TSRA Newsletter
Thoracic Surgery Residents Association

TSRA Newsletter Archive

March 2020 — Volume 1, Issue 3

TSRA Announcements & Deadlines

Academic Cardiothoracic Surgery Survey
If you are an integrated, traditional, or 4+3 cardiothoracic surgery trainee, please complete the following short survey assessing current trainee experience and exposure to academic cardiothoracic surgery:
CLICK HERE FOR SURVEY

New Survey Proposals — Deadline May 3rd
We encourage any resident to submit interesting research proposals for a nationwide survey of current trainees.

Examples of previous TSRA research publications can be found here: Bibliography

Eligibility:
1. Must be a TSRA member (i.e., any U.S. cardiothoracic surgery resident enrolled at an ACGME-accredited program).
2. IRB approval from the primary author's home institution is required.

Please submit all application materials using THIS FORM

Deadline: May 3, 2020 at 11:59pm ET

Trainee Opportunities in CT Surgery

By: J. Hunter Mehaffey

Click on the links below for more information about these opportunities:

Get Involved!
To get involved with a TSRA committee, contact any of the following Committee Chairs for more details:

Projects Committee: Clauden Louis
Education Committee: Hunter Mehaffey
Membership Committee: Jordan Bloom
Communications Committee: Alex Brescia

General surgery residents, cardiology fellows, and international cardiothoracic surgery residents are eligible for Associate Membership in the TSRA by submitting this application form
No deadline; rolling

TSF International Medical Volunteer Scholarship
April 1, 2020

COVID-19 Updates and Resources for Trainees

By: Editorial Team

In the coming days, weeks, and months, the COVID-19 pandemic will continue to affect the daily lives of our trainees, families, and patients. We have compiled a collection of announcements, best practices, publications, and tips regarding not only cardiothoracic surgical patients but critical care of all patients which trainees may encounter in the coming days as physicians and nurses around the country and world adopt an all-hands-on-deck approach. The content provided was not developed nor specifically endorsed by the TSRA or the TSDA, but is provided for reference only. Trainees should refer to specific federal, state, institution, and training program policies in place during the COVID-19 pandemic.

STS Presidential Address, Online Community, and Resources
Please visit the STS website for a message about COVID-19 from STS President Dr. Joseph A. Dearani and refer to the designated COVID-19 STS page for links to an online forum and resource page for up-to-date information for our community.

AATS 100th Annual Meeting and AATS Aortic Symposium Canceled
Due to the spread of COVID-19 and state of emergency in New York City, all AATS activities have been canceled. Read the official statement from the AATS here: AATS 100th Annual Meeting

Per AATS e-mail: Abstract presenters for the AATS 100th Annual Meeting are strongly encouraged to submit their manuscript to JTCVS by May 31, 2020. If accepted for publication in one of the AATS journals, the manuscript will acknowledge that it was accepted for presentation at the AATS 100th Annual Meeting. Your manuscript can be submitted HERE.

More Conference Cancellations
Please see the list of abstract deadlines and conference dates in this Newsletter for updates on submission dates and up-to-date cancellations.

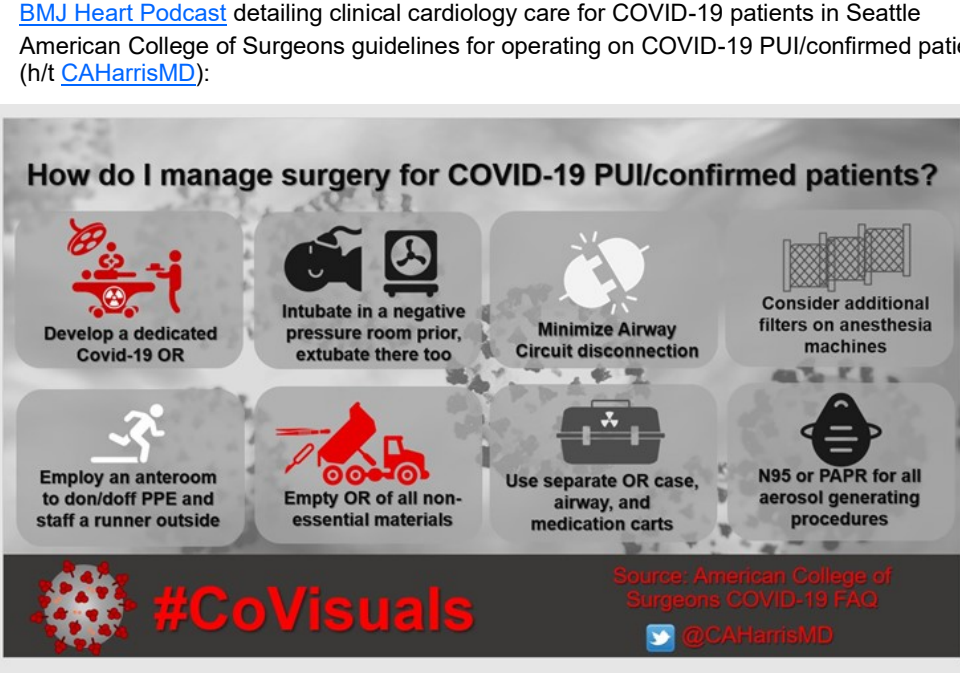
ABTS Oral Exam Postponed
The Board has recently announced that the Part II (Oral) Examination which had been scheduled for June 5-6, 2020 has been postponed and **tentatively rescheduled to occur on October 16-17, 2020** in Chicago.

