

British Trauma Society

Annual Scientific Meeting

2022

Innovation in Trauma



23rd – 24th November, 2022
Leonardo Royal Hotel Oxford - Formerly Jurys Inn.





Dear Colleagues,

It is sunny and warm outside yet, here I am writing this. Why, because I am really excited to invite you to the annual scientific meeting of the British Trauma Society 2022 as we are back on track to face-face meeting after two years of Covid with cancellation one year and a virtual meeting last year. I also wanted to refresh a few essential points.

We are a multidisciplinary society with the aim of bringing together all the disciplines in the care of the injured patient from “road-side to recovery”. From pre-hospital care to accident and emergency, neurosurgery, orthopaedic trauma, thoracic trauma, general surgery, vascular surgery, plastic surgery, urological surgery to rehabilitation.

The framework for the two days of the annual scientific meeting consists of oral presentations from you, keynote talks from invited “world-class” guest faculty, poster presentations, trade presentations, an annual general meeting of the society but above all this an exciting time meeting lots of like-minded people and net-working.

So what are you waiting for? Come to the meeting and present your work provided it is trauma related as I have indicated above. We are a friendly society and appreciate all the hard work you do in preparing and presenting your work. Chairing of the sessions is by BTS committee and the guest faculty so you get a good feedback.

Whether you are a consultant, a trainee, a staff member, a medical student, or a member of allied health professionals, you are all welcome to attend the meeting and to present your work. Hurry, as time is short (closing date 31st July 2022) as we wish to give you sufficient time to sort out your work schedule.

To enhance our meeting every year we have a theme and this year it is “Innovation in trauma”. The latest, the best that there is in managing trauma and saving lives and presented by the guest faculty. These include Nelson Olim (WHO head of simulation and the MCM programme); Herald Veen (WHO MCM Europe) WHO academy, creating global mass casualty programme; Professor Ian Pallister - high fidelity simulation; Major Max Marsden on artificial intelligence in trauma; Mark Wilson, neurosurgeon on the current status of cervical collars; Martin Griffiths on violence reduction lead NHS England; Steve Bush on beyond ATLS, future views; and Professor Janet Lord on the impact of trauma on the aging process

There is something for everyone. There are generous prizes for oral and poster presentations, including a prize for the best medical student presentation. There is also a prize for the best candidate interaction with trade.

Mark my words. You will have an unique experience. I look forward to seeing you there!

Ansar Mahmood
President of British Trauma Society



“There is something for everyone. There are generous prizes for oral and poster presentations, including a prize for the best medical student presentation. There is also a prize for the best candidate interaction with trade.”

Sponsors



4Trauma4Patients is an advice and support service provided by the major trauma centre at the Queen Elizabeth Hospital in Birmingham. The service aims to provide all round support to patients and their families. Whether it's access to benefits and welfare advice to alleviate financial pressure, getting legal assistance or practical and emotional help following a traumatic event, we're here to assist.



Galen is a privately owned global pharmaceutical company, established in 1968 and based in Northern Ireland that supplies medicines worldwide in the areas of pain management, dermatology and gastroenterology.

Galen is a proud member of the Almac Group of world-class companies in the pharmaceutical and biotech sectors. The Group is wholly owned by the McClay Foundation, a charitable institution, whose overarching aim is to make a meaningful improvement and advancement in human health.

Galen is the exclusive distributor of Pentrox (methoxyflurane) in the UK and Ireland.



Aguettant Ltd is a subsidiary of Laboratoire Aguettant, an international family owned company established in Lyon since 1903.

In today's challenging healthcare environment, Aguettant is committed to drive improvement in the safety and quality of emergency care. We are making a difference by designing products that help healthcare professionals deliver better, faster and cost-effective patient care. We provide ready-to-administer pre-filled syringes for bolus injection in anaesthesia and critical care and are proud to maintain a robust and consistent product supply thanks to our integrated manufacturing plants located in France.

Come and chat to our friendly and enthusiastic team today!



AtriCure's Cryo Nerve Block Therapy helps manage post-operative pain by temporarily blocking pain signals from peripheral nerves around the surgical site. The cryoSPHERE™ probe, designed specifically for intercostal nerve application, delivers Nitrous Oxide (N₂O) within the probe to quickly cool and freeze the nerve. Axons that send pain signals degenerate following freezing and start regenerating afterwards (Wallerian Degeneration), allowing for nerve function to resume over the course of several months. For more information, visit AtriCure.com/cryoSPHERE-probe or follow us on Twitter @AtriCure.



manufactures and markets world leading products for use in infection management in bone and soft tissue. Based in Keele, UK, it has global operations across Europe, USA, Canada, China and India. Biocomposites is a world leader in the development of innovative calcium compounds for surgical use. Its products target a broad spectrum of infection risks across a variety of specialities, including musculoskeletal infection, orthopaedics, trauma, spine, foot and ankle and podiatry. Biocomposites products are now used in over 100,000 procedures per annum and sold in more than 40 countries around the world. Please visit biocomposites.com to learn more.

Website:
www.biocomposites.com





BONESUPPORT™ sells CERAMENT, synthetic bone substitutes that promote and protect bone healing. There are three CERAMENT products; CERAMENT BONE VOID FILLER, CERAMENT G with gentamicin and CERAMENT V with vancomycin. All three products remodel into bone within 6-12 months, and CERAMENT G and V also elute either gentamicin or vancomycin to provide a high local concentration of antibiotic that protects bone healing. Our products are used when bone defects cannot heal by themselves, for example in trauma, fracture-related infection, chronic osteomyelitis and diabetic foot osteomyelitis. Please visit www.bonesupport.com for more information. BONESUPPORT and CERAMENT are registered trademarks of BONESUPPORT AB.



Autologous regenerative medicine has the potential to revolutionize patient care. Platelet rich plasma (PRP) plays a key role in regenerative medicine; growth factors within platelets amplify tissue repair and healing aided by other components in blood such as monocytes. PRP can be considered as a great normaliser for damaged tissue.

Tropocells PRP supplied by Medira is a market leading PRP system that provides an optimal PRP formulation for use in regenerative medicine. Used in almost two million cases without adverse event, Tropocells PRP is approved by global Regulatory bodies.

Contact Medira on 08002922014 or info@medira.co.uk for further information. www.medira.co.uk



Since 1980, Orthofix has evolved and grown to become one of the leading medical device companies with a spine and orthopedics focus in the world. Founded in Verona, Italy, and now headquartered in Lewisville, Texas, Orthofix has two strategic business units – Orthofix Spine and Orthofix Orthopedics – with more than 1,000 employees dedicated to developing, manufacturing and distributing our diverse product lines in more than 60 countries worldwide. Orthofix is proud to be recognized as the 8th Largest Orthopedic Device Company in the World by Medical Design & Outsourcing magazine – but above all else, Orthofix is committed to improving patients' lives and delivering innovative, quality-driven solutions that empower physicians and healthcare organizations to meet the needs of their patients every day.



NovoSorb BTM (Biodegradable Temporising Matrix) is a unique synthetic dermal scaffold that provides an effective reconstructive option for a range of complex wounds.

BTM is indicated for use in the management of wounds including partial and full thickness wounds, pressure ulcers, venous and diabetic ulcers, surgical wounds, trauma wounds, burns, and scar reconstruction.

This unique matrix is composed of a wound-facing biodegradable open cell foam, bonded to a non-biodegradable transparent sealing membrane. BTM enables the generation of a vascularised neodermis which provides a more robust foundation for wound reconstruction than grafting alone, limiting wound scarring and contracture.



It is our mission to alleviate pain and improve the quality of life for people around the world. With 90+ years of trusted leadership and proven expertise, our legacy continues to come to life today through our progressive culture of evolution and innovation. Stop by the Zimmer Biomet stand to see our latest range of products with Bactiguard Technology which offers the combination of a unique non-antibiotic-eluting, anti-infective coating with a clinically successful intramedullary nailing system. This pairing is designed to provide a promising solution for addressing implant associated infections and improving patient outcomes.



4 Trauma 4 Patients

We believe that no one should be left to deal with the aftermath of major trauma on their own.



WE ARE HERE

To listen,
To guide you,
To support you
and your loved ones
after serious injury.

4 Trauma 4 Patients is an advice and support service provided by the Queen Elizabeth Hospital, Birmingham for all those who have been affected by major trauma.



www.4trauma4patients.co.uk



0121 667 4204
0808 296 8554



Executive committee



Mr Ansar Mahmood
President

I am a Consultant in Trauma & Orthopaedic Surgery and the Major Trauma Service at the Queen Elizabeth Hospital Birmingham (QEHB), part of University Hospitals Birmingham, which is the largest trust in the UK. QEHB is the regional Major Trauma Centre for the City of Birmingham and one of the highest volume major trauma receiving units in the UK. We are currently also home to the largest hip fragility fracture unit in Europe. I am the research lead for major trauma at UHB and a Honorary Senior Clinical Lecturer at University of Birmingham. I have been a proud member of the British Trauma Society since 2003 and wish to see it continue to thrive and grow as an inclusive multi-disciplinary society associated with all those interested in Trauma at any level from student through to senior clinician/manager that is looking after injured patients.



Mr Stuart Matthews
Immediate Past President

Highly and widely experienced Trauma Surgeon and Educator used to working in austere as well as in cutting edge environments with French as a Mother Tongue and medicolegal expert for Personal Injury since 1989 and Clinical Negligence since 1994. Stuart's medical interests include the management of multisystem trauma and complex fractures. Consultant Surgeon in Major Orthopaedic Trauma at the Leeds University Teaching Hospitals, recently retired but still actively engaged in the trauma community.



Mr Amratlal D Patel
Trustee

I have had a life-long interest in trauma ever since my first DHS in Sheffield in 1979. My training was on the South-west rotational training scheme based in London and Surrey followed by one year on a trauma fellowship at Sunnybrook Medical Centre, Toronto with Dr Schatzker, learning about multiply injured patients and pelvic and acetabular surgery. I also learnt about the shoulder at Royal National Orthopaedic hospital in Stanmore. I have retired from clinical work. I am now Orthopaedic lead for Norwich Medical school.

I have been a member of British trauma Society (BTS) since its formation in 1988 and served as a president recently. I am now a trustee of BTS and remain involved with the running of the society.

I am very keen to encourage young surgeons to take up trauma, and although demanding it is very rewarding.



Professor Peter Giannoudis
Scientific Officer and President Emeritus

I work as the Professor (School of Medicine, University of Leeds) and Honorary Consultant at Leeds General Infirmary (LGI), a major teaching hospital serving a population in the region of 3.5 million. It is a major trauma unit, accepting complex trauma through its busy Accident and Emergency Department and from other hospitals in the region. I have successfully completed an AO Trauma Fellowship in Hannover, Germany and a Trauma Fellowship at Louisville, Kentucky USA.





Mr Rory Bonner
Treasurer

I am currently a clinical fellow in Plastic Surgery at the Canniesburn Unit, having completed Core Surgical Training in West Yorkshire. I completed a Trauma Surgery elective in Australia and enjoyed my time working as a Foundation Doctor at the major trauma centre in Leeds. I value my experiences in Medical Education and strive to encourage students to get involved in trauma care and academia. Since joining the committee I have stepped into the role of treasurer and look forward to this new challenge. As we have a multi-disciplinary focus, we are always keen to collaborate with other specialties and health technology experts. I can be contacted via our committee email: exec@britishtrauma.com



Mr Paul Andrzejowski
Communications and Web Officer Lead

One of the reasons I became a doctor was to work one day in Trauma. It's what I get up for in the morning and I always look forward to another day at the coal face! I got my first taste of Major Trauma as a student in Nottingham, and completed my Core Surgical Training in Yorkshire, with T&O experience at Bradford and the Major Trauma Centre in Leeds, where I am now an SpR on the Yorkshire and Humber North Rotation, and leading the FIT Study, looking into Functional Outcomes after Major Trauma - which should help to deepen our insight into what's most important for patient recovery following injury . It is an exciting privilege to help expand BTS and bring in people from all clinical backgrounds as part of increasing our reach with the new website... If anyone has any suggestions or would like to get involved I'd be very glad to hear more! Specialist Registrar in T&O



Sarafina Vatharkar
General Secretary

I am an Emergency Medicine Consultant at University Hospitals Birmingham. I have always been passionate about the care of the injured patient, within the trust I also work as a major trauma coordinating consultant. I feel privileged being part of the British Trauma Society.



Professor Ian Pallister
Director of Education

Ian's interest in trauma surgery began as a medical student in Thailand in 1987. This was consolidated working at the Birmingham Accident Hospital. After Trauma Surgery Fellowships in Denver and Oxford, and completion of an MD researching the inflammatory response to major trauma, he started work in Swansea, initially as Senior Lecturer, becoming Professor in 2012. After setting up the MSc Trauma Surgery Programme, Ian developed increasing cooperative links to the UK Defence Medical Services, including development of more complex trauma simulation models. His clinical work focuses on major trauma, pelvic and acetabular fractures, and Ortho-Plastic reconstruction of complex limb injuries. Recovery from these injuries and major trauma remain his main research interests. Ian is also heavily involved in education, helped establish the Damage Control Orthopaedic Trauma Surgery Course and is President of AOUK&I. Professor of Trauma and Orthopaedic Surgery at Swansea University





Ms Justine (JJ) Lee
Deputy Director of Education

Dr Justine Lee (JJ) is a Specialist in Major Trauma at the Queen Elizabeth Hospital, Birmingham (QEHB), with a keen interest in trauma care, mass casualty management, multi-disciplinary training and simulation-based education and course design.

"My aim is to create a hub of knowledge in the management of polytrauma patients, hosted through the BTS website and taught through our workshops and conferences. We have an incredible multidisciplinary team making up the Educational Sub-committee. If you're interested in joining us, please get in touch. I'm looking forward to seeing you all at the Annual Scientific Meeting and at the pre-Conference Workshop! Please say Hello!"



Mr Oliver Dixon
Membership Secretary

My interest in trauma started while working in the Cardiothoracic Unit in Sheffield as a foundation year doctor. Having recently completed core surgical training, I am working as a trust grade registrar in Orthopaedics and plan to apply to ST3 T&O this coming year. My role as member secretary involves managing new members to BTS as well as keeping our member database up to date. Please feel free to get in touch if you have any questions!



