented data of a new interesting functional assay to evaluate lymphocyte responses (T and NK) as a biomarker of infection in heart transplantation (communication 266). IL12 dependence of CMV specific CD4+ T cell responses during primary infection was assessed by Popescu et al in communication 351.

Halloran et al suggested that microarray analysis in endobronchial biopsies can reliably quantify changes characteristic of rejection in lung transplantation (Communication 406).

In the Plenary Session - Pushing New Scientific Frontiers, the potential influence of microbiota in immunology and transplantation was reviewed by Jonathan Bromberg.

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Recap from ISHLT 2016: Ambulatory ECMO in Adults - We Like to Move It, Move It

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Worldwide, the use of extracorporeal life support has exploded onto the seen in recent years, with more centers now offering extracorporeal membrane oxygenation (ECMO) to select patients with advanced heart and/or lung failure. ECMO may be performed as a bridge to transplantation or destination therapy, as a bridge to deciding on transplant candidacy, as a bridge to recovery of organ function, or as a means of support for post-transplant complications, such as primary graft dysfunction. The increase in ECMO use is likely related to several newer developments, such as improved technology, device performance, and safety; advances in patient management; and improvements in overall patient outcomes.

Moreover, ECMO patients can more easily ambulate when supported by either a dual lumen access cannula (typically placed in the right internal jugular vein) or by central cannulation. Coupled with prior studies describing functional disability and neurocognitive impairment following prolonged hospitalization for acute respiratory distress syndrome (ARDS), ECMO may now offer patients the advantage of maintaining physical capability while minimizing the sedation requirements.

In this ISHLT session, Christian Benden opened by reviewing the neonatal and pediatric ECMO experience. He described in particular the experience with lung transplant procedures performed in children on intra-operative ECMO support, noting the safety and favorable outcomes of the technique. Keith Wille followed with an update of the medical considerations when ambulating ECMO patients, including patient selection, benefits, safety concerns, and potential complications. He noted the importance of securing and maintaining proper cannula position during ambulation to reduce complications such as: arrhythmias, bleeding, cannula malposition, or changes in blood flow and hemodynamics. Avoidance of hemolysis, as measured by elevated plasma free hemoglobin, was also associated with improved ECMO outcomes. Next, Bryan Boiling offered a nursing perspective on the practical considerations regarding the resources for a successful ambulatory ECMO program. Ambulating a patient while on ECMO, he noted, typically requires several support personnel, namely a combination of nurses, physical therapists, perfusionists, and/or respiratory therapists. Attention must also be given to a patient’s hemodynamic status, oxygen requirement, and level of mentation and cooperation. Finally, Kate Hayes addressed the physical benefits and specific complications related to mobilizing ECMO patients. While the survival rate after ECMO for patients with reversible refractory hypoxemia can be high, long-term survivors may suffer from reduced mental health, general health and social function, with little chance of returning to work. She highlighted the need for long-term follow-up and support for these patients after discharge, and the need for longer-term end points in future clinical studies.

As advancements in the delivery of extracorporeal life support continue, several issues will need to be addressed. These include: refining candidate selection guidelines; defining optimal dosing of
anticoagulation; establishing transfusion thresholds to minimize sensitization risk; enhancing safety; reducing device-related complications; and identifying those patients most able to participate in and benefit from early ambulation. Finally, the expanding international interest of ECMO has coincided with Erick Morillo’s – Reel 2 Real song “I Like to Move It” from 1994 only to become an international hit perpetuated by Dreamworks computer-animated comedy series – Madagascar with the latest premiere in 2012, Madagascar 3: Europe’s Most Wanted and Madagascar 4 due in 2018. Indeed, like the song and animated series, our most wanted desire for patients on ECMO is to have them “Move It, Move it.”

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The Explosion of Social Media: The ISHLT and JHLT Catch on Social Fire!

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We didn't start the fire
It was always burning
Since the world's been turning
We didn't start the fire
No we didn't light it
But we tried to fight it...