COVID-19: An International Perspective Roundtable
Visit CTSNet for a special two-part roundtable discussion about the COVID-19 pandemic with an international group of physicians from Hong Kong, Italy, Washington state, and New York state, moderated by Dr. Brian Mitzman. Please also visit the CTSNet COVID-19 Message Board for ongoing discussion in our community.

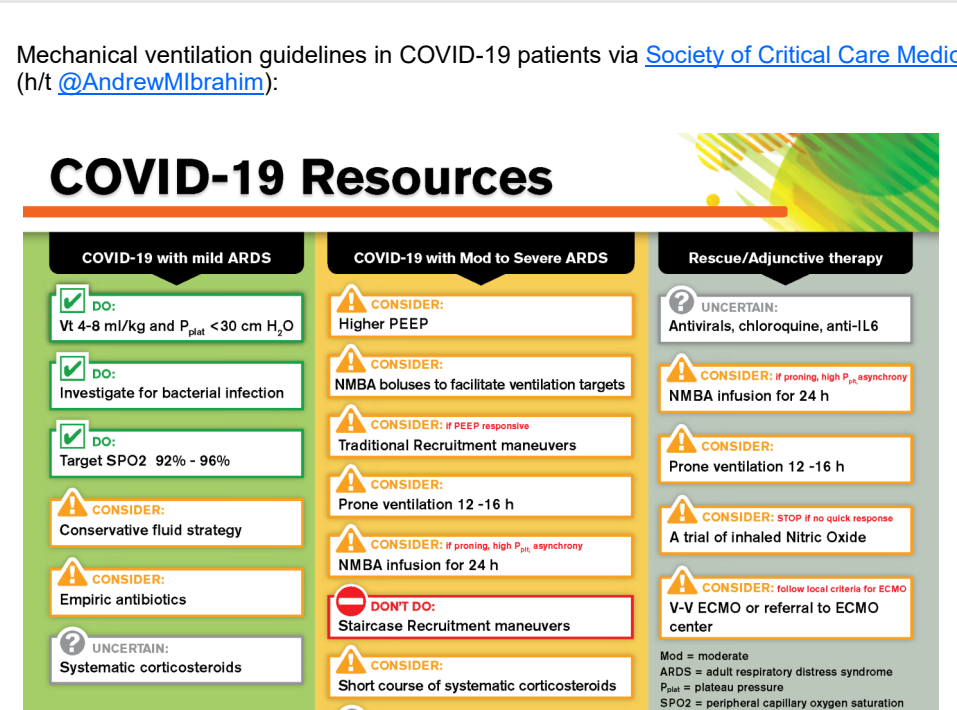
Resident Wellness
Throughout training and especially during times of crisis, self-care and wellness remain important. While many resources and options are available, some in healthcare have found the Headspace app to be helpful. The company has made Headspace Plus free for US healthcare professionals with an NPI number, through 2020.