Sub-committee



Jamie Large
Student Liaison Officer

FY1 Doctor, Kingston Hospital NHS Foundation Trust



Beatrice Ho
Education Sub-committee

Specialty Trainee Orthopaedics, Plymouth



Mycroft Helliwell-Ewen
Education Sub-committee

Junior Clinical Fellow, QE Major Trauma Service



Austin Gomindes
Education Sub-committee

Core Surgical Trainee,
Coventry and Warwickshire



Rahul Bagga
Education Sub-committee

Core Surgical Trainee,
University Hospitals Birmingham NHS Trust



Umar Said
Communication sub-committee

Core Surgical Trainee West Midlands



Umar Rehman
Communication Sub-committee

Core Surgical Trainee, North West London NHS Trust



Ashuvini Mahendran
Social Media Sub-committee

Core Surgical Trainee, Hull Royal Infirmary





A synthetic bioabsorbable matrix

Facilitates dermal repair by acting as a scaffold to generate a neodermis.

- Robust in the presence of infection¹
- Designed to minimise scarring and contracture²
- Generate a neodermis over exposed bone and tendon^{3,4}

Discover more at:
[PolyNovo.com](https://www.polyново.com)

For a free evaluation:
info@polynovo.com

Malcolm
Salvaged foot after crush trauma



Keynote speakers

Mr Martin Griffiths



Talk: "Recent advances and innovative practice"

Mr Griffiths is a consultant Trauma and Vascular Surgeon at the Royal London Hospital, he is the first clinical director for violence reduction. Mr Griffiths has spent over 15 years as an influential advocate for violence control, including visiting schools to warn pupils of the dangers of knife and gun crime. Mr Griffiths is passionate about medical education and teaches undergraduates at both Barts and the London and Brighton University.

Professor Ian Pallister



Talk: "High fidelity trauma simulation advances"

Prof Pallister is a clinical academic trauma surgeon, his interest in trauma surgery began as medical student in student in Thailand in 1987. This was consolidated working at the Birmingham Accident Hospital. After Trauma Surgery Fellowships in Denver and Oxford, and completion of an MD researching the inflammatory response to major trauma, he started work in Swansea, initially as Senior Lecturer, becoming Professor in 2012. His clinical work focuses on major trauma, pelvic and acetabular fractures, and Ortho-Plastic reconstruction of complex limb injuries. Recovery from these injuries and major trauma remain his main research interests. Professor Pallister is also heavily involved in education, helped establish the Damage Control Orthopaedic Trauma Surgery Course and is President of AOUK&I.

Professor Matthew Costa



Talk: "Update on key orthopaedic research and what it has changed"

Prof Costa was appointed Professor of Orthopaedic Trauma, University of Oxford in 2015. He was previously Professor of Trauma and Orthopaedics at University of Warwick. Matt is also Honorary Consultant Trauma Surgeon at the John Radcliffe Hospital, Oxford.

Matt's research interest is in clinical and cost effectiveness of musculoskeletal interventions and he is Chief Investigator for a series of randomised trials and associated studies supported by grants from the UK National Institute of Health Research. His work has been cited widely, and informs many guidelines from the National Institute for Health and Care Excellence (NICE).

Professor Janet Lord



Talk: "The impact of trauma and critical illness on the ageing process"

Prof Lord is the Director of the MRC-Versus Arthritis Centre for Musculoskeletal Ageing Research and Professor of Cell Biology.

Her research focusses on the dysregulation of immunity in old age, in particular the decline in neutrophil function and how this compromises the response to infection and tissue injury. She aims to understand the mechanism involved and to develop novel therapies to improve immunity in older adults.



Dr Steven Bush



Talk: "The future of ATLS and how you can help shape it"

Dr Bush graduated from Oxford University and the Royal London Medical School before pursuing Emergency Medicine. Dr Bush is a consultant in Emergency Medicine working at Leeds Teaching Hospital. He is the medical director for operations unplanned care chair of the ATLS European association. He has loved teaching ever since his days as a camp counselor. His favourite part of the job is meeting new people, all of whom have a shared desire to find new ways to care for patients.

Dr. Bush represented the United Kingdom in Archery at the European Student Games. He also is an avid X-Box gamer. His career has rubbed off on his children, as his son attends his alma mater Oxford University, and his daughter is currently in medical school.

Major Max Marsden



Talk: "AI in trauma"

Major Marsden trained at Imperial College London . He was commissioned into the British Army while at medical school and deployed as a General Duties Medical Officer to Afghanistan in 2012. In Afghanistan he realized he wanted to pursue a career looking after the injured patient. After obtaining a training number in General Surgery he took three years out of programme for research at the Centre for Trauma Sciences.

He has completed his PhD which examines the impact of a machine learning system on effective decision making in pre-hospital trauma. The research was conducted with the London's Air Ambulance and several Major Trauma Centres. His clinical interests include the management of haemorrhage and blood replacement.

Professor Mark Wilson



Talk: "Update in the field of Neurosurgery in Trauma"

Prof Wilson is dual qualified in Neurosurgery and Pre-Hospital Care. Professor Wilsons specialist areas include acute brain injury (mostly traumatic brain injury) and its very early management. His main research uses hypoxia as a model of brain injury in order to improve our understanding of basic physiological principals and subsequently its use in the intensive care setting. He has worked extensively overseas (India, Nepal, South Africa, Australia, a researcher for NASA and as an expedition doctor on Arctic and Everest expeditions).

Dr Nelson Olim



Talk: "Development of WHO Academy, creating Global Mass Casualty programme"

Dr Olim graduated from the University of Lisbon before pursuing General Surgery training. Dr Olim has been on numerous missions including: Indonesia, East Timor, Kosovo, South Sudan. He is a navy medical officer and the former field hospital medical coordinator of the Portuguese Civil Protection. He has served as a Senior Surgeon for the International Committee of the Red Cross and is currently the head of simulation learning for the World Health Organization Academy.

Dr Harald Veen



Talk: "Development of WHO Academy, creating Global Mass Casualty programme"

Dr Veen, born in Holland and trained in General, Vascular and Trauma Surgery. He has served as the Chief Surgeon of the International Committee of the Red Cross for which he was responsible for all the surgical programs of the organization. He has been on over 30 medical missions in war zones around the world. He currently serves as a consultant to the World Health Organisation providing input into the emergency medical team project of the WHO.



Tropocells® PRP

Setting New Standards for PRP Systems



Platelet-Rich Plasma (PRP) Injection Therapy is a safe, non-surgical procedure. It offers relief and healing to athletes, people suffering from chronic pain/arthritis, and active individuals who endure pain from overuse or a past injury. In addition to alleviating pain, this treatment decreases chronic inflammation and increases mobility.

The Tropocells® PRP system consistently provides an optimal PRP formula:

- No RBCs (which are toxic to cartilage and can induce a painful inflammatory flare)
- Low neutrophils (neutrophils promote inflammation and tissue breakdown)
- High number of monocytes (the cells that encourage healing)

This high-quality system has high platelet yields so less blood needs to be drawn for treatment. With an easy ability to increase platelet dose up to 8 fold above baseline or more, Tropocells® may be the solution for a single injection PRP treatment.

Thanks to a unique gel-barrier separation technology, Tropocells® PRP can reliably deliver the optimal PRP formula of 100% removal of RBCs, 93% removal of neutrophils, while preserving the monocytes and lymphocytes. This is an innovative and technological breakthrough that has made Tropocells® PRP the new gold standard for PRP systems.



WEDNESDAY 23rd November 2022

1st day Annual Scientific meeting of British Trauma Society

08:30-09:30	Registration and Refreshments
09:30-09:45	Conference welcome by British Trauma Society President Mr Ansar Mahmood University hospital Birmingham UK
09:45-10:15	KEYNOTE LECTURE 1 Martin P Griffiths CBE DL FRSA FRCS Consultant Trauma and Vascular Surgeon at the Royal London Hospital and National Clinical Director for Violence Reduction NHS England – London Region <i>“Gun and knife crime - are we losing the battle?”</i>
	Oral presentations: Session 1
10:15-10:20	<i>049-“ In patients admitted to a category one major trauma centre, what factors are associated intensive care unit admission or surgical intervention requirement?”- James Chapman ST3</i>
10:20-10:25	<i>048-“ Is surgery more likely in trauma patients with abdominal injuries when combined with chest and pelvic trauma?”- James Chapman ST3</i>
10:25-10:30	<i>071-“ The effectiveness of pre-hospital subcutaneous continuous lactate monitoring in adult trauma patients, compared to standard methods of guiding resuscitation: a systematic review”-Dr Jamie Scriven FY1</i>
10:30-10:35	<i>050-“ What are the key factors that affect team decisions to activate a silver trauma call, eg: fall from standing?”- Lan Tran Final Year Med student</i>
10:35-10:45	Q&A

10:45-11:15	Refreshment break-exhibition area
	Oral Presentations: Session 2
11:20-11:25	<i>020-" An Evaluation of Pelvic Binder Placement in Ireland"-Nicolas Christodoulou SpR T&O</i>
11:25-11:30	<i>077-" Clinical predictors for acute intracranial abnormalities in patients presenting to the emergency department following a head injury: a retrospective observational study"-Corinna Chidora Ekebuisi FY1</i>
11:30-11:35	<i>021-" Soft tissue reconstruction of combat related injuries effecting the lower limb, is a time target realistic? A systematic review and meta-analyses"-Umar Rehman CT1 General Surgery</i>
11:35-11:40	<i>098-"Exploring the Effectiveness of Artificial Intelligence, Machine Learning and Deep Learning in Trauma Triage: A Systematic Review and Meta-analysis"-Oluwasemilore Adebayo medical student</i>
11:40-11:50	Q&A
11:55-12:20	<p>KEYNOTE LECTURE 2</p> <p>Professor Ian Pallister - Professor of Trauma Surgery, Swansea, Wales</p> <p><i>"High fidelity trauma simulation"</i></p>
	Oral Presentations: Session 3
12:25-12:30	<i>082-" Assessment of early airway management in severe traumatic brain injury patients at a Level I Trauma Centre in South India"- Ajish Sam George CT1</i>
12:30-12:35	<i>023-"A five-year analysis of traumatic deliberate self-harm admissions to a Major Trauma Centre: does sex matter?"- Laura Zagarella Medical student</i>

12:35-12:40	012 <i>"Vancomycin Resistance Enterococcus and Implications to Trauma and Orthopaedic Care"</i> Ali Mofidi Consultant Trauma & Orthopaedic, UK
12:40-12:45	100- <i>" The Effect of the COVID-19 Pandemic on Suicidal Attempt Major Trauma Secondary to Suicidal Intentions: Level 1 UK Major Trauma Centre experience"</i> -Jafar Shakir CT1
12:45-12:55	Q&A
13:00-14:15	Lunch-time symposium - <i>"4Trauma Case presentations"</i> Lunch - Exhibition area Justine (JJ) Lee Major Trauma Specialist Doctor at Queen Elizabeth Hospital NHS Trust Birmingham, England, United Kingdom
14:15-14:40	KEYNOTE LECTURE 3 Professor Matthew Costa- PhD, FRCS, FMedSci. Professor of Orthopaedic Trauma Surgery at the University of Oxford and Honorary Consultant Trauma Surgeon at the John Radcliffe Hospital, Oxford. <i>"An update on key orthopaedic research and what it has changed."</i>
	Oral Presentations: Session 4
14:40-14:45	087- <i>" A systematic review of elderly-specific criteria for pre-hospital triage following trauma"</i> -Usama Rahman ST2
14:45-14:50	031- <i>" Nottingham Hip Fracture Score: is it a useful predictor of 30-day mortality?"</i> - Prateek Gupta Speciality doctor T&O
14:50-14:55	124- <i>" Management and Outcomes of Neck of Femur Fracture Patients Presenting on Direct Oral Anticoagulants"</i> -Caroline Tijole Selvakumar FY3

14:55-15:00	094-“ <i>A Protocol for Venous Thromboembolism (VTE) Prophylaxis in patients with Traumatic Brain Injury-Philip J. O’Halloran^{1,2} Consultant Neurosurgeon</i>
15:00-15:10	Q&A
15:10-15:35	<p>KEYNOTE LECTURE 4</p> <p>Professor Janet M Lord FMedSci PhD, BSc Institute of Inflammation and Ageing Professor of Cell Biology Director of the MRC-Versus Arthritis Centre for Musculoskeletal Aging Research University of Birmingham Research Labs Queen Elizabeth Hospital Birmingham UK</p> <p><i>“The impact of trauma and critical illness on ageing processes”</i></p>
15:35-15:40	<p style="text-align: center;">Oral Presentations: Session 5</p> <p>045-“ <i>Mid-term Clinical and Functional Outcomes of Fibula Nail Fixation for Unstable Ankle Fractures: a 5-year experience”-Joe Barrett-Lee ST6</i></p>
15:40-15:45	046-“ <i>Comparison of Outcomes of Fibula Nailing for Unstable Ankle Fractures in Patients Under and Over 65 Years”-Muatasim Elmahi Foot and Ankle Senior fellow</i>
15:45-15:50	056-“ <i>Evaluating the Effectiveness of Osseointegration for Traumatic Lower Limb Amputations: A narrative review”-Oluwasemilore Adebayo, Final year medical student</i>
15:50-15:55	102-“ <i>Can we improve quality of post-operative instructions to ensure safe management of trauma patients? Yes, we can!”- Stephanie Potten, Core clinical fellow T&O/Anatomy demonstrator</i>

15:55-16:05	Q&A
16:05-16:25	Refreshment break-Exhibition Area
	Oral Presentations: Session 6
16:30-16:35	<i>069-" Butterflies and Bladders: Exploring the severity of pelvic and urological injuries in motorcycle trauma"- Oliver Goulden Trauma Fellow (Core)</i>
16:40-16:45	<i>104-" James Lind Alliance Major Trauma Priority Setting Partnership"-Chris Bretherton T70 SpR</i>
16:45-16:50	<i>070-" Referral for organ donation in end-of-life patients"-Olivia Edwards 4th Year Medical student</i>
16:50-17:00	Q&A
17:00-17:25	<p>KEYNOTE LECTURE 5 (virtual)</p> <p>Mr Stephen Bush MA (Oxon) FRCS FRCEM</p> <p>Medical Director Operations</p> <p>Chair ATLS European Association</p> <p>Consultant in Emergency Medicine</p> <p>Leeds Teaching Hospitals Trust</p> <p><i>"ATLS, the future and how you could shape it"</i></p>
18:00-19:30	Refreshments and Annual General Meeting of British Trauma Society, all welcome
	Faculty dinner

