MEETINGS ROUNDUP360

D. J. Hak MD, MBA, FACS *Professor, Orthopaedic Surgery*
University of Colorado, Denver Health Medical Center, Denver, USA
e-mail: david.hak@dhha.org

The Annual Meeting of the Orthopaedic Trauma Association (OTA) continues to grow in size, scope, and number of attendees. The 2013 meeting was held in the desert resort venue of Phoenix, Arizona from October 9th to 12th.

The Annual Meeting was preceded by several well attended events including the Basic Science Fracture Forum, the International Trauma Care Forum, a 'Trauma Boot Camp' for practitioners needing a trauma refresher, a grant writing workshop, a Masters Level Coding Course, a course for Physicians Assistants and Nurse Practitioners, and a Young Practitioners Forum. Concurrently running with the Annual Meeting was a Residents Basic Fracture Course that uses a case based approach to teaching fracture care fundamentals for orthopaedic trainees.

There were 105 podium presentations in nine scientific sessions, along with 128 poster presentations. In the meeting's well-attended opening symposium, the focus was on evaluating outcomes for the 21st century. The session highlighted the use of a Patient Reported Outcomes Measurement Information System (PROMIS), which is a system of highly reliable, precise measures of patient-reported health status for physical, mental, and social well-being.

Several randomised studies were presented in the foot and ankle scientific session. A total of 110 patients were enrolled in a prospective randomised study that compared early weight-bearing and mobilisation with non-weight bearing and immobilisation after open reduction and internal fixation (ORIF) of unstable ankle fractures.[1] Patients treated with the early weight-bearing protocol had significantly improved ankle function, ankle range of motion, and improved SF-36 mental and physical health scores at six weeks. However, there was no difference in time of return to work between the two groups. There were no fixation failures, loss of reduction, or repeat operations in either group. For the patient's convenience, the authors recommended use of the early weight-bearing protocol following ORIF of unstable ankle fractures.

Seventy patients were enrolled in a prospective randomised study that compared standard syndesmotic fixation with dynamic fixation (TightRope, Arthrex, Naples, Florida).[2] Patients treated with the dynamic fixation returned to sporting activities earlier, and achieved significantly higher Olerud-Molander and AOFAS ankle scores at three, six, and 12 months. In the standard screw fixation group, implant failure occurred in 36% and loss of reduction in 11%. No implant failures or loss of reduction occurred in the TightRope group.

Investigators compared primary subtalar fusion *versus* ORIF for the surgical treatment of Sanders type IV calcaneus fractures in a randomised study.[3] In the 31 patients who completed their follow-up they found no difference between the two treatment groups.

Management of fragility fractures continues to be an important topic around the world. Investigators found no significant differences in clinical outcomes in a study of 205 patients with unstable (AO-A2) intertrochanteric hip fractures randomised to treatment with a sliding hip screw *versus* an intramedullary device.[4] Radiologically, fractures treated with intramedullary devices showed less femoral neck shortening but this did not translate into better clinical outcomes.

Retrograde intramedullary nailing was compared with locked plate fixation in a multicenter prospective randomised study of patients with A 1-3 or C1 distal femur fractures.[5] Investigators reported that patients with distal femur fractures had significant disability at one year. The overall functional results tended towards better outcomes in patients treated with an IM nail, although with the number of patients did not reach statistical significance.

The timing of open fracture treatment was studied in a prospective cohort study performed at three Level I trauma centers that examined the time to definitive surgery in open long bone fractures and subsequent development of deep infection.[6] Studying 791 open fractures in 736 patients investigators found that the development of deep infection was not associated with time to surgery. They found a low rate of infection in type I and II open fractures (1% and 4% respectively) and in upper extremity fractures (1.5%). The mean time to surgery for those that did not develop deep infection was 10.9 + 10.6 hours and for those that did develop deep infection was 8.4 + 4.4 hours. The investigators suggested that the low rate of infection in type I and type II open fractures and in open upper extremity fractures may justify delaying operative debridement of these injuries until available daytime hours.

Challenges in diagnosing acute compartment syndrome was studied in a group of patients both with and without compartment syndrome.[7] Investigators examined intramuscular pH, absolute compartment pressure, and delta compartment pressure. While an absolute pressure of 30 mm Hg was only 30% specific, and delta pressure of less than 33 mm Hg was only 27% specific, intramuscular pH was 80% specific at a level of pH < 6.38. They concluded that using intramuscular pH allows clinicians to confidently identify patients with compartment syndrome early and accurately.

In his presidential address, OTA President Andrew H. Schmidt, MD, emphasised the importance of standardisation and systems in improving trauma care.[8] Calling upon principles of chaos theory and fractal geometry, he identified the complex nature of medical care. He emphasised that we must work together to improve outcomes by improving communication with other disciplines, using checklists, and reducing the costs of "overtriage" in trauma centers. "We need to make our practices more uniform, more standard, in order to achieve predictable outcomes. One way to achieve this is with the use of simple checklists or protocols." He noted the World Health Organization Surgical Safety Checklist as an example of the usefulness of such an approach. This

checklist has been shown to reduce complications by one-third. Another example he discussed was fragility hip fracture programs. He noted that, "Over 300,000 hip fractures occur in the United States each year, with a mortality rate that remains around 20%; while many more surviving patients lose their independence. The management of these patients is complex and often requires multiple specialists. Standardised hip fracture co-management protocols, such as those developed by Dr. Stephen Kates and colleagues in Rochester, and presented at this meeting in the past, have demonstrated dramatic reduction in complications rates, improved outcomes, and decreased costs."

Finally, he noted the critical importance of system factors in improving patient care. "In this changing landscape of health care delivery, in which business considerations and profit motives are playing increasingly important roles, we need to be sure that our trauma systems remain intact and that medical considerations alone dictate trauma triage. We need to do it right the first time, for the sake of our patients. If care is not available at the local hospital, let's get that person to a hospital that is capable of providing definitive care with one transfer. To improve orthopedic trauma care, we need to establish a system for triaging orthopedic trauma and allocate patients with extremity trauma to appropriate centers based on the complexity of extremity injury."

The OTA continues to be a rewarding meeting highlighting current advances in trauma care. The 30th annual meeting will be held in Tampa Florida with pre-meeting events beginning on October 15, 2014 and the Annual Meeting occurring from October 16th to 18th, 2014. Details can be found on the Orthopaedic Trauma Association website (http://www.ota.org/).

REFERENCES

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6. **Weber D, Dulai SK, Bergman J, et al.** Time to definitive operative treatment following open fracture does not impact development of deep infection: a prospective cohort study of 736 subjects. *Orthopaedic Trauma Association* 2013 Annual Meeting, Phoenix.
7. **Elliott KGB, Johnstone AJ.** Acute compartment syndromel where pressure fails, ph succeeds. *Orthopaedic Trauma Association* 2013 Annual Meeting, Phoenix.
8. **Schmidt AH.** Standardization and systems: steps we must take together. *Orthopaedic Trauma Association* 2013 Annual Meeting, Phoenix.