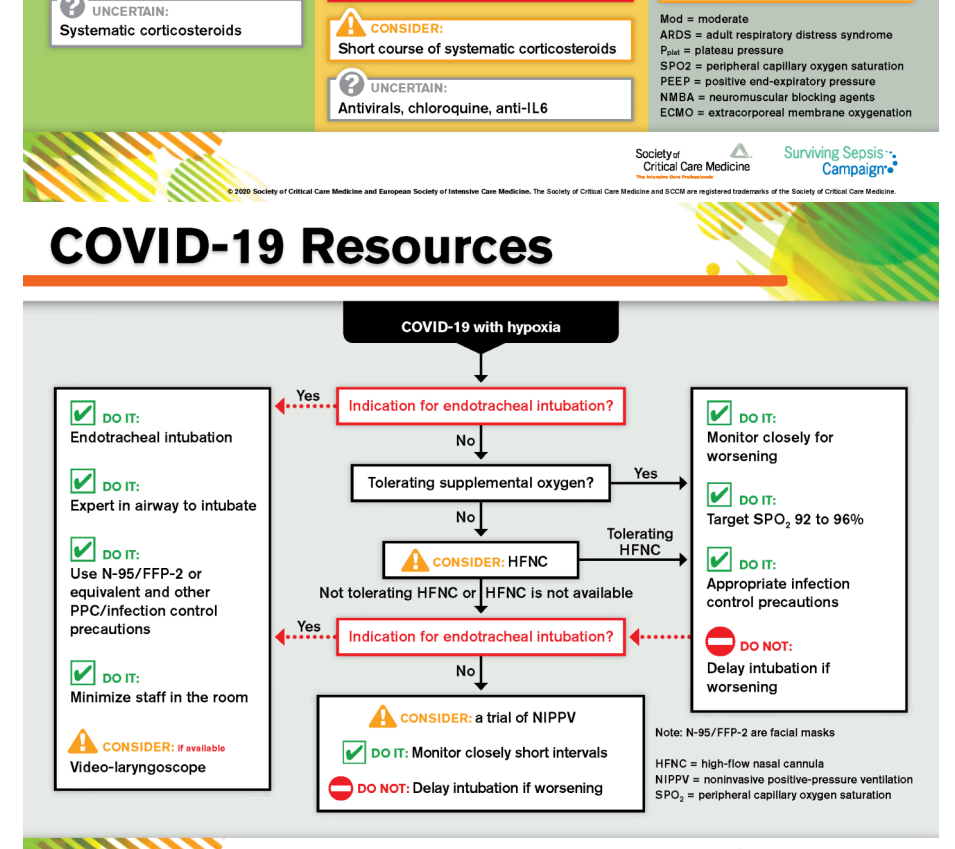
Information and Educational Resources for COVID-19

- Individual states & institutions have guidelines in place relating to policies for precautions and treatment of COVID-19 patients. CDC recs can be found here: coronavirus.gov
- View this YouTube video from the National Ebola Training and Education Center for proper donning and doffing of personal protective equipment when caring for COVID-19 patients
- View this YouTube video on ventilator management from Dr. Patrick Georgoff, Trauma and Critical Care Fellow at UT Houston, for a simplified refresher on understanding management of mechanical ventilation (via Behind The Knife: The Surgery Podcast)
- BMJ Heart Podcast detailing clinical cardiology care for COVID-19 patients in Seattle
- American College of Surgeons guidelines for operating on COVID-19 PUI/confirmed patients (h/t CAHarrisMD):



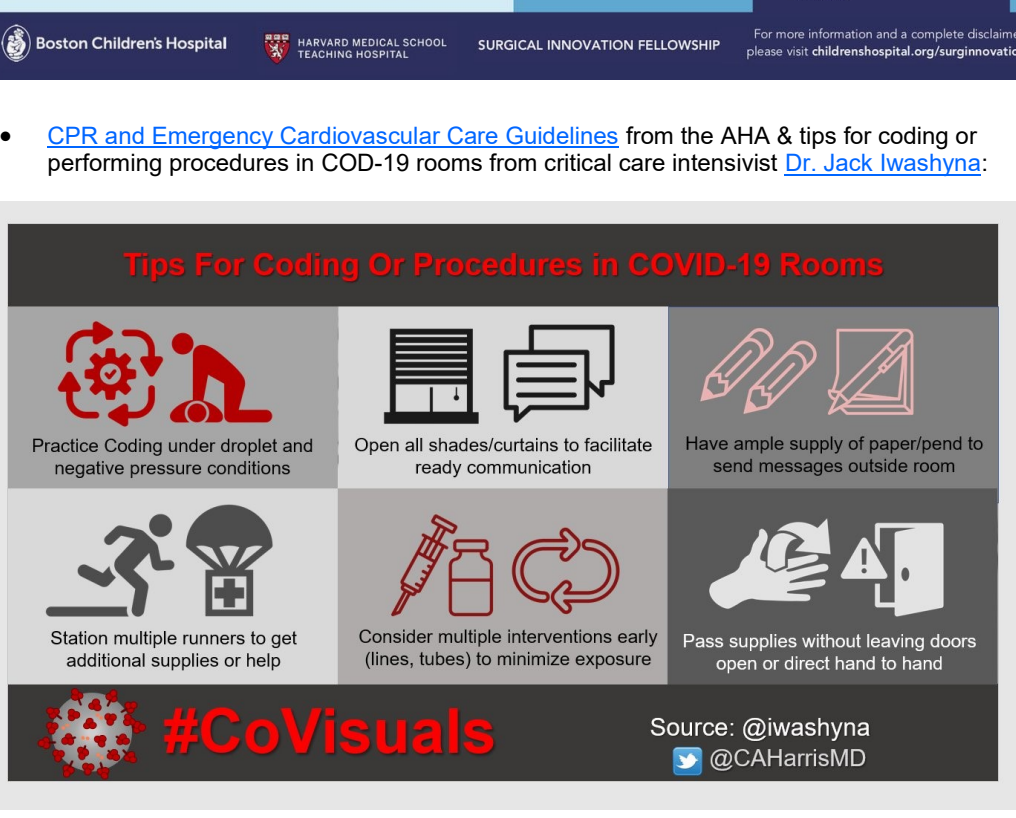
- Mechanical ventilation guidelines in COVID-19 patients via Society of Critical Care Medicine (h/t @AndrewMIbrahim):