THURSDAY 24TH November 2022

2ND day Annual Scientific meeting of British Trauma Society

08:30-09:30	Registration and refreshments
09:35-10:00	<p>KEYNOTE LECTURE 6</p> <p>Max Marsden Major, Royal Army Medical Corps General Surgery Registrar (ST6) and Honorary Clinical Lecturer Lewisham And Greenwich NHS Trust.</p> <p><i>“Artificial Intelligence in Trauma Care. Decision making in identifying the high-risk patient and bleeding patient”</i></p>
	Oral Presentations: Session 7
10:00-10:05	<i>003-“ A simple technique for centralisation of distal femoral nail to avoid anterior femoral impingement and perforation”-Parag Panwalkar Senior clinical fellow T&O</i>
10:05-10:10	<i>081-“ Bone transport vs Masquelet for infected non-union fracture femur: do we have an answer?”- Anubhav Malhotra, Specialist Registrar, Trauma & Orthopaedics</i>
10:10-10:15	<i>080-“ Augmentative plating (while retaining intramedullary nail) for treatment of aseptic femoral non-unions: a tertiary centre experience”-Anubhav Malhotra SpR T&O</i>
10:15-10:20	<i>116-“ Junior review of paediatric patients: a traumatic assessment” Luke Jordan Turner Paediatric Surgery CDF Clinical fellow/SHO and Cliona Meenan</i>
10:20-10:30	Q&A
10:30-11:00	Refreshment break-Exhibition area

<p>11:05-11:30</p>	<p>KEYNOTE LECTURE 7</p> <p>Mark Wilson OBE</p> <p>PhD MB BChir FRCS (SN) FIMC MRCA FRGS</p> <p>Consultant Neurosurgeon (Imperial College NHS Trust)</p> <p>Pre-Hospital Care Specialist (Kent Surrey Sussex Air Ambulance)</p> <p>Professor of Brain Injury, Imperial College London</p> <p><i>"An update on cervical spine protection in trauma".</i></p>
	<p>Oral Presentations: Session 8</p>
<p>11:35-11:40</p>	<p>005-<i>" Tlso (Thoraco lumbar sacral orthosis) brace for spine fractures, what is the evidence and do patients use them?"- Sonu Mehta T&O registrar</i></p>
<p>11:40-11:45</p>	<p>120-<i>" An Evaluation of the Effectiveness of the Ultrasonic Bone Stimulator in a Major Trauma Centre"-Louise Chapman FY2</i></p>
<p>11:45-11:50</p>	<p>029-<i>" Clinical outcomes following major trauma for patients with a diagnosis of depression: a large UK database analysis"-Jamie Large FY1</i></p>
<p>11:50-11:55</p>	<p>110-<i>" An audit Of Code Red Activations In Major Trauma Patients At A Level One UK Major Trauma Centre"-Benjamin James Harris 5th Year med student</i></p>
<p>11:55-12:05</p>	<p>Q&A</p>
	<p>Oral Presentations: Session 9</p>
<p>12:05-12:10</p>	<p>024-<i>" Lateral versus Crossed K-wires for Paediatric Supracondylar Fractures Have Similar Results in Terms of Radiological Stability"-Bakhat Yawar CT2</i></p>
<p>12:15-12:20</p>	<p>109-<i>" Systematic review for the antibody response of early vs delayed administration of pneumococcal polysaccharide vaccine after major trauma". Dr Abdullahi Mohamed SHO</i></p>

12:20-12:25	076-“ Early complication profile of Femoral Neck System (FNS): Is peri-implant sub-trochanteric fracture an associated risk with the implant or implantation technique?”- Mr Uday Mahajan Higher T&O Registrar/Junior specialist doctor
12:25-12:35	Q&A
12:40-14:00	Lunch-Exhibition area
13:00-13:45	Lunchtime Symposium Galen Pentrox “Green Whistle” Case presentations Sarah Fetton Lead ENP Emergency Department John Radcliffe Hospital Oxford
14:00-14:50	DUAL KEYNOTE LECTURES 8 & 9 Dr Olim University of Lisbon General Surgery Currently Head of simulation learning for the World Health Organization Academy. World Health Organization Academy, Lyon, France Pre-Hospital Trauma, War Surgery and Mass Casualty Management (MCM) Dr Veen, trained in General, Vascular and Trauma Surgery. Chief Surgeon of the International Committee of the Red Cross. Currently Consultant to the World Health Organization providing input into the emergency medical team project of the WHO “Creating a global mass casualty management programme”
14:50-14:55	Oral Presentations: Session 10
	044-“ Pilot implementation of a T&O-led outpatient pathway utilising Bier block regional anaesthesia for distal radius fracture manipulation”-Anisha Tolat CT1
14:55-15:00	064-“ Outcomes in repair of traumatic rotator cuff tears following dislocation: A comparative cohort study versus traumatic tears not involving dislocation”-Nikita Minhas CT1
15:00-15:05	007-“ A technique for planning for the application of a buttress plate in the medial tibial plateau using the pre-operative CT scan”-Parag Panwalkar Senior Clinical fellow

15:05-15:10	118-“ Is There A Difference In Mortality Between Operative And Non-Operative Management Of Tibial Fractures In The Elderly Population?”- Umar Said CT1 T&O
15:10-15:20	Q&A
15:20-15:40	Refreshment break-Exhibition area
	Oral Presentations: Session 11
15:40-15:45	086-“ The Prevention of Conflict-Related Ocular Injuries”-Samatar Osman 5th Year medical student
15:45-15:50	083-“ Identifying activation criteria for Right Turn Resuscitation in UK civilian Code Red trauma patients at a Major Trauma Centre-Jake Kilmartin 5th Year medical student
15:50-15:55	112-“ A narrative of Code Red Major Trauma Patients At A Level One UK Major Trauma Centre”-Benjamin James Harris 5th Year med student
15:55-16:00	114-“Assessment of CT Scan reports as per standardized reporting guidelines”-Dr Utkarsh Sharma ST1
16:00-16:10	Q&A
	Oral Presentations: Session 12
16:10-16:15	117-“ Management of Open Fractures” - Plastic Surgery and Orthopaedic Surgery Trainee Survey-Kin Seng Tong Plastic surgery registrar
16:15-16:20	122-“ Comparative Study of Trauma Laparotomies Before and After Establishment of a Major Trauma Centre”-Francis Lee CT2

16:20-16:25	126-“Improving the efficiency of Plastics Surgery Services at a UK Major Trauma Centre through a local anaesthetic pathway: Assessing the implementation and sustainability of a value-based healthcare model”-Djamila Rojoa Plastic Surgery registrar
16:25-16:30	108-“ Can minimally invasive surgery be maximally effective in abdominal trauma?”- Athanasius Ishak CT1
16:30-16:35	Q&A
16:35-16:50	Presentation of prizes and closing remarks



POSTER SESSION 1

Wednesday 23rd November 2022

Abstract number	Poster Board Number	Title	Authors	Co-authors
103	1	Functional and Radiological Outcomes of Unstable Proximal Femur Fractures Fixed With Anatomical Proximal Locking Compression Plate	Aakaash Venkatesan Senior clinical fellow in Trauma and Orthopaedics Grange University Hospital, Newport , Wales	Dr.Vamsi Krishna, Sundaram Medical Foundation -chennai, India Konrad Wronka
38	2	Re-Audit of Intraoperative Tourniquet Use	Anoopama Ramjeeawon Core Surgical Trainee CT1 Norfolk and Norwich University Hospital	George Hourston, Claire Edwards Norfolk and Norwich University Hospital
35	3	Clinical and functional outcomes of distal tibial fixation with spoon type/ shaped titanium plate: A case series	Imran Ali Shah Cosultant orthopaedic and trauma surgeon AO Hospital	AO Hospital: Zainab Khan, ghufuran Qidwai, Saad Absar, Junaid Shah, Umer Butt Rehman Medical institute: Zeeshan Khan
51	4	Trends in Mortality in Hip Fracture Patients during the COVID-19 Pandemic: A Single-Centre Study	Bakhat Yawar Registrar ST3 Trauma and Orthopaedics Royal Victoria Hospital, Belfast	Bakhat Yawar, Callum Auld, Jennifer Salmon, Ali Yawar, Mohammad Noah Khan, Hassan Abdulrahman, Adriana Sapumohotti, Eimhear Duffy, Seanna Meehan, Aoife McSorley, Curtis Neely, Ryan Flynn, Hushil Sandhu, Sami Mustafa, Ammal Imran Qureshi, Ayeisha Asim, Andrew McAdam, Brian Hanratty
52	5	Shorter period of Inpatient Stay in Hip Fracture Patients During the COVID-19 Pandemic	Bakhat Yawar Registrar LAT ST3 Trauma and Orthopaedics Royal Victoria Hospital, Belfast	Jennifer Salmon (Royal Victoria Hospital, Belfast), Ali Yawar Aoife McSorley Seanna Meehan Callum Auld Hassan Abdulrahman Mohammad Noah Khan Ammal Imran Qureshi Ryan Flynn Curtis Neely Ayeisha Asim Sami Mustafa Andrew McAdam (Altnagelvin Area Hospital),

119	6	Junior Trainee Knowledge on Essential Groin Anatomy	Daniel Dolan Plastic Surgery and Burns Core Surgical Trainee 1 Canniesburn Plastic Surgery and Burns Unit	Rory Bonner, Emma Wauchope, Valentine Mberu, Nikolaos Arkoulis Canniesburn Plastic Surgery and Burns Unit
130	7	Non-operative management of closed 5th metacarpal neck fractures: A systematic review and meta-analysis of Randomised Control Trials	Djamila Rojoa Plastics Surgery Registrar Clinical Fellow (SpR) St Mary's hospital, Imperial College NHS Trust	Zeinab Hazura Bazeer, Sultan Hussein, Nicholas Cereceda-Monteoliva, Firas Raheman - lister Hospital, Stevenage; Zeinub Hazura Bazeer, Sultan Hussein, Nicholas Monteoliva - GSTT
61	8	Chest Drain Insertion LocSSIP Checklist	Dr Moayed M Alsharary Trauma and Orthopaedic Trainee University Hospitals Birmingham	N/A
90	9	The safe use of hyperbaric oxygen therapy in carbon monoxide poisoning: a case series in Singapore General Hospital	Christina Png Medical Officer Singapore General Hospital	Dr SEE Hooi Geok, Dr CHONG Si Jack, Prof TAN Kok Chai, A/Prof Janna JOETHY Singapore General Hospital

106	10	Experience in Surgical Fixation of Three- and Four-Part Proximal Humeral Fractures Using the Proximal Humeral Interlocking System Plate	<p>Mohamed Elbeshbeshy</p> <p>Junior Clinical Fellow SHO</p> <p>Huddersfield Royal Infirmary</p>	<p>Ahmed Y Saber 1, Umar N Said 2, Abdelmonem H Abdelmonem 3, Hassan Elsayed 4, Mohamed Taha 4, Walid Hussein 5, Khalid Al-Hashimi 6, Omar El-Omar 7, 1Trauma and Orthopaedics, Calderdale and Huddersfield National Health Service (NHS) Foundation Trust, Huddersfield, GBR.</p> <p>2Trauma and Orthopaedics, Huddersfield Royal Infirmary, Huddersfield, GBR.</p> <p>3Trauma and Orthopaedics, West Hertfordshire Hospitals National Health Service (NHS) Trust, Watford, GBR.</p> <p>4Trauma and Orthopaedics, Rotherham National Health Service (NHS) Foundation Trust, Rotherham, GBR.</p> <p>5Trauma and Orthopaedics, Birmingham Children's Hospital, Birmingham, GBR.</p> <p>6Vascular Surgery, Royal Shrewsbury Hospital, Shrewsbury, GBR.</p> <p>7Trauma and Orthopaedics, King's Mill Hospital, Nottinghamshire, GBR.</p>
34	11	A novel anaesthetic technique for Fracture neck of femur surgery	<p>Prateek Gupta</p> <p>Speciality Doctor T&O</p> <p>George Eliot Hospital NHS Trust, Nuneaton</p>	<p>Ravindra Mahajan, Sundas Butt, Kishore Dasari</p> <p>George Eliot Hospital NHS Trust, University Hospital Coventry and Warwickshire.</p>
30	12	The implementation of an Ankle Fracture Fixation Pathway to reduce hospital bed occupancy	<p>Prateek Gupta</p> <p>Speciality Doctor T&O</p> <p>George Eliot Hospital NHS Trust, Nuneaton</p>	<p>Kishore Dasari</p> <p>George Eliot Hospital NHS Trust, Nuneaton</p>
32	13	Root Cause Analysis: Post-Operative Hip Hemiarthroplasty Wound Infections	<p>Prateek Gupta</p> <p>Speciality Doctor T&O</p> <p>George Eliot Hospital NHS Trust, Nuneaton</p>	<p>Sundas Butt, Kishore Dasari, Emad Mallick</p> <p>George Eliot Hospital NHS Trust, University Hospital Coventry and Warwickshire.</p>

33	14	Hip Precautions on Discharge Following Hemiarthroplasty for Neck of Femur Fractures: Survey	Prateek Gupta Speciality Doctor T&O George Eliot Hospital NHS Trust, Nuneaton	Sundas Butt, Kishore Dasari, Emad Mallick George Eliot Hospital NHS Trust, University Hospital Coventry and Warwickshire.
6	15	Orthopaedic Eponyms: A tool of the past	Edward Perera Junior Clinical Orthopaedic Fellow Senior House Officer Imperial College Healthcare NHS Trust	Akib Khan (Imperial College Healthcare NHS Trust), Khalid Sarraf (Imperial College Healthcare NHS Trust), Dominic Spicer (Imperial College Healthcare NHS Trust)
115	16	Does the grade of operating surgeon affect the 30 day mortality of patients with a high Nottingham Hip Fracture Score?	Faye Alexandra Loughenbury Orthopaedic registrar ST7 Hull Royal Infirmary	Miss Breanna Winger Hull Royal Infirmary
67	17	An audit of extra-capsular neck of femur fracture fixation against NICE guidelines	Fazal Hassan Registrar Western Health and Social Care Trust	Mr B Hanratty, Mr Callachand Western Health and Social Trust
65	18	A single institute experience of managing spinal epidural abscess (SEA)	Fazal Hassan Registrar Belfast Health and Social Care Trust	Mr Nial Eames
66	19	An audit on safe use of intraoperative tourniquets in Trauma and Orthopaedics Surgery	Fazal Hassan Registrar Belfast Health and Social Care Trust	Mr Jim Sales, Mr R Mohsin Belfast Health and Social Care Trust
39	20	Outcomes of Fibula Nail Fixation for Open Ankle Fractures in Elderly Patients	Humayoon Zaheen T&O Trainee James Cook University Hospital	Mr Tim Bonner James Cook University Hospital
41	21	Traumatic retrosternal hematoma leading to cardiac arrest: A Case Report	Tae Wook NOH Professor Clinical Assistant Professor Korea University Guro Hospital	none

