AAST DAILY

TODAY'S EVENTS

7:00 am
New Member Breakfast / Breakfast

8:00 am
Session XII – Quickshot Session I

9:35 am
Session XIII – Quickshot Session II

11:00 am
Meeting Adjourned

SESSION IX

ACUTE CARE SURGERY

By – Paula Ferrada, MD

Session IX of the AAST meeting was focused in Acute Care Surgery (ACS) issues and improving patient outcomes.

The morning started with a very interesting presentation, showing results from expansion of quality measurements to the emergency general surgery realm, focusing on the patients that received non-operative management. There was a significantly higher complication rate in these patients, and the study identified a need for inclusion of these patients in registries. Using this study as a gap analysis can help when designing clinical registries that ultimately can serve as performance evaluation and resource allocation tools.

Dr. Rios-Diaz presented compelling work demonstrating a direct correlation with mortality and sarcopenia in patients requiring emergency general surgery. Sarcopenia is a pivotal component of frailty, and can be measured by the size of the psoas muscle. Since the advantages of pre-operative imaging, it is feasible to obtain this measurement in the pre-operative period to predict and possibly prevent deterioration.

Elaborating further in the point of improving outcomes, Dr. Ogola demonstrated on a retrospective analysis that patients with the need of emergency general surgery interventions have better outcomes when treated in higher volume centers. This resonates with previous literature showing similar results for trauma and complicated cancer cases.

To improve patients' outcomes, it is imperative to focus in advancing education. Paper 47, explored the possibility to use international collaboration as adjunct to case volume and complexity for ACS fellows. More importantly, this paper pointed out the necessity to fill a case number and complexity gap for surgeons' in-training as well as the need to enhance their technical development. The presentation focused on a surgery to all program directors for trauma, critical care, and acute care surgery fellowships.

LUNCH SESSION IX

RIB FIXATION: WHO, WHEN, WHY.

By - Eric Kuncir, MD

Moderated by Marc de Moya with three panelists, an overview of the current key and recent rib fixation studies was presented, followed by practical experience in the technique then a discussion of operative concerns with a comparison of the various rib plating systems commercially available and their potential limitations. Case examples were employed by the panel following the discussion.

Agreement was that rib fixation has a sustained role in both repair of flail chest but also for the management of pain, but the expert panel agrees that the most common indication is chest wall deformity and how fractures impact pulmonary function and the ability to safely wean from mechanical ventilation. Trauma surgeons have increasingly performed the procedure when compared to our Orthopedic and Thoracic Surgery colleagues so discussion at AAST is valid. Studies support decreased rate of pneumonia, ICU and hospital length of stay, ventilator days and a higher rate of return to work that patients were able to perform before their injury. Evaluation of pain compared pre and post operatively has been more difficult to quantify as a strict indication for rib fixation, but rib fracture pain should drive which ribs to repair.

The panelists discussed the number of ribs to fix and agree that chest volume loss and significant rib displacement drives that discussion especially as it affects pulmonary insufficiency. They agreed that it is best to achieve a stable chest by plating the fewest number of ribs possible rather than making wide often debilitating incisions and plating every broken rib possible.

The main and most appreciated focus by the panel, to an audience of surgeons most of whom have experience doing rib fixation, was on operative pearls discussing challenges by virtue of rib fracture location (anterior, posterior, high or low, etc.) as it impacts operative exposure. The panelists agree that VATS with rib fixation is often indicated and they frequently, but not always, place a chest tube or chest drain following the procedure.

SESSION X

IOM REPORT ON MILITARY CIVILIAN COLLABORATION

By - Jaime Coleman, MD

In June, 2016, The Institute of Medicine along with the national trauma organizations, published a report entitled "A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths After Injury". This report was written by a 20-person committee, which included the following AAST members: Drs. Haider, Holcomb, McSwain, Scalea and Schwab. The goal of the report was to ensure lessons learned from military campaigns in Afghanistan and Iraq are carried over to the civilian environment, and included 11 recommendations. The full report can be found at: www.nationalacademies.org/hmd/Reports/2016/A-National-Trauma-Care-System-Integrating-Military-and-Civilian-Trauma-Systems.aspx.

During this panel, Dr. David Rasmussen served as moderator and began the discussion with a brief history of civilian and military collaboration. Dr. Holcomb informed the audience that the Department of Defense deploys providers that would not be allowed to care for patients at many stateside level I trauma centers and that between 2001 and 2015, approximately 1,000 preventable military trauma deaths occurred. Dr. Scalea described the origin of C-STARS (Center for Sustainment of Trauma and Readiness Skills). The current program includes pre-deployment trauma training, developing unique clinical assets such as telemedicine, and performing Department of Defense focused research. Dr. Knudson gave us insight into the Military Healthy System Strategic Partnership American College of Surgeons (MHSSPACS), as its medical director. She described its areas of concentration, which include the incorporation of the DoD trauma registry into NTDB/TQUIP for benchmarking. Dr. Martin gave us his unique perspective from the front lines of military service and compared resources found in the battlefield as more similar to that of a rural hospital, and suggested rural surgery rotations for military surgeons. Dr. Stewart, chair of the Committee on Trauma, encouraged all surgeons to make the goal of zero preventable deaths a reality. Dr. Jenkins spoke about the Coalition of National Trauma Research, and its efforts to develop a centralized research agenda.