- A novel solution to N95 mask shortage, developed by Dr. Brianna Slatnick and the Innovation Team from Boston Children's Hospital:

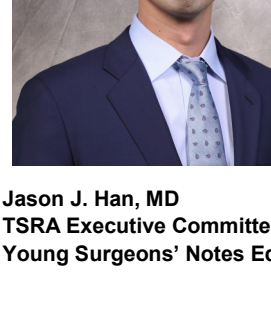
- CPR and Emergency Cardiovascular Care Guidelines from the AHA & tips for coding or performing procedures in COD-19 rooms from critical care intensivist Dr. Jack Iwashyna:



- An initiative for PPE donations started by MUSC cardiac surgeon Stanford Ziegler: heroesneedmasks
- Tips for management of tracheostomy patients during COVID-19: Chan et al. 2020 JAMA Otolaryngol Head Neck Surg.
- The American College of Surgeons has compiled links to noteworthy COVID-19 surgery peer-reviewed publications which will be updated frequently
- Epidemiological and statistical analysis of COVID-19 in Italy: https://covid19.intelworks.io/
- Reference our Featured TSRA Podcast section later in the Newsletter for a review of the use and management of ECMO
- Please also follow us on Twitter (@TSRA_official) where we will continue to provide and amplify useful content for trainees

Young Surgeon's Notes

By: Jason Han



Jason J. Han, MD
TSRA Executive Committee
Young Surgeons' Notes Editor

Notes on "Establishing An Academic Niche in Cardiothoracic Surgery: The Earlier The Better," by Garrett Coyan, MD, MS, Leonid Emerel, MD, and Christopher Sciortino, MD, PhD

This article from the *Journal of Thoracic and Cardiovascular Surgery* by Drs. Coyan, Emerel and Sciortino highlights the essential strategies for all CT surgery trainees who aspire to have successful academic careers, which according to a recent survey, comprises 76% of us.

They observe that the research environment for CT surgeons has grown more strenuous over the years as clinical and administrative demands are increasing, the overall size of the work force is shrinking, and funding for research is becoming increasingly more difficult to secure.

Thus, they contend that "...academic cardiothoracic surgeon of the future must indeed look very different from those of our predecessors and mentors."

The most important strategies?

1.) Developing a research career as early as possible.

Of course, this is not an easy task. But the authors suggest that it is very feasible at most training programs available to us today. First, there needs to be an environment built around nurturing and mentoring budding clinician–scientists. This entails increased exposure to "...advanced (or even basic) statistical analysis techniques, scientific writing, grantsmanship, laboratory/personnel management, and scientific/clinical study design..." Over time, the accumulation of these skills leads to a natural progression among trainees into well-versed academicians who can take a project from start to finish.

2.) Narrowing the focus of research

This is important for increasing early productivity, credibility and protection because "...it allows for early recognition of expertise in an area that may yield fruitful results..." for the field. Moreover, doing so leads to a "...more cohesive stream of research products, and...a clearer pathway for funding..." or protected time.

One intuitive way to narrow one's focus is surrounding specific disease processes or operations one conducts. It may also be helpful to narrow the focus based on the type of research, such as big data/outcomes research, surgical physiology, or costs/benefit analysis.

3.) Honestly assess oneself

The authors lastly contend that research is an individualized process that requires introspection and an honest assessment of one's skill, knowledge, interest, time commitment, and support from peers.