40	22	Traumatic focal aortic dissection of Sinus of Valsalva: A Case Report	Tae Wook NOH Professor Clinical Assistant Professor Korea University Guro Hospital	none
14	23	Do The Current Pre-deployment Training Programmes Of Military Surgeons Enable Them To Perform Effectively On Placement To Active Warzones?	Jaqueline Howard Medical Student University of Liverpool	Dr I Sahgal, Clinical Fellow Liverpool Medical School
99	24	Distal femoral replacement vs fixation of fragility distal femoral fractures using a standardised perioperative protocol in a district general hospital	James Murrell Core Surgical Trainee CT1 University Hospitals Birmingham	Nikhil Khadabadi, Gunther Selzer, Thomas Moores, Fahad Hossain Walsall Manor Hospital
43	25	Professional Motor sporting Events and Traumatic Injury: is it just a Major Trauma Centre Problem?	James Chapman Registrar in Trauma and Orthopaedics ST3 Liverpool University Hospitals NHS Foundation Trust and University of Liverpool	Abigail Durston - Department of Trauma and Orthopaedics, Royal United Hospital, Bath. Lyndon Mason - Liverpool Orthopaedic and Trauma Service, Liverpool University Hospitals NHS Foundation Trust School of Medicine, Faculty of Health and Life Sciences, University of Liverpool
47	26	Hindfoot Nailing Versus Fibula Nailing for Unstable Ankle Fractures in Patients Over 65 Years	Joe Barrett-Lee Specialist registrar ST6 University Hospital Southampton	Joshua Enson Ahmed Ahmed Rayyan Jamal Muatasim Elmahi Syed Anjum (university hospital southampton)
16	27	The Role of Realistic Simulation in Mass Casualty Damage Control Surgery Trauma Course	Jordan Cazier Junior Doctor FY2 Prince Charles Hospital, Merthyr Tydfil	Prof Ian Pallister, Cardiff & Swansea Medical Schools. Surg Cdr Chris Hand, Portsmouth University Hospital Trust. Col Paul Parker, Queen Elizabeth Hospital, Birmingham.
95	28	Cannot attend		

	29	Spare-Part Surgery in Hand Trauma	Nicholas Cereceda-Monteoliva GUY'S AND ST THOMAS' NHS FOUNDATION TRUST) <nicholas.cm@nhs.net>	
	30	The Role of Artificial Intelligence (AI) in the Assessment, Monitoring and Prediction in Burns: A Systematic Review	A S Chaudry1, Academic foundation year two Usama Khan2 1 Nottingham University Hospitals NHS Trust, Hucknall Road, Nottingham, NG5 1PB	H Khan1, T Eldahshoury3, Z Y Wong1 2 Department of Trauma and Orthopaedics, Great Western Hospital, Marlborough Rd, Swindon SN3 6BB 3 Plastic Surgery Department, Nottingham University Hospitals NHS Trust, Hucknall Road, Nottingham, NG5 1PB
131	31	Localised Insulin Administration for Wound Healing in Non-Diabetic Adults: A Systematic Review and Meta-analysis of Randomised Controlled Trials	Zunira Areeba Bhuiyan medical student University of Birmingham	Oluwasemilore Adebayo, Zubair Ahmed University of Birmingham
001	32	A Descriptive Study of Trauma case load during the COVID-19 Pandemic in a Major Trauma Centre in the United Kingdom	Kahlan Al Kaisi ST6 Specialist Registrar in Trauma & Orthopaedics The Robert Jones and Agnes Hunt Orthopaedic Hospital	Kieran Bentick, Georgeios Orfanos- Robert Jones & Agnes Hunt orthopaedic hospital. Bishoy Youssef, Anuj Jaiswal, Ashique Ali (Royal Stoke University Hospital)
002	33	The Effect of Covid-19 Pandemic on the Care of Fragility Hip Fracture Patients in the United Kingdom. A Case Control Study in a Major Trauma Centre.	Kahlan Al Kaisi ST6 Specialist Registrar in Trauma & Orthopaedics The Robert Jones and Agnes Hunt Orthopaedic Hospital	Georgios Orfanos (The Robert Jones and Agnes Hunt Orthopaedic Hospital). Anuj Jaiswal, Justin lim, Bishoy Youssef (Royal Stoke University Hospital)

POSTER SESSION 2

Thursday 24th November 2022

Abstract Number	Poster Board Number	Title	Authors	Co-authors
010	1	The Effect of Covid-19 Pandemic on the Care of Fragility Hip Fracture Patients in the United Kingdom. A Case Control Study in a Major Trauma Centre.	Kahlan Al Kaisi ST6 Specialist Registrar in Trauma & Orthopaedics The Robert Jones and Agnes Hunt Orthopaedic Hospital	Georgios Orfanos: The Robert Jones and Agnes Hunt Orthopaedic Hospital/ Oswestry, UK Anuj Jaiswal: Royal Stoke University Hospital/ Stoke on Trent, UK Justin Lim: Royal Stoke University Hospital/ Stoke on Trent, UK Bishoy Youssef: Royal Stoke University Hospital/ Stoke on Trent
097	2	Tipping Point: A comparative study of clinical outcomes of tuft and shaft fractures of the distal phalanx in finger tip injury	Kanchana Madhubashini Niruttan SPR- Burns and Plastics Surgery Queen Elizabeth Hospital Birmingham	Shahd Nour, Hadyn Kankam, Darren Chester, Jill Webb, Paul Malone-Queen Elizabeth Hospital Birmingham (All)
019	3	Intracranial haemorrhage in patients on direct oral anticoagulants versus traditional anticoagulants and antiplatelets following head injury	Kaso Ari Educational Clinical Fellow F3 Norfolk and Norwich University hospital	Kaso Ari, Ranu Baral, Stephanie Holness, Francesca Li, Edwin Li Ping Wah-Pun Sin, Hienrich Hollis Norfolk and Norwich University Hospital
078	4	Tourniquet Compliancy in Trauma Surgery	Miss Kate Nicholls Orthopaedic Registrar Dorset County Hospital	Despoina Chatzopoulou, Nicholas Savva Dorset County Hospital
127	5	Does clinical photography have a role in the care of trauma patients?	Kin Seng Tong Plastic research surgery registrar Pinderfields Hospital	Sharmila Jivan Pinderfields Hospital
129	6	Edinburgh position volar slabs for hand trauma patients: a quality improvement project	Kin Seng Tong Plastic research surgery registrar Pinderfields Hospital	Nicola Clarke, Sharmila Jivan Pinderfields Hospital

89	7	Pectoralis Major Ruptures: An uncommon injury	Kristo Qylafi Orthopaedic SHO St. Thomas hospital	Stavros Tsotsolis St. Thomas hospital
68	8	Improving Trauma Ward Round Documentation	Marie-Claire Healey Foundation Year 1 Royal London Hospital	Yin Ji Tan Royal London Hospital
105	9	Timing of treatment for Gartlands Type 3 supracondylar fractures - a systematic review	Yin Ji Tan Royal London Hospital Clinical Fellow Dudley Group NHS foundation Trust	Ghiath Ismayl, Woo Jae Kim, Soha Sajid Russells Hall Hospital
107	10	Comparative functional outcomes and lower complication rates for Coraco-Clavicular ligament reconstruction compared to Hook plates in distal Clavicle fractures: A systematic review and meta-analysis	Dr Austin Gomindes Worcestershire Acute Hospitals NHS Trust	Mohammed Remtulla ST7 Trauma and Orthopaedics M. Tahir - Worcester General Hospital S. Malik- Worcester General Hospital R. Jordan- University Hospitals Birmingham P. Dâ€™Alessandro- University of Western Australia SS. Malik- King's College London
85	11	Pathological Distal Tibial and Fibular Fracture: A Case Report	Muhammad Mubashir Siddiqui Trauma & Orthopaedic Doctor CT1 Wythenshawe Hospital	Mr Anand Pillai Wythenshawe Hospital
63	12	Efficacy ofÂ PentroxÂ - a novel analgesic for minor trauma	Nikita Minhas CT1 University Hospitals of Derby and Burton NHS Foundation Trust	Nil
08	13	Tibial Plateau Fractures During Covid-19 In A Trauma Unit. Impact of Lockdown and The Pressures on the Healthcare Provider.	Parag Panwalkar Senior Clinical Fellow Registrar Morrison Hospital, Swansea Bay University Health Board	K Veravalli - Morrison Hospital, R.Gwynn - University Hospital of Wales, Cardiff . M.Tofighi - Morrison Hospital , Swansea . R.Clement - Morrison Hospital,Swansea. A.Mofidi-Morrison Hospital, Swansea

121	14	Prehospital REBOA	<p>Alex Zylberberg, Medical student London's Air Ambulance Queen Mary University of London University of Birmingham</p>	<p>Carl Evans- Department of Anaesthesia, University Hospitals Sussex Robert M. Greenhalgh- London's Air Ambulance Gareth Grier- Institute for Health Sciences Education, Barts and the London School of Medicine and Dentistry</p> <p>Robert A. Lendrum- Barts Health NHS Trust, St. Bartholomew's Hospital, Royal London Hospital London's Air Ambulance Zane B. Perkins- London's Air Ambulance Queen Mary University of London</p>
72	15	Regional Analgesia Block for Rib Fractures Quality Improvement Project	<p>Rheinallt Morgan Core Surgical Trainee CT2R Department of Cardiothoracic Surgery, Royal Victoria Hospital, Belfast. Northern Ireland Medical & Dental Training Agency.</p>	<p>Rachael Macauley Medical Student, Queens University, Belfast Karolina Janus Medical Student, Queens University, Belfast David Johnston Department of Anaesthesia, Royal Victoria Hospital, Belfast Ryan Sykes Department of Anaesthesia, Royal Victoria Hospital, Belfast Rory Beattie Consultant Thoracic Surgeon, Royal Victoria Hospital, Belfast</p>
74	16	A comparison of mortality rates following revision hip arthroplasty for periprosthetic fracture, infection or aseptic loosening	<p>Richard Mark Unsworth Speciality Trainee Trauma & Orthopaedics ST8 Wrightington, Wigan & Leigh NHS Foundation Trust</p>	<p>Jonathan Barrow, Wrightington, Wigan & Leigh NHS Foundation Trust Mohammed As-Sultany, Wrightington, Wigan & Leigh NHS Foundation Trust Graham Hastie, Wrightington, Wigan & Leigh NHS Foundation Trust</p>

73	17	The use of Sliding Hip Screw (SHS) versus Intramedullary Nail (IMN) for the management of A1/A2 Per-trochanteric neck of femur fractures	Mr Vetri Ganapathy Thiruvasagam Specialty Doctor - Trauma & Orthopaedics St Marys Hospital, Isle of Wight	Sara Beattie Tahir (University of Liverpool) A. Acharya (Warrington & Halton Hospitals NHS Foundation Trust)
123	18	Grip strength as a predictor of post-operative outcomes following hip fracture	Sharlene Kaur Jaiswal Final year Medical student Newcastle University Medical School	Professor Miles Witham (NIHR Newcastle Biomedical Research Centre), Dr Tony Sorial (Washington University, St. Louis)
125	19	Bridging the gap in undergraduate major trauma education with a low fidelity trauma simulation programme.	Dr Shayra Khanom Core Surgical Trainee CT1 Colchester Hospital	Dr Adam Boggon (Royal Free Hospital), Mr Ceyon Jeyarajah (Royal Free Hospital), Dr Toby Noton (Royal London Hospital)
62	20	Analysis of a major incident response to trust-wide IT failure using the crisis resource management (CRM) framework - an orthopaedic team perspective	Miss Jaskiran Gill SpR in orthopaedics Basingstoke and North Hampshire hospital	Shih-Han Chen, Charlotte Sandberg, Qamar Mustafa, Gregory Neal-Smith, Michael Newman, Jaskiran Gill, Duncan Avis, Antonella Ardolino Hampshire Hospitals NHS Foundation Trust
15	21	The legend of the Luschka Tubercle: Masquerading as Snapping Scapula	Shreya Moholkar Medical student 4th year Leicester Medical school	2 Rajesh Botchu Department of Musculoskeletal Radiology, Royal Orthopaedic Hospital, Birmingham, United Kingdom 3 Hiten Patel SanyaPixel Diagnostics, Ahmedabad, India 4 P Jain Orthopaedic surgeon, Advanced Knee and shoulder Hospital, Ahmedabad, India
26	22	CSF xanthochromia as a diagnostic tool for subarachnoid haemorrhage: a service evaluation	Syed Muzaffar Abbas 5 th Year Medical Student University of Southampton	N/A
60	23	Peri-prosthetic fractures - too frail for surgery?	Dominic Waugh Orthopaedic registrar ST3 Bradford Royal Infirmary	Mr Timothy Mark Morris, Mr Peter Bobak Bradford Royal Infirmary

75	24	Primary total elbow arthroplasty (TEA) and distal humerus hemiarthroplasty (DHH) to manage complex intra articular fracture of distal humerus at a UK trauma centre	Uday Mahajan JSD Higher T&O Registrar University Hospitals Birmingham NHS Foundation Trust	Sonu Mehta -Airedale NHS Foundation Trust, Samuel Chan – Robert Jordan - Muhammad Ateeb - University Hospitals Birmingham NHS Foundation Trust
79	25	Functional and radiological outcomes after revision ankle fracture fixation	Uday Mahajan JSD Higher T&O Registrar University Hospitals Birmingham NHS Foundation Trust	Moheeb Gadullah - Paul Andrew Fenton - Alastair Marsh- University Hospitals Birmingham NHS Foundation Trust
59	26	Does Medical School Prepare Students to Manage Facial Trauma ?	Umar Rehman , Core Surgical Trainee , Umar Shafiq Foundation Year 1 Doctor Northwick Park Hospital, London, United Kingdom South Tees Hospital NHS Foundation Trust, Middlesborough, United Kingdom	Mohammad Sohaib Sarwar Locum Clinical Fellow, Department of Oral and Maxillofacial Surgery, The Queen Victoria Hospital , East Grinstead, United Kingdom. Peter A Brennan Honorary Professor of Surgery, Consultant Oral and Maxillofacial Surgeon, Department of Oral and Maxillofacial Surgery, Queen Alexandra Hospital, Portsmouth, United Kingdom.
22	27	Facial trauma education within two English medical schools	Umar Rehman General Surgery CT1 Northwick Park Hospital, London	Mohammad Sohaib Sarwar (The Queen Victoria Hospital , East Grinstead), Umar Shafiq (University Hospital of North Tees Newcastle), Peter A Brennan (Queen Alexandra Hospital, Portsmouth)
57	28	UK Junior Doctor attitudes towards providing surgical aid in humanitarian crises	Umar Shafiq, Foundation Year 2 Doctor North Tees and Hartlepool Foundation NHS Trust Year 2 Doctor, Nooruldeen Al-Asali, General Surgery Foundation North Tees and Hartlepool NHS Foundation Trust, Stockton-on-Tees	Umar Rehman Core Surgical Trainee, Northwick Park Hospital, London, UK Manaf Khatib Consultant Plastic Surgeon, Lister Hospital, Stevanage, UK Naveen Cavale, Consultant Plastic Surgeon, St Thomas' Hospital, London, UK