Overall, this was a very informative and inspiring session, setting the bar high for all of us to accept nothing less than zero preventable trauma deaths.

Session XIA: PAPERS 49 - 59

By – Robert D.Winfield, MD

The session began with Dr. Brenda Zosa from Metrohealth in Cleveland presenting on the contentious issue of ongoing antibiotic prophylaxis in facial fractures. Dr. Zosa and her coauthors found no evidence of a reduction of infection with a long course of antibiotic administration when compared with a short course of 24 hours' duration.

With an emphasis on the impact of frailty in outcomes in trauma patients, Dr. James Wallace from Scripps Mercy San Diego compared psoas muscle area to masseter muscle area on admission CT scans and found a strong correlation between these measurements and with mortality. The authors suggest that head CT is more frequently obtained in elderly patients (frequently presenting with isolated head trauma from a ground level fall), and masseter area may be a useful predictive measure.

Later, Dr. Cornelius Thiels from the Mayo Clinic showed that brain-injured patients receiving prehospital FFP surprisingly had an improvement in neurologic outcome when compared to those receiving PRBC only. Dr. Thiels and coauthors suggest that FFP should be utilized early in patients with TBI.

As the session progressed, Dr. Simone Langness and UCSD coauthors looked at D-dimer levels in children with suspected head injury, finding that lower levels accurately predict the need for head CT scan, and may be used to avoid this testing modality. Also speaking on pediatric injury, Dr. Christine Leeper and team from UPMC showed that younger patients commonly show abnormalities in fibrinolysis following injury, including fibrinolysis shutdown and hyperfibrinolysis, and that the presence of these derangements is associated with increased complications.

Finally, Dr. Alex Eastman, as part of a multicenter collaboration, shared concerning data that shows increasing risk for violence-related injury in United States law enforcement officers, and suggests a need for preventive efforts in this high-risk population.

WEDNESDAY POSTER SUMMARY

By - Jeannette Capella, MD

Poster 5:
The authors looked at whether early mobilization in patients with non-operatively managed liver and spleen injuries was safe and cost effective. They showed that it is safe to mobilize patients in one day or less depending on the grade and that it sharply reduced hospital LOS and ICU LOS and, therefore, cost. While this study was small at a single institution, it does start to address a question in trauma surgery that needs to be answered.

Poster 18:
This was an interesting study comparing outcomes and complications in laparoscopic fenestrating subtotal cholecystectomy vs laparoscopic and open cholecystectomy. This seems to be a viable alternative to conversion to open cholecystectomy for difficult gallbladders and it may ultimately result in lower LOS with similar complication rates. The numbers are small in this study but it deserves further investigation.

Poster 22:
This study looked at the safety of early vs. late tracheostomy after anterior cervical fusion. While the study is small and not definitive, it found no difference in complication rates, most notably wound infection. The authors say this supports early tracheostomy since early mobilization of cervical spine injured patients yields fewer overall complications. However, in this study the rates of pneumonia and sepsis, which should be better in the early group based on other studies, the rates were statistically similar. This study simply wasn't large enough to answer their question, but it is important and deserves further study.

Session XIB: PAPERS 60 - 70

By - Adil Haider, MD

In another interesting papers, some used datasets to predict important trauma outcomes while others focused on translational science. It even had a few cohort studies as well.

Adrian Maung MD from Yale presented prospective data from the ReCONECT study which enrolled 767 patients and aimed to determine if a cervical MRI could pick up additional injuries among patients with a negative Cervical CT scan who could not be clinically evaluated or had persistent cervicalgia. They found that MRI picked up further soft tissue or disc injuries in nearly 1/4th patients – who had a previous negative CT. Zoe Meher MD from Temple presented a retrospective study of 323 patients and found that the 154 patients who received systemic intraoperative anticoagulation during an arterial injury repair had better arterial patency compared to those who did not.

John Sharpe MD from Tennessee presented data on 400 patients and showed that prolonged time to operative intervention for pelvic fractures leads to worse long term functional outcomes. Speaking of outcomes, Richard Calvo MD from Scripps presented a new metric to measure burden of pre-existing conditions among older trauma patients which outperformed several of the more well-known co-morbidity indices like Charlson and Elixhauser. The focus on older patients continued with Cathy Maxwell PhD's presentation of the "Frail Scale" which uses only 5 items in a questionnaire to predict functional status and mortality. The scale was touted as a bedside tool for frailty screening.

Finally, Brodie Parent MD from Washington described a 20 subject, biomarker study which found parenteral nutrition to be associated with impairments in RNA synthesis, Krebs cycling and nitrogen metabolism. Eszter Tuboly, PhD from Newcastle presented a 70 trauma patient study that discovered a large number of functional, but cell free mitochondria in patients' sera and that this was associated with poor outcomes; Have they found a Trojan horse? Not sure – looks like will have come back to AAST 2017 to find out!

THANK YOU

Thank you to the following who contributed time and articles for the newsletter:

Michael Rotondo, MD, Chair, Publications and Communications Committee

Eric Kuncir, MD, Daily Newsletter Work Group Chair

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Robert Winfield, MD

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