Borrowing from the business community, they outline the following questions as a way to evaluate oneself:

- **Where and how do you conduct research?**
- **What value/skill do you bring?**
- **What resources will you use?**
- **How do you sustain value/productivity?**

Overall, this thought-provoking article by Drs. Coyan, Emerel, and Sciortino is a must-read for all trainees. If you are interested in learning more, please find the **article here** at the *Journal of Thoracic and Cardiovascular Surgery.*

Trainees are encouraged to join the discussion at https://twitter.com/tssmn. Please add comments in the twitter chats or in the form of letter to the editor.

Manuscript of the Month

By: Jordan Bloom

The influence of hormone replacement therapy on lung cancer incidence and mortality

Ashley L. Titan, MD, Hao He, PhD, Natalie Lui, MD, Douglas Liou, MD, Mark Berry, MD, Joseph B. Shrager, MD, Leah M. Backhus, MD, MPH

Titan and colleagues report a large secondary analysis of the prospective Prostate, Lung, Colorectal, and Ovarian (PLCO) cancer screening trial where they investigated the potential association of hormone replacement therapy (HRT) with non-small cell lung cancer (NSCLC) in women. A total of 75,587 females were included in the study, of which 1,147 developed NSCLC at a median follow-up time of 11.5 years. Current HRT use was appreciated in 49.4% of women while former and never use in 17% and 33.6%, respectively. Using multivariable regression analysis, current HRT was associated with reduced risk of NSCLC compared to never users (HR 0.8, 95% CI 0.7-0.93, P=0.009). Despite this difference, HRT was not associated with significant differences in all-cause mortality or disease specific mortality. The authors conclude that HRT use may have a protective effect on the development of NSCLC in women.

Association of HRT and NSCLC Incidence:

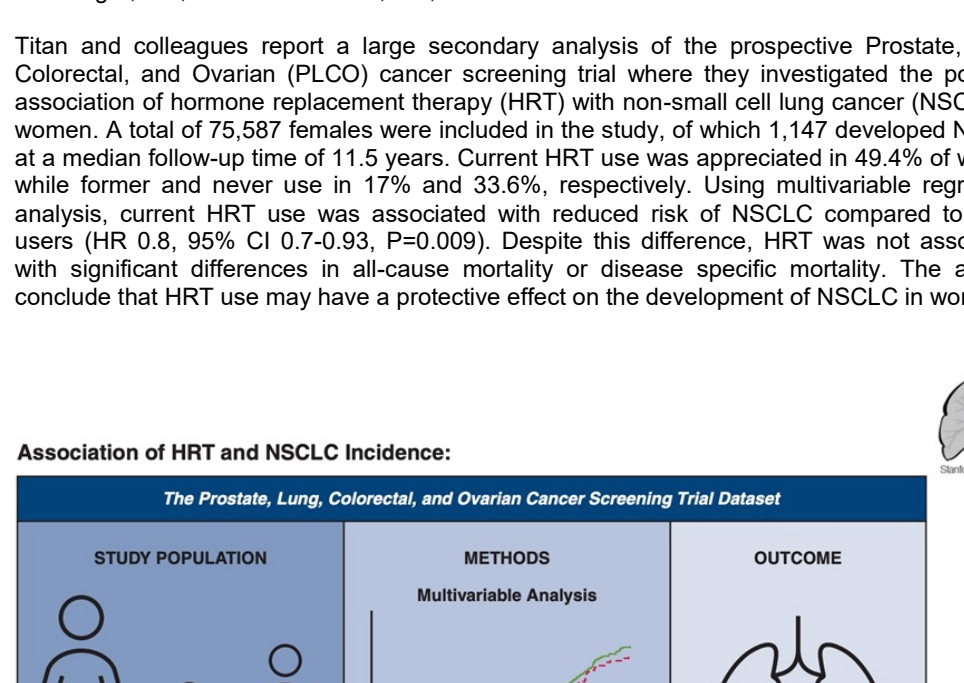


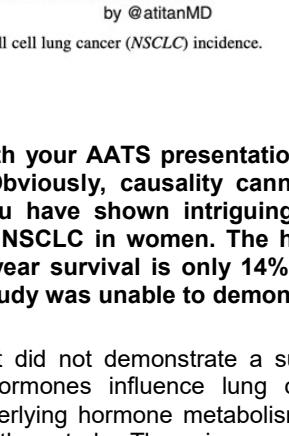
FIGURE 3. Association of hormone replacement therapy (HRT) and non–small cell lung cancer (NSCLC) incidence.