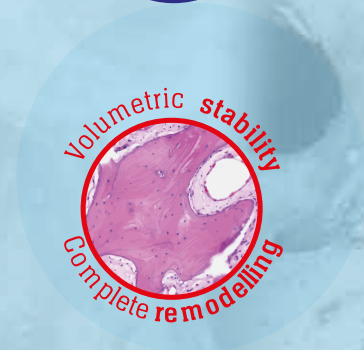
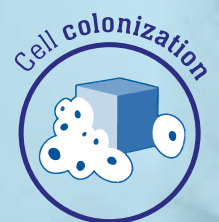
09	29	How effective is the surgical treatment of three and four part proximal humeral fractures using the Proximal Humeral Internal Locking System?	Umar Said CT1 University hospitals Birmingham	Ahmed Saber Huddersfield Royal Infirmary
88	30	The First Decade of Action on Road Safety in the Region of the Americas. Epidemiological and legislative trends.	Usama Rahman Doctor ST2 University Hospitals Birmingham/HEWM/ University of London	NA/one-section of MPH project
101	31	Chopart Dislocation and Fracture-Dislocation: A Systematic Review of Diagnosis, Treatment and Outcomes	Mr. Tobias Metcalfe Final Year Medical Student University of Liverpool	Mr. Lyndon Mason, Mr Junaid Aamir - Liverpool University Hospitals NHS Foundation Trust.

smartbone®

clinically proven
anatomically **selective**
remodelling



- Complete bone remodelling
- High tensile strength
- Use with any metalwork
- Dust free and easy shaping
- Sterile, ready to use
- Long shelf life
- Custom options available
- Large range of blocks, granules and wedges



Kelly Williams
SmartBone Product Manager
07572 151 121
kelly.williams@sovereignmedical.co.uk
www.sovereignmedical.co.uk



**Sovereign
Medical**
GROUP





Personalised websites

Showcase your work, experience and CV

- Your own dedicated website
- Domain name and email addresses included
- Content can be refreshed and updated by you
- Search engine friendly
- Responsive to all devices



Design retainer packages

Increase profitability and save money with a flexible retainer package

- Your own dedicated part-time graphic designer
- Fast turn around time (typically 12-48hrs)
- Cost effective solution
- No long term commitment
- Align your sales and marketing easily
- Guaranteed same day response
- Corporate or individual packages

£130

PER MONTH
3 Dedicated Hours

£330

PER MONTH
10 Dedicated Hours

£630

PER MONTH
20 Dedicated Hour

£890

PER MONTH
30 Dedicated Hours



Creative Studios
Design Consultancy

mark@creativestudiosderby.co.uk
www.creativestudiosderby.co.uk

British Trauma Society

Annual Scientific Meeting

2022

Oral presentations

23rd – 24th November, 2022
Leonardo Royal Hotel Oxford - Formerly Jurys Inn.



ORAL PRESENTATIONS ABSTRACTS

No	Please enter your abstract in the free space below, using the following sub-headings: Introduction, Aim(s), Methods, Results, Conclusions. Please note that your abstract cannot be changed following submission.
49	<p>In patients admitted to a category one major trauma centre, what factors are associated intensive care unit admission or surgical intervention requirement?</p> <p>James Chapman</p> <p>Grace Airey, James Redfern, Lyndon Mason</p> <p>Liverpool University Hospitals NHS Foundation Trust and University of Liverpool</p> <p>Aim Major trauma injury has a high likelihood of surgical and/or intensive care intervention. Our objective was to investigate which injury factors were associated with intensive care unit admission (ICU) or surgical intervention requirement in the major trauma patients.</p> <p>Methods Patients submitted to the hospital's prospectively collected TARN database from May 2014 to July 2021 were included in this study and underwent retrospective review. The body regions injured were defined by AIS region. Statistical analysis was performed using SPSS.</p> <p>Results 6834 patients were identified. In a multivariate analysis model with ICU admission as the dependent variable, Head Injury was most strongly associated with ICU admission (OR 3.431, $p < .001$). Admission characteristics such as the presence of circulatory shock (OR 1.84, $p < .001$), as well as abdominal (OR 1.538, $p < .001$), chest (OR 1.501, $p < .001$) and "other" (OR 1.492, $p = .02$) injuries are also associated with ICU admission. Increasing numbers of surgical interventions also demonstrates significant association (OR 1.829, $p < .001$).</p> <p>The presence of normal GCS was negatively associated with admission to ICU (OR 0.8, $p < .001$), as was limb injury (OR 0.826, $p < .001$), female sex (OR 0.582, $p < .001$) and death during admission (OR 0.41, $p = .023$). Whilst mean Ps was lower and LOS longer in the patients requiring ICU, in the multivariate model there was only a slight increase in the odds ratio (OR 1.029 for both, $p = .002$ and $< .001$ respectively).</p> <p>In a multivariate analysis with surgical intervention as the dependent variable, ICU admission was strongly associated with requiring ≥ 1 operation (OR 4.401, $p < .001$). Limb injury was the most likely AIS region associated with requiring operative intervention (OR 2.814, $p < .001$), followed by facial (OR 2.19), abdomen (OR 1.323) and pelvic (OR 1.118) injuries (all $p < .05$).</p> <p>Conclusions Whilst the factors associated with surgical intervention and ICU admission were similar, the significance of these factors differed. Chest and abdominal injury were the most significant factors requiring ICU admission, although were less associated with the undertaking of a surgical intervention. Orthopaedic services are the most affected surgical specialty by major trauma in the requirement of surgical intervention.</p>

Is surgery more likely in trauma patients with abdominal injuries when combined with chest and pelvic trauma?

James Chapman

James Redfern, Grace Airey, Sharon Scott, David Melling, Nikhil Misra, Simon Scott, Lyndon Mason

Liverpool University Hospitals NHS Foundation Trust

Aim

The incidence of abdominal injury is greater in combined rib and pelvic fractures than in rib or pelvic fractures alone. We sought to investigate if there is an association between the surgical intervention in patients with an abdominal injury combined with chest and/or pelvic trauma.

Methods

Patients were identified from the hospital's prospectively collected TARN database from May 2014 to July 2021 with pelvic or chest trauma and underwent retrospective review. The regions injured were defined by Abbreviated Injury Score (AIS) region. Pearson Chi-squared, Fisher's Exact Test and multivariate analysis was performed using SPSS.

Results

3210 patients were identified. Abdominal injury was most associated with a combined chest and pelvic injury pattern (OR 2.883, $p < .001$), followed by independent chest (OR 2.44, $p < .001$) and pelvic (OR 1.233, $p = .039$) injuries. 1233 patients underwent ≥ 1 operation for any cause; they were most likely to have a combined (OR 2.854, $p < .001$) or pelvic injury (OR 2.284, $p < .001$); chest injury was negatively associated (OR 0.694, $p < .001$). On multivariate analysis, patients undergoing surgery were most associated with admission to ICU (OR 4.352, $p < .001$), pelvic (OR 1.809, $p < .001$) and abdominal injury (OR 1.547, $p < .001$). Chest injury is associated with requiring ICU (OR=7.243, $p < .001$), but negatively with operative intervention (OR 0.578, $p = .001$). In patients undergoing surgery for any cause, Kidney/Adrenal (OR 2.554, $p < .001$) and vascular (OR 3.458, $p < .001$) were the only intra-abdominal injuries significantly associated with combined injury. For chest injuries, GIT/mesentery (OR 3.476, $p = .01$), spleen (OR 7.421, $p < .001$) and kidney (OR 4.579, $p = .048$) were most associated; ureteric/bladder (OR 35.242, $p = .002$), genitourinary (OR 9.792, $p = .012$) and vascular injury (OR 3.707, $p = .012$) were associated with pelvic injury.

Conclusions

Combined pelvic and chest injuries are most associated with an abdominal injury and operative intervention. Vascular injury is the most likely intra-abdominal problem associated with combined injuries that require intervention. Patients who have independent pelvic or chest injuries and require theatre for any cause are associated with injury to anatomically adjacent intra-abdominal cavity structures.

The effectiveness of pre-hospital subcutaneous continuous lactate monitoring in adult trauma patients, compared to standard methods of guiding resuscitation: a systematic review

Dr Jamie Scriven

Mr Emir Battaloglu

Betsi Cadwaladr University Health Board,

Mr Emir Battaloglu - University Hospitals Birmingham NHS Foundation Trust

Introduction: Trauma is a leading cause of death and morbidity worldwide. Questions have been raised over the value of vital signs in the initial diagnosis and management of shock, which are known to respond late to intervention and changes in clinical stability. Lactate is a known diagnostic and prognostic marker used in infection and trauma, and has been associated with mortality, surgery and organ dysfunction. Additionally, it is correlated with the presence of shock, and unit increases in lactate have been strongly associated with the need for pre-hospital lifesaving interventions. Point-of-care testing allows for the periodic assessment of lactate levels; however, there is an associated expense and labour requirement for repeated sampling. Subcutaneous lactate monitoring provides the opportunity to monitor dynamic changes in lactate and utilise these trends to guide management and monitor the response to given treatments.

Aim(s): This review aimed to summarise and appraise the current literature on dynamic subcutaneous continuous lactate monitoring in adult (>16-years-old) trauma patients and its use in lactate-guided therapy, in the pre-hospital environment.

Methods: The systematic review was conducted in accordance with the PRISMA guidelines and registered with PROSPERO. Searched databases included PubMed, EMBASE via Ovid SP, Cochrane Library and Web of Science. Databases were searched from inception to 29/03/2022.

Results: A total of 600 studies were identified, with 551 unique manuscripts. Following title and abstract screening, 14 manuscripts were identified as potentially relevant, and the full text was sourced. Of all 14 manuscripts examined, none fully met the specified eligibility criteria.

Conclusions: Little is known on the utility of dynamic subcutaneous lactate monitoring in adult trauma, and this review highlights a clear gap in current literature. Novel subcutaneous lactate monitors have shown a close correlation with venous lactate, whilst providing a dynamic reading with acceptable lag times; however, their availability and cost remains a potential barrier. This lack of data evidences the feasibility of further research into the clinical use of dynamic subcutaneous lactate monitoring in trauma, and its use in guiding resuscitation.

71

What are the key factors that affect team decisions to activate a silver trauma call, eg: fall from standing?

Lan Tran

University of Birmingham

INTRODUCTION

The UK's population is ageing, with an increasing proportion made up of those ≥ 65 years. Silver trauma refers to major trauma in elderly patients. Major trauma is traditionally associated with high-impact injury mechanisms, such as road traffic collisions or stabbings. However, low-energy mechanisms can also lead to serious injuries in elderly patients due to their underlying frailty and multiple co-morbidities. Despite their vulnerability, elderly trauma patients are often overlooked which delays necessary treatment and increases the risk of adverse clinical outcomes.

AIM(S)

To review the existing literature and determine the key factors that influence the decision to activate a silver trauma call in the emergency department.

METHODS

Using the BestBETs format, a systematic search of published evidence was conducted on MEDLINE and Embase. Systematic reviews were excluded, and articles were limited to human studies and English language. Original articles included in the final analysis were published between 1974 and 2022.

RESULTS

99 abstracts were reviewed, and 13 articles were suitable for full text analysis. These studies show that elderly patients are being under-triaged using the current non-age specific major trauma triage criteria, which increases the morbidity and mortality rates. A number of geriatric-specific factors that are not currently addressed but may be potentially useful in deciding whether to activate a trauma call were found. These are the use of anticoagulants, differing physiological parameters in the elderly, and the mechanism of injury, ie: low-energy falls. All included studies are retrospectively done which may not reflect the reality of clinical practice, where clinicians are triaging trauma patients based on limited information. The studies are conducted across a number of countries; therefore, further research is needed to assess the validity of these findings within the NHS.

CONCLUSIONS

Whilst it is clear that silver trauma patients are overlooked as major trauma in the emergency department, no reliable factors have been found that determine the decision to activate a silver trauma call.

50

An Evaluation of Pelvic Binder Placement in Ireland

Christodoulou N1; Hayes J1; Feeley I1; Leonard M1; O'™Daly B1

1Tallaght University Hospital, Dublin 24, Republic of Ireland

Introduction:

Unstable injuries of the pelvic ring can lead to life-threatening haemorrhage – notably vis-à-vis massive bleeding from the posterior venous plexus and from cancellous bone surfaces. Pelvic circumferential compression devices (PCCDs) are crucial in controlling haemorrhage associated with pelvic ring injuries. Application of a PCCD is required to be at the level of the greater trochanter. As the national tertiary referral centre for pelvic and acetabular trauma in Ireland, we evaluated the placement of pelvic binders across our referrals nationally.

Methods:

We performed retrospective review of the pelvic fracture referrals to the National Pelvic and Acetabular Centre in Ireland. Fractures which had a binder in situ on initial radiographs or CT following injury were included. A total of 150 consecutive cases are reported on. Appropriate site of pelvic binder, Young and Burgess Classification and pubic symphysis diastasis were recorded.

Results:

150 patients were reported on and 96 had a pelvic binder placed. Of the 96 patients, 32 (33.33%) had satisfactory placement and 64 (66.67%) had unsatisfactory placement. Of the 150 patients, 92 patients were identified as having an unstable pelvic injury. 28% of patients with unstable pelvic injuries did not have a pelvic binder placed and of those that had a pelvic binder applied, only 36% were applied satisfactorily.

Discussion:

We describe a deficit in the care of major trauma cases in Ireland. Pelvic binders can be life-saving devices when placed correctly. We found the majority of binders placed are too superior, and therefore do not close the pelvic volume effectively. These are often applied by paramedics at scene, but it is beholden upon those working in the ED and within trauma and orthopaedic surgery to ensure they are placed appropriately.

Clinical predictors for acute intracranial abnormalities in patients presenting to the emergency department following a head injury: a retrospective observational study

Corinna Chidora Ekebuisi

Corinna Chidora Ekebuisi; Justin Newstone

University of Liverpool

Introduction

Head injury presents the leading cause of morbidity and mortality in UK patients aged under 40 years. Annually, over 1.4 million people attend the emergency department with a recent head injury in England and Wales alone, and approximately 200,000 require hospital admission. Urgent risk stratification of patients who require computerised tomography (CT) head imaging is vital to identify traumatic brain injuries and reduce mortality.

Aim

This study aimed to provide an up-to-date analysis of clinical findings which correlate with post-traumatic abnormalities on CT head imaging in patients sustaining a head injury.