- Billy Joel

Since the advent of the World Wide Web at the beginning of the 1990’s, the pace of innovation has increased exponentially. The advent of social media services such as Facebook, Twitter and LinkedIn have contributed to a global sense of “connectedness” at some level and have functioned as avenues to disseminate information. While some of these services started as ways for teenagers to chat, they have become legitimate tools for adults to exchange information of a professional nature and have an immediacy which has challenged "old school" media such as traditional journals and newspapers.

In the area of science, we have a plethora of journals which compete to publish the material of highest interest and increasingly, the “consumption” of this information is in electronic format. Many of us remember keeping file cabinets full of research papers cut from paper journals, and organized by topic area and while this is still common, the practice is giving way to downloads of “PDF” (portable document format) files which can stored on local storage or an ever increasing number of private “cloud” sites.

With the large number of quality scientific journals publishing on an ever increasing frequency, there is the need to capture the eyes of interested professionals. In particular, journals are rated in terms of the impact that a manuscript has after publication and how immediately the data is disseminated. With this in mind, Drs. Mandeep Mehra and Patricia Uber asked me more than a year ago to spearhead the effort to develop a social media presence for the Journal of Heart and Lung Transplantation. The journal has articles which are highlighted for outstanding quality as “featured” publications and are free to download. The Journal pays a significant amount of money to make these articles free of cost to download and therefore maximizing viewing and eventual citation of these featured works is a high priority. Also, the hope was that the profile and reputation of the Journal of Heart and Lung Transplantation would be further enhanced by reaching out to the readership via social media.

I assembled a team of partners in our Social Media Workgroup and we have successfully built a large following on Facebook, Twitter and LinkedIn for the Journal. Our first members were Drs. Shelley
Hall, Brian Lima, Jaime Hernandez-Montfort, Kofidis and Ryan. This year, we added Drs Bertolotti and Fenton as well as Ms. Kelly Stelling from the Nursing Science / Allied Heath Council membership.

**Our Team:**

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We also decided to add a role with helping expand the Social Media outreach of the ISHLT itself. The ISHLT has long had a Twitter account, but we added LinkedIn and also significantly expanded the offerings on these accounts. Our focus for the ISHLT social presence is to highlight items of interest to our members as well as interested non-members, including news about heart and lung disease, mechanical circulatory support, thoracic transplantation and pulmonary hypertension, as well as the pediatric aspects of these disease states. The JHLT presence will focus primarily on the late breaking papers from the Journal so these two social presences are complementary but separate. So, on Twitter, please follow @ISHLT and @TheJHLT.

On LinkedIn, ISHLT and TheJHLT or use the web-links below

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We would be happy for any feedback at: JHLTSocial@gmail.com or ISHLTSocial@gmail.com.

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EDITOR’S CORNER: The Art of It: For Humanity’s Sake

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Are we training a generation of medical students or other healthcare providers who cannot take histories? Over the last several years, a technological explosion of skillful access to electronic information, computerized studies, sophisticated devices and a wide array of biomarkers demanding our attention and analysis to make critical decisions about patient’s lives have captivated our attention. The values of blood tests, lab results and interpretations of various procedures along with the electronic medical record have diverted our attention away from the patient. The older model of tending to what a patient says or tells us at the bedside or in the clinic is becoming antiquated. As we try to refine our skills to interpret the massive amounts of information in different formats through different media, the old clinical adage, “if you let the patient tell you what’s wrong, they will,” will be forgotten and left in the expanding abyss between technological sophistication and downright care and concern for the patient. Most of the important information about a patient’s illness will come from their history. The patient must be given the opportunity to talk and above all, we must hear it, listen to it, interpret it, process it, understand it and filter all the noise that comes from this dialogue that may be slowly eroding. In essence, where talk is cheap, communication is the two-way street. It is almost never straightforward. But to hear, listen, interpret and discern their story requires practice and refinement. When medical students and other trainees in health care talk about the fine clinical skills of the master teacher, they’re talking about communication which half of it is listening. Most importantly, it is active listening implying no texting, face in the monitor or typing when tending to the patient. The master is the one who still knows how to process the story being told. That’s the art of it. If all we do is tend to the electronic medical record, review blood values, send patients for diagnostic exams and refer to consultants then we are merely navigators and dispatchers as we focus on the science of it. As a result, some doctors if not many of us, don’t listen. In this new age of rapid pace, genomic-focused and nanotechnological medicine many of us could profit from the old-fashioned practice of listening. We are very quick to interrupt while patients describe their symptoms and ailments. It’s been reported that we interrupt patients in 18 seconds. The stethoscope and the handheld ultrasound used to listen and see the bubbles, boils, toils, troubles, thumps and signs emanating from under the skin of the patient have pushed aside the world outside the skin we frequently ignore, that is the words of our patients as they attempt to explain those findings on the inside or what lies beneath.