Question and answer with lead author Dr. Ashley Titan

Q: Dr. Titan, very nice study and congratulations on both your AATS presentation and JTCVS publication. I have a few questions for you. Obviously, causality cannot be determined from retrospective research. That said, you have shown intriguing data suggesting a possible protective effect of HRT against NSCLC in women. The hazard ratio is dramatic and quite significant. As you know 5-year survival is only 14% in all comers with NSCLC at 5 years. Why do you think your study was unable to demonstrate a survival difference in this cohort?

A: "There are a myriad of reasons as to why our dataset did not demonstrate a survival difference. It remains unclear if and how exogenous hormones influence lung cancer development and mortality. The biological mechanisms underlying hormone metabolism and lung cancer have not been clearly identified and need further study. There is an exciting potential to use hormonal therapy/modulation to reduce risk and potentially increase survival as seen in previous work with tyrosine-kinase inhibitors which had a therapeutic benefit in patients with lung cancers that strongly expressed estrogen receptor beta (Nose et al. 2011)."

There is some evidence to suggest that there may be differences with regards to tumor biology relating to development and thereafter aggressiveness of the tumors that men and women develop. With this knowledge, one possible rationale for lack of a survival difference could be that HRT is protective from developing more indolent cancers such that the type of cancer that is able to circumvent whatever protective mechanisms provided by HRT is essentially the "same" type of cancer that males develop. Thus, they behave similarly in terms of their aggressiveness and outcomes.



Ashley Titan, MD
@ATitanMD

Q: With such a large study, p-values become hard to interpret. When I look at your Table 1, it does seem to reflect that current HRT users are younger, more likely to be white, more educated, less likely to smoke or have a family history of cancer and much less comorbid. Moreover, the current HRT users had earlier stage disease thought not statistically significant. Do you think these baseline differences in study groups are likely to answer my first question?

A: "You very astutely point out the significant differences between the cohorts. There is likely a selection bias of those women initiating and remaining compliant with HRT. A healthier lifestyle can definitely contribute to lowering one's risk of developing lung cancer such that if those non-HRT users are by default "less healthy" or otherwise have some inherent difference it may make their cancer outcomes more similar to their male counterparts. To control for these differences, the multivariable models were created through the stepwise selection process to maximize the adjustment of multiple important demographic and clinical factors. And additional sensitivity analyses were performed as well, among the different strata of the HRT user types, to control for the possible selection bias."

Q: Did you consider any additional statistical methods to correct for observed baseline differences such as propensity matching? Do you think this would add value to your study?

A: "We considered the propensity score matching method during our initial analysis. However, even after including all variables in Table 1 and 2 to obtain the predictive probability (propensity score) for HRT status, the model could only explain less than 25% of the total variance. We were concerned about the low representative capability of the propensity score. Additionally, in our literature review, we found that most studies that have looked at the relationship of other cancers and HRT use using the PLCO data set (such as Symer et al. 2018 and Troy et al. 2010) chose multivariable modeling in their studies as primary means of adjustment. Thus, for consistency, we chose to use time-to-event multivariable modeling for this study."

Q: Finally, where do you see this research going from here? Is the signal you identified strong enough to warrant a prospective trial?

A: "Further studies should be conducted to determine whether HRT or other estrogen receptor targeting therapeutics may help reduce the risk of lung cancer in women. Prior to pursuing a prospective trial, we first need further elucidate the association between estrogen and the pathogenesis of lung cancer possibly with the use of animal models. It is important to determine if HRT's possible protective effect is limited to the development of lung cancers containing receptors for estrogen or to all lung cancers."

Once again, thank you for the interview and for your excellent paper.

Citation: Titan AL, He H, Lui N, Liou D, Berry M, Shrager JB, Backhus LM. The influence of hormone replacement therapy on lung cancer incidence and mortality. *J Thorac Cardiovasc Surg.* 2020 Apr;159(4):1546-1556.e4.

Click here to read the full manuscript and click here for the accompanying video of Dr. Titan discussing this study's findings

Featured TSRA Podcast

By: Garrett Coyan

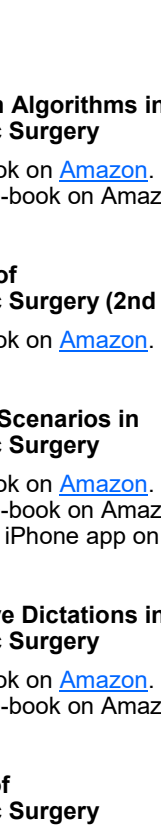
Given the current suspected increasing demands being projected for our ICU workloads in the era of COVID-19, it seems timely to review the use and management of ECMO for our patients. We feature the following podcasts to refresh everyone on cannulation techniques and management of the patient requiring ECMO in adults and pediatric patients.