Methods

A retrospective analysis of patients who underwent CT imaging for a head injury through the emergency department of a Level 1 Major Trauma Centre in Liverpool, England, between 01 September and 01 November 2020, was conducted. Electronic medical records were reviewed to identify clinical variables significantly associated with a positive CT scan.

Results

417 patients were included in the analysis (mean age 64 years). Acute intracranial abnormalities were detected in 36 (8.6%) patients. The following six clinical findings were significantly associated with a positive CT scan ($p < 0.05$): confusion, headache, post-traumatic seizure, reduced Glasgow Coma Scale (GCS) score, focal neurological deficit, and signs of a basal skull fracture (BSF). Stepwise logistic regression was used to determine the best predictor model for detecting a positive CT scan, and the following criteria were derived: confusion (odds ratio [OR] 4.36, 95% confidence interval [CI] 2.03–9.38, $p < 0.001$), headache (OR 2.17, 95% CI 1.01–4.64, $p < 0.05$), signs of BSF (OR 3.96, 95% CI 1.02–15.40, $p < 0.05$), focal neurology (OR 10.24, 95% CI 2.27–46.26, $p < 0.05$), and post-traumatic seizure (OR 4.40, 95% CI 0.97–20.15, $p = 0.056$).

Conclusion

This study identified several clinical predictors of acute intracranial pathology following a head injury. Patients with one or more of these findings on initial assessment should be considered for CT imaging.

77

Soft tissue reconstruction of combat related injuries effecting the lower limb, is a time target realistic? A systematic review and meta-analyses

Umar Rehman, Elaine Cole, Christos Giannou

Northwick Park Hospital

Background: Major extremity trauma forms a significant proportion of combat related injuries. Coverage of soft tissue defects utilizes the reconstructive ladder, with flap coverage being an option for extensive injuries.

Aims: The aims of this study were to determine whether time to definitive reconstruction and number of pre-flap debridementâ€™s have an impact on flap success and total complication rates in lower limb combat injury reconstructions.

Methodology: A literature search of the terms â€œWarâ€ and â€œReconstructionâ€ was conducted on Pubmed, Prospero, Dynamed, DARE, EMBASE, COCHRANE and BMJ databases. Articles focussing on paediatric populations, mixed extremity trauma, craniofacial and thoracoabdominal injuries were excluded. A random effects model was used due to significant heterogeneity between the papers and a meta-regression was implemented for the analysis of outcomes.

Results: A total of seven studies had fulfilled the inclusion criteria. The cumulative number of flaps performed was 378 (255 free flaps and 123 non-free flaps). The Latissimus Dorsi free flap was the most common flap performed (n=153). The proportion of flap success across the studies was 88% (0.88, 95% CI: 0.77-0.94). There was no statistically significant impact of the number of pre-flap debridementâ€™s on flap success rates (OR of: 1.23 [95% CI: 0.62 to 2.44], p>0.05). Time to reconstruction had no statistically significant impact on flap success rates (OR of: 0.88 [95% CI: 0.77 to 1.00], p>0.05).

Conclusion: The choice of flap used in lower limb combat related injuries is dependent upon the type, extent and location of injury. Onus should be placed on ensuring the wound is adequately debrided prior to definitive coverage in order to provide a healthy wound bed for reconstruction. The same time targets (<72 hours) for soft tissue reconstruction of lower limb injuries seen in civilian trauma should therefore not be applied to combat related injuries.

21

Exploring the Effectiveness of Artificial Intelligence, Machine Learning and Deep Learning in Trauma Triage: A Systematic Review and Meta-analysis

Oluwasemilore Adebayo

Zunira Areeba Bhuiyan, Professor Zubair Ahmed

University of Birmingham

Introduction: The development and use of Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) has rapidly advanced in the medical field, notably in trauma medicine. We aimed to systematically appraise the efficacy of AI, ML, and DL models for predicting outcomes in trauma triage compared to conventional triage tools.

Methods: In this systematic review and meta-analysis, we searched PubMed, Medline, ProQuest, Embase, and manually searched reference lists for studies published from January 1st 2010 to June 9th 2022. We included studies which analysed the use of AI, ML and DL models for trauma triage in human subjects. Reviews and AI/ML/DL models used for other purposes such as teaching, or diagnosis were excluded. Data was extracted on AI/ML/DL model type, comparison tools, primary outcomes and secondary outcomes. We performed meta-analysis on studies reporting our main outcomes of mortality, hospitalisation and critical care admission.

Results: 114 studies were identified in our search, of which 14 studies were included in the systematic review and ten were included in the meta-analysis. All studies performed external validation. The best performing AI/ML/DL models outperformed conventional trauma triage tools for all outcomes in all studies except two. For mortality, the mean AUROC score difference between AI/ML/DL models and conventional trauma triage was 0.09, 95% CI [0.02, 0.15], favouring AI/ML/DL models (P=0.008). The mean AUROC score difference for hospitalisation was 0.11, 95% CI [0.10, 0.13], favouring AI/ML/DL models (P=0.0001). For critical care admission, the mean AUROC score difference was 0.09, 95% CI [0.08, 0.10] favouring AI/ML/DL models (P=0.00001).

Conclusions: This review demonstrates that the predictive ability of AI/ML/DL models is significantly better than conventional trauma triage tools for outcomes of mortality, hospitalisation and critical care admission. However, further research, and in particular randomised controlled trials are required to evaluate the clinical and economic impacts of using AI/ML/DL models in trauma medicine.

98 Funding: None

Assessment of early airway management in severe traumatic brain injury patients at a Level I Trauma Centre in South India.

Ajish Sam George

Christian Medical College Vellore India

Dr Pragnitha Chitteti & Prof. Mathew Joseph

Introduction: In patients who survive the primary insult of traumatic brain injury (TBI), outcomes are significantly affected by the quality of pre-hospital care to mitigate secondary insults to the brain, beginning with airway management. Severe TBI patients (GCS \leq 8) commonly have compromised airways, but health systems in many low- and middle-income countries have under-developed trauma systems and airway management is often inadequate.

Aim: This study analyses the trends in the airway status on arrival of patients with severe TBI over six years at a trauma centre in South India.

Methods: Data were extracted from a prospectively maintained TBI database. Patients either arrived directly from the accident site or were transferred from another hospital. Definitive airway intervention by ambulance services is not possible in our area, and airway intervention is only performed in hospitals. We therefore analysed airway status in referred patients and used logistic regression to assess the trends in airway care across six consecutive years.

Results: There were 968 severe TBI patients, of whom 351 were referred. When grouped as patients who did not need emergency airway intervention (124 non-secured but non-compromised and 54 secured before arrival) and those who did (173 non-secured and compromised) we found that contrary to our expectations, the proportion of compromised airways increased over time (OR 1.19, 95% CI 1.04 – 1.36).

Conclusion: In spite of efforts on the part of governmental and non-governmental organizations, there has been no improvement in ensuring airway security, and further targeted interventions in training and protocols are necessary.

82

A five-year analysis of traumatic deliberate self-harm admissions to a Major Trauma Centre: does sex matter?

Laura Zagarella

Mr Max Marsden, Dr Elaine Cole

Bart's and the London Medical School

Deliberate self-harm (DSH) and suicide are common and preventable. There is limited data on the epidemiology of DSH, including between sexes. The aims of this study were to explore the sex differences in DSH admission frequency, mechanism of injury, demographics, outcomes and explore temporal changes.

A retrospective analysis of local trauma registry data was conducted for all DSH presentations that triggered a trauma team activation at the Royal London Hospital (RLH) from 2015 to 2020. Statistical comparisons were performed to assess for differences between DSH patients based on sex and over time.

In total 18407 trauma patients attended RLH between 2015 and 2020, of which 968 patients (5.3%) were injured as a result of DSH. There was no significant variation in the proportion of DSH patients™ year-on-year. Overall, two thirds (592, 61%) of the patients were male and the proportion of males presenting with DSH varied each year (51-76%). Within sex groups, the proportion of trauma that resulted from DSH in female patients was almost twice that of males (9% vs. 4%, $p < 0.01$). Penetrating injury was the most common mechanism of injury in both sexes and more prevalent in females (59% vs. 51%, $p = 0.009$). After inpatient admission, men had a greater probability of critical care admission (F: 17% vs. M: 28%, $p = 0.0002$) whilst females were more likely to be discharged home (F: 62% vs. M: 47%, $p = 0.0001$). Males had a three-fold increase in complete suicide (2% vs 6% $p = 0.002$).

Approximately 1 in 20 trauma call activations at the RLH were a result of a DSH injury. More men were injured due to DSH and these men had worse outcomes. However, between sex groups a greater proportion of women were injured because of DSH than men. This study provides useful information to help target preventative strategies to reduce DSH and suicide.

23

Vancomycin Resistance Enterococcus and Implications to Trauma and Orthopaedic Care

Owain Davies, Karunkar Veravalli, Parag Panwalkar, Medhi Tofighi, Phillip Butterick, Brendan Healy, **Ali Mofidi**

Morrison Hospital / Swansea Bay University Health Board

Introduction

Vancomycin Resistance Enterococcus is a devastating nosocomial infection.

Aim

To study a VRE outbreak in the orthopaedic unit in Morrison hospital.

Methods

Twenty-four cases of VRE infection and 34 cases of VRE colonisation were identified in patients who were treated for orthopaedic care in a 15-month period. Cases were reviewed to identify predisposing-factors specifically looking at patient characteristics, risk-factors, VRE risk and clearance (PREVENT) scores, and impact on outcome and institution. The presenting condition, treatment, presence of postoperative infection and VRE-scores, was compared between colonised and the infected cohort.

Results

Predominant VRE type was Van A, Enterococcus Faecium. Diabetes, advancing age, high ASA score, and peri-femoral surgery was associated with VRE infestation. All the VRE infected patients had an infected complication of their fracture fixation or arthroplasty requiring reoperation and prolonged antibiotic therapy. The infected group had an average VRE risk score of 8.5 versus 2 in the colonised group ($p < 0.001$). PREVENT-score was 7 in the infected group and 2 in the colonised group ($p < 0.001$).

Time to positivity was 36+/-33 days for the colonised group and 44+/-26 days for the infected group. Hospital stay was 71.6+/-34 days for the colonised group and 71.5+/-26 days for infected group. Mortality was significantly higher for VRE infected cases ($p < 0.05$).

Conclusions

We advise surveillance, prompt therapy and discharge of patients undergoing peri-femoral surgery, especially avoidance of infected metalwork, infective complications, antibiotic stewardship and radical surgery beyond infective precautions. PREVENT-score shows that the infected group are unlikely to clear their VRE in the future; clearance is possible in the colonised group.

12

The Effect of the COVID-19 Pandemic on Suicidal Attempt Major Trauma Secondary to Suicidal Intentions: Level 1 UK Major Trauma Centre experience

Jafar Shakir, Steve Dixon, Chris Knight, Stella Smith, Joseph Alsousou

Royal Stoke University Hospital
Manchester Royal Infirmary Major Trauma Centre, Manchester University Hospitals NHS trust,
Manchester, UK

Introduction & Aim

Since the start of COVID-19 pandemic, the UK government imposed 3 lockdowns to coincide with the rising cases. A significant economic and societal burden have proven to have determinantal effect on mental health. It has been suggested that lockdowns in particular may have a series impact on mental health leading to increase in suicidal attempts. The aim of this study is to assess the effect of COVID-19 lockdowns on suicidal attempts polytrauma cases that were admitted to a Major trauma centre.

Method

Data was analysed from the admission records of a Level 5 Major trauma centre from May 2018 until December 2021 with an interrupted time series study design being implemented. We compared polytrauma admissions to hospital secondary to suicide attempts in a 22-month period prior to the start of the first UK national lockdown in March 2020 to the 22-month period post lockdown. The number of cases were compared within the same season before and after lockdown to adjust for sessional effect on suicidal attempts. Data showed nonparametric distribution therefore Man-Whitney statistical test was used with significance level of $p < 0.05$.

Results

A total of 3186 trauma patients were admitted in the 22 months before the start of the pandemic and 3204 were admitted in the 22 months after it. The average injury severity score pre-pandemic was 13 with the post-pandemic average score was 11. There was no statistical difference in the number of cases per month before and after the pandemic ($p < 0.61$). There was an overall higher number of suicidal polytrauma in summer compared to winter. There no difference in the number of cases per season before and after the pandemic ($p < 0.8$). Post pandemic cases were plotted against daily number of COVID-19 cases. There was a trend towards an increase in cases in the period after COVID-19 cases peaks although not statistically significant.

Conclusion

This is the first study to report the pandemic effect on polytrauma suicidal attempts. The results of this study show no overall impact of COVID-19 pandemic on suicidal attempt polytrauma numbers or mechanism of injury. However, there is a weak indication that cases increased after easing each lockdown. An adequately-powered study to assess the nationwide impact is warranted.

100

A systematic review of elderly-specific criteria for pre-hospital triage following trauma

Usama Rahman

Adam Boulton, Donna Peel, Elaine Cole

University Hospitals Birmingham/HEWM

Introduction

Pre-hospital identification of major trauma in elderly patients is key for delivery of optimal care, however triage of this group is challenging. Elderly-specific triage criteria may be valuable.

Aim

This systematic review aimed to summarise the published pre-hospital elderly-specific trauma triage tools and evaluate their sensitivity and specificity and associated clinical outcomes.

Methods

MEDLINE and EMBASE databases were searched using predetermined criteria (PROSPERO: CRD42019140879). Two authors independently assessed search results, performed data extraction, risk of bias and quality assessments following the Grading of Recommendations, Assessment, Development and Evaluation system.

Results

801 articles were screened and 11 studies met eligibility criteria, including 1,332,300 patients from exclusively USA populations. There were eight unique elderly-specific triage criteria reported. The Ohio Geriatric Triage Criteria was reported in three studies. Age cut-off ranged from 55 to 70 years with ≥ 65 most frequently reported. All reported existing adult criteria with modified physiological parameters using higher thresholds for systolic blood pressure and Glasgow coma scale, although the values used varied. Criteria sensitivity ranged from 44 to 93%, with a median of 86.3%, whilst specificity was generally poor (median 54%). Scant real-world data showed an increase in patients meeting triage criteria, but minimal changes to patient transport destination and mortality. All studies were at risk of bias and assessed of 'very low' or 'low' quality.

Conclusions

There are several published elderly-specific pre-hospital trauma triage tools in clinical practice, all developed and employed in the USA. Consensus exists for higher thresholds for physiological parameters, however there was variability in age-cut offs, triage criteria content, and tool sensitivity and specificity. Although sensitivity was improved over corresponding 'adult' criteria, specificity remained poor. There is a paucity of published real-world data examining the effect on patient care and clinical outcomes of elderly-specific triage criteria. There is uncertainty over the optimal elderly triage tool and further study is required to better inform practice.