Is this a side effect of the health care curriculum? Medical education has been governed by a bioscience paradigm brought forth by Abraham Flexner in his report from over 100 years ago in 1911. Beginning in college, we are required to study the sciences: biology, chemistry and physics. In medical school we study: anatomy, physiology, pathology, microbiology, pharmacology, physical diagnosis and specialized rotations. The success of this bioscience model and its breakthroughs cannot be ignored and have included vaccines, antibiotics, chemotherapy, the pharmaceutical explosion, immunosuppression, transplantation, mechanical circulatory devices and ECMO, just to
name a few. The progress with cystic fibrosis from World War II to today is a phenomenal marvel of medicine in and of itself. Today’s society with its focus on healthcare and healthcare costs thrusted upon us is unfortunate as we must be attuned to the economic sense of what lies beneath. Science has helped us with heart disease, cancer and many of the infectious diseases of the past, but have we really figured all of this out? Tuberculosis was on the path of elimination, it thrives today. New dilemmas have emerged. The threat of longevity, terror of Alzheimer’s and the prospect of decades of slow and relentless progressive conditions including our organ recipients and those who exist on new devices do have social, familial and moral implications. We are dealing with these predicaments - there are very few bridges between scientific knowledge and humanistic knowledge. Very few trainees in health care today have carefully studied both the humanities and the sciences.

A little reflection on this shows that we have all experienced pain, directly and indirectly; emotionally and physically. We have seen pain in other people. Many of us if not all of us are afraid of dying. In the ISHLT, we have some acquaintance with death. But we have not witnessed anyone who has died to come back to tell us what death is like. Science and the bioscience paradigm is obviously not enough. We must tend to our patients and their humanity. Focusing on the science is just a part of it. Without tending to the patient’s “heart of the matter,” soul or their humanity, then we may be shallow and superficial bordering on not really caring for the patient. Turning to art and the humanities beyond the science of it can allow us to explore pain, suffering, disease and death. Our patients live with disease, experience pain and will eventually die. All the science in the world cannot prevent death, suffering and for that matter, pain. Studying the arts, especially literature, the humanities, including fiction, listening to music and watching plays and movies will allow us to gain a deeper understanding and illuminate our understanding of death, suffering and pain. This will show our patients that we care because we will be able to communicate better and listen to their problems by experiences we gain not only by listening to them but through the arts of it all that we cannot otherwise understand, especially when it comes to suffering and death. This will give us a deeper sense of sickness, pain, suffering, death and caring. It is our intention over the course of the next series of issues for volume 8 of the ISHLT Links to delve into the world of the patient with their pain, suffering and death through art, mostly literature to add depth to our understanding of suffering and death. As a result, we just might gain a broader view of our patients’ pain, suffering and death. It’s not just knowing what we know by what kills people according to modern medicine. Modern medicine interestingly is cadaver-based or death-derived if you will. From whence we understand disease, cancer and infections. Literature, on the other hand, can help us understand how people live and help us better communicate with our patients to sort out what makes people live, not merely prognosticate or determine when our patients will die or the factors that may contribute to their death. This added dimension will help us see the issues of pain, suffering and death and how these issues might actually outpace the limits of science. Focusing on literary works about death and suffering can expand our perspective and nearly all facets of life including history, culture, politics, race, class, gender and as my friend Mary Chrisant will share with us, the importance and implications of religion on the art of pain, suffering and death.

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