Dr. Melvin discusses adult applications of mainly VA ECMO with Dr. Sunil in the following episode:

TSRA Podcast: Cardiac - ECMO Placement & Management

Next, Dr. Miller and Dr. Eghtesady discuss applications of ECMO in pediatric patients in this episode:

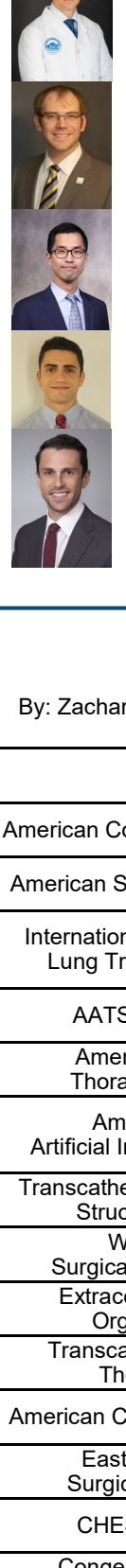
TSRA Podcast: Congenital - ECMO & LVAD Management in Pediatric Patients



Call for New TSRA Podcast Ideas
We want to expand our popular podcast series with new ideas & topics. Our existing collection is available on Soundcloud & iTunes

If you are interested in recording one of the unclaimed podcast topics **OR** have new topics to propose, please contact Clauden Louis.

TSRA Executive Committee
(2019-2020)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David Blitzer
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TSRA Educational Resources

TSRA Decision Algorithms in Cardiothoracic Surgery
1. As a print book on Amazon.
2. As a Kindle e-book on Amazon.

TSRA Review of Cardiothoracic Surgery (2nd Ed)
1. As a print book on Amazon.

TSRA Clinical Scenarios in Cardiothoracic Surgery
1. As a print book on Amazon.
2. As a Kindle e-book on Amazon.
3. As an iPad & iPhone app on iTunes.

TSRA Operative Dictations in Cardiothoracic Surgery
1. As a print book on Amazon.
2. As a Kindle e-book on Amazon.

TSRA Primer of Cardiothoracic Surgery
1. Download from iTunes

TSRA Multiple Choice Review of Cardiothoracic Surgery
Check out the official website with free registration.

TSRA Newsletter Editorial Team

Alex Brescia — Editor
Hunter Mehaffey — Trainee Opportunities
Jason Han — TSRA Advice Blog and Young Surgeon's Notes
Jordan Bloom — Manuscript of the Month
Garrett Coyan — Featured Podcast
Clauden Louis — TSRA Educational Resources and Multiple Choice Questions
Zachary Spigel — Abstract & Conference Dates
Tariq Sohail Babar — Diagnostic Challenge
Parth Patel — Graphic Support