87

Nottingham Hip Fracture Score: is it a useful predictor of 30-day mortality?

Prateek Gupta

Sundas Butt

George Eliot Hospital NHS Trust, Nuneaton

Introduction:

The Nottingham Hip Fracture Score (NHFS) was developed in 2007 as a predictor of 30-day mortality after hip fracture surgery following a neck of femur fracture. The National Hip Fracture Database is the standard used which calculated their own score using national data.

Aims:

To assess the accuracy in calculating the Nottingham Hip Fracture Score against the National Hip Fracture Database. To explore whether it should be routinely included during initial assessment to aid clinical management?

Methods:

The NHF score for 30-day mortality was calculated for 50 patients presenting with a fractured neck femur injury between January 2020 to March 2020. A score <5 was classified as low risk and ≥ 5 as high risk.

Results:

There was an increase in the number of mortalities observed in patients who belonged to the high-risk group (≥ 5) compared to the low risk group. COVID-19 positive patients had worse outcomes with average 30-day mortality of 6.78 compared to the average of 6.06. GEH NHF score per month showed significant accuracy against the NHFD scores.

Discussion:

The identification of high-risk groups from their NHF score can allow for targeted optimisations and elucidation of risk factors easily gathered at the point of hospitalisation.

Conclusion: The NHFS is a valuable tool and useful predictor to stratify the risk of 30-day mortality and 1-year mortality after hip fracture surgery. Inclusion of the score should be considered as mandatory Trust policy for neck of femur fracture patients to aid clinical management and improve patient safety overall.

31

Management and Outcomes of Neck of Femur Fracture Patients Presenting on Direct Oral Anticoagulants

Caroline Tijole Selvakumar

Mr Konrad Wronka

Foundation Year 3

Introduction:

We performed a retrospective cohort study to assess the management and outcomes of patients presenting with a neck of femur (NOF) fracture who were on a direct oral anticoagulant (DOAC) admitted over a one year period in our district general hospital (DGH).

AIM:

To ensure that patients with a fractured NOF who are on a DOAC are managed in line with guidance from NICE (CG124), the National Hip Fracture Database (NHFD) and our local policy on the use of DOACs in relation to surgery.

Methods:

All patients with a NOF fracture who presented to our DGH between 01/01/2021 and 31/12/2021 were reviewed. We identified those admitted on a DOAC. We assessed time between admission and surgery, postoperative blood loss and postoperative complications.

Results:

418 patients were admitted with a NOF fracture to our DGH. 35 patients (8%) were on a DOAC. 89% (31/35) patients on a DOAC were taken to the theatre within 36 hours.

Of the remaining 4 patients, 2 had a complex peri prosthetic fracture and were initially managed conservatively. The other two patients were delayed due to renal function and low haemoglobin respectively.

85% of patients had minimal blood loss after the surgery. Only 15% (5 patients) needed blood transfusion postoperatively. Two patients with impaired renal parameters were given a prothrombin complex concentrate before surgery - neither had a significant postoperative complication.

71% (25 patients) did not have any postoperative complications. Of the complications which did occur, the most common was delirium (6 patients). Other complications included AKI(1), COVID (1), DVT (1), epilepsy (1) and death on table (1).

Conclusion:

The management of fractured NOF patients on a DOAC at our DGH was in line with best practice guidance with 89% reaching theatre within 36 hours of admission. The majority of these patients (85%) did not require a blood transfusion postoperatively.

124

A Protocol for Venous Thromboembolism (VTE) Prophylaxis in patients with Traumatic Brain Injury

Philip J. O'Halloran^{1,2}

1Department of Neurosurgery, Royal London Hospital, London, UK

2Department of Neurosurgery, Queen Elizabeth Hospital, Birmingham, UK

Aim:

Longstanding concern exists regarding the safety and timing of administration of pLMWH in TBI patients. We developed a protocol to balance VTE risk and intracranial bleeding risk, with the aim of prescribing pLMWH in patients with high VTE risk as soon as safely possible after admission.

Methods:

A 12 month prospective single site study examining TBI patients admitted to a London Major Trauma Centre between January 2021- December 2021 was carried out. Prospective data was collected including age, severity of TBI, mechanism of injury, VTE risk, bleeding risk, timing of VTE prophylaxis, IVC filters and complications of VTE prophylaxis. Descriptive statistics were described using medians with interquartile range (IQR) and frequencies/proportions. Univariable and multivariable logistic regression models were used to estimate the probability of anticoagulation under various assumptions.

Results:

409 eligible patients were included, who had a median age of 46 years (IQR 30-62). 307/409 (75%) were male, and 239 (59%) had mild TBI. Of patients at high or very high risk of VTE, 52/176 (29.5%) were anticoagulated within 24 hours, 90/176 (51.1%) within 48 and 122/176 (69.3%) within 72. In models adjusted for bleeding risk, probability of anticoagulation within 72 hours when VTE risk was very high was 85.4% (95%CI 71.8 – 99) with low bleeding risk and 80.5% (95%CI 64.4 – 96.7) intermediate bleeding risk. In patients with high VTE risk, the probability of anticoagulation within 72 hours was 74.1% (95%CI 61.8 – 86.4) with high bleeding risk and 66.9% (95%CI 57.2 – 76.6) with intermediate risk. There were 8 VTEs (2%), all of which were in patients receiving anticoagulation, with 5 (63%) in patients anticoagulated after 72 hours. One complication (0.2%) was observed, in a patient who experienced expanding contusions and recovered uneventfully.

Conclusion: Implementation of the protocol achieved high rates of early administration of pLMWH with a satisfactory safety profile.

94

Mid-term Clinical and Functional Outcomes of Fibula Nail Fixation for Unstable Ankle Fractures: a 5-year experience

Joe Barrett-Lee

Joshua Enson, Ahmed Ahmed, Rayyan Jamal, Muatasim Elmahi, Syed Anjum

University Hospital Southampton

Introduction

In recent years fibula nail fixation of unstable ankle fractures has gained increased interest, particularly for high-risk cohorts. As the technique becomes more commonplace, monitoring of outcomes in the longer term is vital.

Aims

We present the mid-term outcomes of patients treated with fibula nailing at our institution over a 5-year period.

Methods

The study period was from December 2016 to December 2021. Our primary outcome measure was the Manchester-Oxford Foot Questionnaire (MOX-FQ), obtained via telephone interview at a mean of 28.9 months post-operatively. Secondary outcomes were complications, metalwork failure, re-operations, and patient satisfaction.

Results

68 patients with unstable ankle fractures underwent fibula nailing during the study period. Mean age was 72 years (SD 12.9) and 79% were female. Mean time to surgery was 5.1 days (SD 4.1) and discharge 14.8 days (20.3). 55 medial malleoli were fixed (21 open, 34 percutaneous). 4 patients (5.9%) underwent metalwork removal: 1 medial malleolus plate, 1 fibula nail and medial screws for deep infection, and 2 syndesmotic screws for pain and prominence. There was one medial-sided surgical site infection, which was treated with antibiotics. 45 patients were contactable for telephone follow-up. The overall mean MOX-FQ score was 27.08 (SD 25.83) and metalwork failure was associated with worse MOX-FQ scores (57.29 failure versus 24.93 non-failure, $p=0.034$). 38 patients (84%) were satisfied with their outcome.

Conclusion

These results demonstrate that fibula nail fixation of unstable ankle fractures is associated with a low rate of complications and revisions. Patient-reported outcomes are favorable in most patients.

Comparison of Outcomes of Fibula Nailing for Unstable Ankle Fractures in Patients Under and Over 65 Years

Joe Barrett-Lee - Presented by Muatasim AlMahi

Joshua Enson, Ahmed Ahmed, Rayyan Jamal, Muatasim Elmahi, Syed Anjum

University Hospital Southampton

Introduction

Fibula nailing is increasing in use for fixation of unstable ankle fractures in high-risk patients. Favorable outcomes have led to interest in its use in younger cohorts.

Aims

This study aimed to compare outcomes of patients under and over 65 years following fibula nailing.

Methods

Data was collected on patients managed with fibula nailing between 2016 and 2021. Demographics and injury details were recorded. Outcomes were assessed at a mean of 29 months post-operatively, including complications, the Manchester-Oxford Foot Questionnaire (MOX-FQ), and patient satisfaction.

Results

16 patients under 65 (mean 55 years) and 52 patients over 65 (mean 76 years) were included. 75% of under 65s were female compared to 81% of over 65s. The mean Charlson Co-morbidity index was significantly higher in those over 65 (1.9 vs 4.2, $p=0.0001$). Osteoporosis rates were similar between groups (37.5% under vs 38.5% over). Bimalleolar fractures were most common (62.5% under, 73.1% over), followed by trimalleolar (18.8% under, 17.3% over) and lateral malleolar (18.8% under, 9.7% over). In those under 65 there was 1 wound breakdown and 2 revisions hardware removal. In those over 65 there was 1 deep infection requiring revision and 1 hardware removal. Mean MOX-FQ scores were significantly higher in the younger group (49.7 under, 18.8 over, $p=0.00056$), however satisfaction was similar (83% under, 84% over).

Conclusion

This study demonstrates that complication and revision surgery rates following fibula nailing are similar in those under and over 65 years. Functional outcomes are less favorable in younger patients, though satisfaction remains high.

46

Evaluating the Effectiveness of Osseointegration for Traumatic Lower Limb Amputations: A narrative review

Oluwasemilore Adebayo

University of Birmingham

Introduction: Major trauma to the limbs often results in amputation and can have a debilitating effect on an individual's physical and psychological health. This life-changing event commonly affects mobility, body image, functionality, and quality of life (QoL). Currently, the conventional management to remediate the consequences of limb amputation is a Traditional Socket-mounted Prosthesis (TSP) for the affected limbs. However, its use is associated with various complications such as skin ulcers, increased fracture risk in the residual limb, nerve pain, excessive sweating, heterotopic ossification, and socket irritation. To address this, a novel approach known as osseointegration—a procedure in which an artificial implant is surgically integrated and anchored into residual bone—has been developed.

Aims: This narrative review aims to primarily evaluate the efficacy and functional outcomes of lower-limb osseointegration compared to TSP. Secondary aims include analysis of the complications of osseointegration.

Methods: A literature review was performed to identify and analyse studies addressing the efficacy, functional outcomes, and complications of lower-limb osseointegration prosthesis compared to TSP. Studies were summarised according to type of osseointegration prosthesis, implant material, number of surgeries required, and amputation location.

Information on efficacy, functional outcomes, and complications of patients with osseointegrated prosthesis was extracted.

Results: Various articles comparing osseointegration to TSP were identified; however, six studies were critically analysed for the primary and secondary aims. All studies reported osseointegration conferred significant improvements in mobility, walking capability, walking speed, quality of life, prosthesis comfortability, prosthetic control, and prosthetic use.

Complications reported were mild infection, phantom limb pain, and periprosthetic fractures, although incidences were rare.

Conclusion: Osseointegration has been shown to increase prosthetic use, improve confidence, walking ability, and mobility. Complications are mild and easily treated. Overall, there is sufficient evidence to suggest osseointegration could become standard management for lower-limb amputations.

Can we improve quality of post-operative instructions to ensure safe management of trauma patients? Yes, we can!

Stephanie Potten

Konrad Wronka

Addenbrooke's Hospital

Introduction

Detail in post-operative instructions is crucial for optimal patient care and safety after trauma surgery.

We identified 5 key pieces of information essential for efficacious management after surgery; venous thromboembolism (VTE) prophylaxis, weight-bearing (WB) status, physiotherapy (PT) instructions, post-operative x-rays, follow-up.

Aim

Improve documentation and thus post-operative care, by assessing adherence in these categories against pre-defined standards.

Methods

Operation notes for adult trauma patients September-October 2021 were retrospectively reviewed. 75 cases were identified for analysis.

Results were presented at the trust clinical governance meeting, highlighting areas with deficient detail. Posters were created for theatres and associated offices, and awareness raised amongst surgeons of all grades. An electronic template was designed and implemented on the trust electronic patient record, prompting inclusion of essential information.

We carried out a second prospective audit cycle with the same parameters, to determine and assess the impact of these changes.

Results

First-cycle-results demonstrated poor documentation of clear instructions for VTE prophylaxis (30.5%) and PT instructions (41.3%). Instructions for WB status (82.6%), post-operative x-rays (78.8%), and follow-up (74.6%), were also sub-optimal.

Second-cycle-results demonstrated improvement across all categories, particularly PT instructions (80.0%). More modest improvements were seen in other categories: VTE prophylaxis (40.0%), WB status (89.3%), post-operative x-rays (93.0%), follow-up (86.7%).

Surgeons using the electronic template were more likely to provide detailed post-operative instructions. Clear instructions were seen in a greater proportion of cases in VTE prophylaxis (58.3%), WB status (97.4%), post-operative x-rays (96.0%) and follow-up (94.9%).

Conclusions

Education, introduction of posters, but most importantly an electronic template, have resulted in improved provision of clear instructions at our trust. We believe post-operative instruction templates should be implemented more widely. Beyond signposting to aide-memoires and electronic templates, regular education of surgeons on operation notes is necessary to optimise post-operative management.

Butterflies and Bladders: Exploring the severity of pelvic and urological injuries in motorcycle trauma

Oliver Goulden

Mr Daud Chou, Mr Jaikirty Rawal, Mr Peter Hull, Mr Andrew Carrothers

Cambridge University Hospitals, Hills Road, Cambridge CB2 0QQ

Introduction

A motorcyclist sustains a serious injury every 88 minutes in the UK. They are amongst the most vulnerable road users and are 16 times more likely to die from a crash than a car driver. Pelvic injuries are amongst the most devastating and rapidly fatal and are often associated with high-speed impacts with the fuel tank. In some case reports, this mechanism causes bilateral superior and inferior pubic rami fractures, producing a floating symphysis in a butterfly pattern. Pelvic fractures carry a high risk of urological trauma including genital lacerations, testicular dislocation and bladder injuries, with the potential for life altering consequences.

Aim

To establish the prevalence of the butterfly pattern in pelvic fractures from motorcycle trauma over a 6 year period at a Level 1 regional major trauma centre in England. To examine the rates of urological injury and correlate this with pelvic fracture patterns.

Methods

We examined our local institutional database for pelvic fractures from motorcycle trauma, reviewing each patients' notes for urological and other injuries. Each X-ray and CT was reviewed for classification and for the presence of a butterfly pattern.