Abstract Deadlines and Conference Dates

By: Zachary Spigel

Meeting	Submission deadline	Location	Dates
American College of Cardiology (ACC)	CLOSED	Chicago, IL	~~Mar 28-30, 2020~~ CANCELED
American Surgical Association (ASA)	CLOSED	Washington, D.C.	~~Apr 16-18, 2020~~ CANCELED
International Society for Heart and Lung Transplantation (ISHLT)	CLOSED	Montreal, Canada	~~Apr 22-25, 2020~~ CANCELED
AATS Aortic Symposium	CLOSED	New York, NY	~~Apr 23-24, 2020~~ CANCELED
American Association of Thoracic Surgery (AATS)	CLOSED	New York, NY	~~Apr 25-28, 2020~~ CANCELED
American Society for Artificial Internal Organs (ASAIO)	CLOSED	Chicago, IL	~~Jun 10-13, 2020~~ CANCELED (virtual meeting)
Transcatheter Valve Therapy (TVT) Structural Heart Summit	Apr 15, 2020	Chicago, IL	Jun 17-20, 2020
Western Thoracic Surgical Association (WTSA)	CLOSED	Vail, CO	Jun 24-27, 2020
Extracorporeal Life Support Organization (ELSO)	July 15, 2020	Waikoloa, HI	Sept 23-26, 2020
Transcatheter Cardiovascular Therapeutics (TCT)	June 15, 2020	Miami, FL	Sep 23-27, 2020
American College of Surgeons (ACS)	CLOSED	Chicago, IL	Oct 4-8, 2020
Eastern Cardiothoracic Surgical Society (ECTSS)	Aug 1, 2019*	Manalapan, FL	Oct 7-10, 2020
CHEST Annual Meeting	Mar 31, 2020	Chicago, IL	Oct 17-21, 2020
Congenital Heart Surgeons' Society (CHSS)	May 28, 2019*	Boston, MA	Oct 22-24, 2020
Southern Thoracic Surgical Association (STSA)	Apr 5, 2020	Orlando, FL	Nov 4-7, 2020
American Heart Association (AHA)	Jun 4, 2020	Dallas, TX	Nov 14-16, 2020
Southern Surgical Association (SSA)	Jun 30, 2020	Palm Beach, FL	Dec 6-9, 2020
Society of Thoracic Surgeons (STS)	Aug 13, 2019*	Austin, TX	Jan 30 - Feb 2, 2021
Academic Surgical Congress (ASC)	Aug 26, 2019*	Houston, TX	Feb 2-4, 2021
Southeastern Surgical Congress (SESC)	Sep 13, 2019*	Atlanta, GA	Feb 13-16, 2021
American College of Cardiology (ACC)	Oct 31, 2019*	Atlanta, GA	Mar 20-22, 2021
American Surgical Association (ASA)	Nov 25, 2019*	Seattle, WA	Apr 15-17, 2021
International Society for Heart and Lung Transplantation (ISHLT)	Oct 15, 2019*	Sydney, Australia	Apr 21-24, 2021
AATS Mitral Conclave	Jan 6, 2019*	New York, NY	Apr 29-30, 2021
American Association of Thoracic Surgery (AATS)	Oct 15, 2019*	Seattle, WA	May 1-4, 2021
American Society for Artificial Internal Organs (ASAIO)	Feb 3, 2020*		
Western Thoracic Surgical Association (WTSA)	Jan 6, 2020*	Victoria, British Columbia	Jun 23-26, 2021
Annual Update on Pediatric & Congenital CV Disease Conference	Nov 18, 2019*		

*** Designates previous year's deadline, if current deadline not yet available.**

To request inclusion of other specific meetings that may of interest to TSRA members, please contact Zach Spigel at zxspigel@texaschildrens.org

Sample Questions from the TSRA Multiple Choice Question Bank

By: Clauden Louis

1. The following type of DORV is known to develop pulmonary vascular disease early if not surgically corrected:

A. Subaortic DORV
B. Subpulmonic DORV with pulmonary stenosis
C. Non-committed DORV
D. Subpulmonic DORV

Answer and Explanation
Answer D. While all types of DORV can develop pulmonary vascular disease due to excessive blood flow, the subpulmonic variant is particularly at risk because blood from the LV streams across the VSD into the pulmonary artery causing excessive pulmonary blood flow. This variant should be operated on early. Presence of pulmonary stenosis affords protection against such high flow.

2. Desmoid tumors:

A. Rarely recur after resection
B. Are often multiple but excision is curative and no adjuvant therapy is required
C. Can spread along tissue planes making resection to negative margins difficult
D. Have a distinctive appearance on imaging studies demonstrating an osteolytic process with paracostal opacities

Answer and Explanation
Answer C. Commonly associated with Gardner's syndrome, and FAP, but also can occur after trauma. There are no characteristic radiographic findings. Diagnosis is with excisional biopsy and therapy is wide local excision with 4 cm margins because of the propensity of desmoids to grow along fascial planes beyond the primary lesion. Radiation therapy is used to treat positive margins and there is no clear evidence to support use of chemotherapy.

3. In a patient deemed to be appropriate for DT LVAD, intra-op TEE on the morning of surgery shows PFO and moderate tricuspid regurgitation. The most appropriate sequence of operation (assuming ascending aortic cannulation and outflow graft anastomosis) of the following options is:

A. Bicaval venous cannulation, commence CPB, repair PFO, tricuspid annuloplasty, implant LVAD
B. Dual stage venous cannulation, commence CPB, implant LVAD
C. Dual stage venous cannulation, commence CPB, repair PFO, tricuspid annuloplasty, implant LVAD
D. Bicaval venous cannulation, commence CPB, implant LVAD, repair PFO, tricuspid annuloplasty

Answer and Explanation
Answer A. Intra-atrial communications should be closed at the time of LVAD implantation. With the RA open, TR greater than moderate should be addressed to avoid post-op RV dysfunction. Opening the RV necessitates bicaval cannulation with snares for adequate visualization and avoidance of air lock. These maneuvers should be completed prior to LVAD implantation for ease of de-airing the left heart before separating from bypass.