Results

Of 1742 patients referred in this period, 92 had pelvic fractures from motorcycle injuries. 13% of these had a butterfly type pattern. This was associated with a higher median Injury Severity Score (ISS) of 23, compared to 13 for the whole group. 16 patients, 17%, had urological injuries. The rate of injuries increased from 7.5% to 50% as the severity of the pelvic fracture increased. Urological injury was associated with an increase in median stay from 18 (range; 2-86) to 33 days (range; 9-61).

Conclusions

Our data shows that this butterfly fracture pattern is common in motorcycle injuries and is a potential marker for more severe injury patterns. The rate of urological injury of 17% is higher than the published range of 6-15%. Our data also shows a clear link between severity of pelvic fracture and rate of urological injury. We suggest a need for a national pelvic fracture database, to drive research into the biomechanics of motorcycle injuries. This may help guide safety interventions and motorcycle design to better protect this vulnerable group of road users.

James Lind Alliance Major Trauma Priority Setting Partnership

Chris Bretherton, Major Trauma Steering Group

Oxford University Hospitals

Objective: To determine research priorities for the management of Major Trauma, which represent the shared priorities of patients, their families, carers and healthcare professionals.

Design/ Setting: An international research priority setting partnership.

Participants: People who have experienced Major Trauma, their carers and relatives, and relevant healthcare professionals and clinical academics involved in treating patients with Major Trauma.

Methods: A multi-phase priority setting exercise is being conducted in partnership with the James Lind Alliance. A national survey asked respondents to submit their research uncertainties which were then combined into several indicative questions. We are now asking stakeholders to pick their top-ten questions from the list of 60 indicative questions. Thereafter a workshop of patients and healthcare professionals will be conducted to determine the shared top-ten priorities for future research and funding.

Results: A total of 1569 uncertainties, submitted by 417 respondents were received during the initial survey. These were refined into 60 unique indicative questions.

Conclusions: The Major Trauma Steering Group would like to attend the BTS conference to present the work and invite BTS attendees to complete the interim survey, via paper surveys or online. These shared priorities will then be used to guide funders and teams wishing to research Major Trauma over the coming decade.

104

Referral for organ donation in end-of-life patients

Olivia Edwards

University of Leicester

Introduction

For my student selected component in the third year of my medical degree, I did a placement on the intensive care unit in Leicester. I spoke to one of the specialist nurses in organ donation who explained their role and the importance of referring patients who might be appropriate for organ donation. This is a topic of particular importance in Leicester as the population is very ethnically diverse, yet "One year after being listed for a transplant (all organs), 45% (N=1768) of white and 27% (N=293) of BAME people have been transplanted" (1). The disparity in this statistic demonstrates why education around organ donation is so important and particularly relevant in Leicester. As well as this, in 2020-2021, there were "7,121 potential donors" but only "5,922 referred potential donors" (2), suggesting that over 1000 potential donors were missed by teams and not referred. By educating staff about referral, hopefully fewer potential donors will be missed. This topic is also extremely relevant when considering trauma patients, and so will make an interesting addition to the conference.

Aims

I spoke the several junior doctors on the ITU team, all of whom said they would be unsure of what to look for in a patient who might be a potential organ donor. As well as this, they were unsure how to refer patients to the organ donation team. I created this poster, along with a teaching presentation, to help educate junior members of the team on intensive care about the importance of donation and the referral pathway.

Objectives

Why is organ donation important?

When is organ donation appropriate?

How to refer a potential organ donor to the organ donation team.

Conclusions

I hope that the poster, together with the teaching presentation will mean that the junior doctors now understand when donation is appropriate and how to refer a patient to the donation team. I hope they also understand the need to deliver information around donation to the patient's family at an appropriate time, with the correct people involved. Better education around referral of patients for organ donation, should, with time, lead to a increase in the amount of potential donors assessed by the specialist organ donation nurses, and an increase in the amount of transplants.

70

A simple technique for centralisation of distal femoral nail to avoid anterior femoral impingement and perforation

Parag Panwalkar, K. Veravalli, M.Tofighi , A.Mofidi

Morrison Hospital / Swansea Bay University Health Board

Introduction:

Anterior femoral perforation or distal anterior nail position is a known complication of femoral nailing specifically in pertrochantric fractures fixed with cephalomedullary nail. This has been attributed to wrong entry point for the femoral nail, nail with large radius of curvature or malreduced fracture. Left alone anterior perforation of femur or abutment of nail on anterior femur will result in pain and risk stress riser at distal femur and periprosthetic fracture. There have been multiple techniques described to avert or correct this problem ranging from using different nail, entry point change, poller screw to deflect the nail position, use of shorter nail or use of curved guidewire or change of nail to ensure a nail with large radius of curvature

Methods:

We present this technique which we have used in order to centralise the femoral nail either when the nail has been put anteriorly or when the guide wire has been inserted too anteriorly prior to the insertion of the nail. This technique requires the use of femoral reduction spool from the nailing set. This technique was used by eight trainees of different level of experience under supervision.

Results:

This technique was easily reproducible without any learning curve without a need for opening of fracture site or change in the entry point with three different femoral nailing sets in twenty-five cases. The process took less than 10 minutes even when revising a malpositioned femoral nail.

Conclusion:

Our technique of using femoral reduction spool is easily reproducible and repeatable technique for avoidance of non-centralised femoral nail insertion and distal anterior perforation of femoral nail.

3

Bone transport vs Masquelet for infected non-union fracture femur: do we have an answer?

Anubhav Malhotra

Sandeep Gupta, Parmanand Gupta, Naveen Mittal, Anil Kapoor

Wirral University Teaching Hospitals NHS Trust, UK

Introduction: Infected un-united fracture shaft femur with segmental gap of more than 2.5 cm is a significant reconstructive challenge.

Aim: The current study was done to compare the merits and demerits of Masquelet's technique versus bone transport technique and enable the surgeon to decide the best line of management in such complex situations.

Methods: Data of infected non-union fracture shaft (gap >2.5 cm) femur was collected retrospectively from 2006 to 2015 and a total of 45 patients were included in the study. A total of 21 patients treated by bone transport and 24 patients by Masquelet's technique were analysed.

Results: Both the groups had greater than 90% union rates showing their effectiveness in infected non-union femur. The time to consolidation was lower in the Masquelet group ($p < 0.0002$) but 5 out of 24 patients had residual limb length discrepancy. In bone transport group, varus deformity was present in 8 out of 21 patients and statistically significant pin tract problems but no repeat debridement for clearance of infection was required. The two groups also achieved greater than 80% good to excellent ASAMI bone and functional scores. Both the groups had good MSTS scores with the Masquelet group having statistically significant emotional acceptance (p -value = 0.003).

Conclusion: Both of these are excellent techniques for infected un-united fracture femur. Masquelet's technique has lesser time to union and better emotional acceptance. The bone transport technique is better for larger bone defects and with limited availability of autograft.

81

Augmentative plating (while retaining intramedullary nail) for treatment of aseptic femoral non-unions: a tertiary centre experience

Anubhav Malhotra

Sandeep Gupta, Anmol Sharma, Jagandeep Virk

Wirral University Teaching Hospitals NHS Trust, UK

Introduction: There is no consensus regarding the treatment of choice for aseptic femoral non-unions as all femoral non-unions are not the same and hence, behave differently due to difference in location and complexity of fracture.

Aim: We present our experience of treating aseptic femoral non-unions with augmentative plating while maintaining the intramedullary nail in-situ.

Methods: 23 patients of aseptic femoral non-unions were included and treated with augmentative plating while maintaining the intramedullary nail in-situ. These patients were assessed for clinical and radiological evidence of union upon subsequent follow up.

Results: There were 18 males and 5 females, with an average age of 37 years (range 20 to 60 years). 08 patients had hypertrophic, 05 oligotrophic and 10 had atrophic type of non-union. There were 15 non-isthmal and 08 isthmal non-unions. Medial comminution was present in 05 out of the 08 isthmic fractures. Bone grafting was carried out in 13 cases (all cases of atrophic variety (n=10) and three cases of oligotrophic variety). Union was achieved in all the cases at an average of 5 months (3-8 months). The average duration of surgery was 74 minutes (range 50 to 95 minutes), with an average drop in haemoglobin post surgery being 0.8 mg/dl (range 0.5 to 1.5 mg/dl). The average range of motion at knee joint was 126 degrees (range 115 to 135 degrees) at final follow up of 2 years. No complications were reported.

Conclusion:

In aseptic non-isthmal femoral non-unions and isthmal non-unions with medial comminution, augmentative plating with or without bone grafting is an excellent treatment option.

80

Junior review of paediatric patients: a traumatic assessment
Luke Turner¹

¹Royal Hospital for Children, Glasgow

Background:

Trauma is the leading cause of death in the paediatric population. A significant number of paediatric trauma patients are reviewed by SHOs in the first instance, with delays between admission and review by a registrar or consultant often several hours long. This study set out to quantify these delays in all 21 of the paediatric major trauma centres in the UK, in addition to analysing the proportion of the SHOs in a trauma setting that have received formal paediatric trauma education. It also assessed the proportion that are aware of the major trauma assessment guidelines (NICE 2016).

Methods:

A questionnaire was distributed to all of the SHO doctors (below registrar level) working in the major trauma centres in the UK. This elucidated the incidence of SHO-clerking of trauma patients, delays in senior reviewing and the proportion of junior trauma doctors that have received formal paediatric trauma training and/or are aware of the major trauma assessment guidelines (NICE 2016).

Results:

Over half of the SHOs working in one of the major trauma centres in the UK are the first port of call in clerking trauma patients. Less than half of these have received formal paediatric trauma training, and less than half are aware of the NICE trauma algorithms. The primary barriers to formal training appears to be limited availability of APLS courses and limited funding to enable enrolment on APLS courses. Data collection not yet complete at time of writing.

Conclusion:

A considerable number of paediatric trauma patients are reviewed in the first instance by an SHO with no formal trauma training, leading to delays in appropriate care. A means of overcoming this is to increase the availability of, and the funding for, APLS courses across the UK. A more simple solution is a departmental trauma induction, providing access to the major trauma assessment guidelines (NICE 2016).

116

TLSO (THORACO LUMBAR SACRAL ORTHOSIS) BRACE FOR SPINE FRACTURES, WHAT'S THE EVIDENCE AND DO PATIENTS USE THEM?

Sonu Mehta, R. Reddy, D. Nair, U. Mahajan, T. Madhusudhan, A. Vedamurthy.

Glan Clwyd Hospital, Rhyl, United Kingdom

Introduction

Mode of non-operative management of thoracolumbar spine fracture continues to remain controversial with the most common modality hinging on TLSO bracing. Several studies have shown prolonged use of brace may lead to skin breakdown, diminished pulmonary capacity, weakness of paraspinal musculature with no difference in pain and functional outcomes between patients treated with or without brace.

Aims

To identify number of spinal braces used for spinal injury and cost implications (in a DGH), to identify the impact on length of stay, to ascertain patient compliance and quality of patient information provided for brace usage, reflect whether we need to change our practice on TLSO brace use.

Methods

Data collected over 18-month period (from Jan.2020 to July 2021). Patients were identified from the TLSO brace issue list of the orthotic department, imaging (X-rays, CT, MRI scans) reviewed to confirm fracture and records reviewed to confirm neurology and non-operative management. Patient feedback was obtained via post or telephone consultation. Inclusion criteria- patients with single or multi -level thoracolumbar osteoporotic or traumatic fractures with no neurological involvement treated in a TLSO brace. Exclusion criteria- neurological involvement, cervical spine injuries, decision to treat surgically, concomitant bony injuries.

Results

72 braces were issued in the time frame with 42 patients remaining in the study based on the inclusion/exclusion criteria. Patient feedback reflected that 62% patients did not receive adequate advice for brace usage, 73% came off the brace earlier than advised, and 60% would prefer to be treated without a brace if given a choice. The average increase in length of stay was 3 days awaiting brace fitting and delivery. The average total cost burden on the NHS was Â£127,500 (lower estimate) due to brace usage.

Conclusion

If there is equivalence between treatment with/without a brace, there is a need to rethink the practice of prescribing brace for all non-operatively treated fractures and a case-by-case approach may prove more beneficial.

5

An Evaluation of the Effectiveness of the Ultrasonic Bone Stimulator in a Major Trauma Centre

Louise Chapman

Saad Azhar, Rajesh Shah

Hull Royal Infirmary

Background

The use of ultrasonic bone stimulators appears to be waning. This trend is apparent in our unit, a major trauma centre serving a population of 600,000. NICE have approved the device for non-union or delayed healing of fractures. However, high quality evidence to support its use is lacking and most conclusions are derived from a small selection of RCTs and case series.

Aims

Our aim was to identify whether the device was effective in promoting healing in patients who developed non-union and the proportion of patients who ultimately required surgery.

Methods

Data was collected retrospectively between 2017 and 2021 at Hull Royal Infirmary, a major trauma centre. Any patient over the age of 18 with any fracture of the upper or lower limb requiring the device for non-union was included. Patients on whom the device was used following an osteotomy or fusion were excluded.

Union was defined as patients showing evidence of callous on subsequent x-rays or clinical resolution of symptoms.

Results

65 patients met the inclusion criteria, of these 26 were excluded due to a variety of reasons. 39 patients were included for analysis, 21 male (53.8%) and 18 female (46.2%). The average age was 46.2 with a range of 23 to 86 years old.

The most common fractures in our cohort were Tibia (9, 23.1%), Scaphoid (8, 20.5%), Humerus (7, 18.0%), Femur (5, 12.8%), Radius (4, 10.3%), Ankle (3, 7.7%), Ulna (2, 5.1%), Metatarsals (1, 2.6%).

30 of 39 patients (76.9%) went on to successful union with an average treatment time of 26.6 weeks.

Sub-analysis showed no significant trend in union amongst different age cohorts; 20-40 years (66.7%), 40-60 years (84.2%), 60-80 years (80%). Smoking, comminuted or open fractures did not appear to affect the union rate following use of the device.

Surgery was ultimately required in only 6 patients (15.4%).

Conclusions

120 Despite the waning trend in our department, our results show a good union rate with the

ultrasonic bone stimulator. We are therefore renewing our tender and encouraging clinicals to use the device where there is an indication.

Clinical outcomes following major trauma for patients with a diagnosis of depression: a large UK database analysis

Jamie Large

David N Naumann, Jodie Fellows, Clare Connor, Zubair Ahmed

Kingston Hospital NHS Foundation Trust

Introduction

More than a quarter of the UK population are affected by depression during their lifetime. For major trauma patients, postinjury depression can result in poorer long-term outcomes, but there is limited evidence regarding outcomes for patients with pre-existing depression.

Aims

This study aimed to investigate the relationship between a diagnosis of depression prior to hospital admission and clinical outcomes after major trauma.

Methods

Trauma patients at a UK major trauma center were identified during a 6.5-year period using the Trauma Audit and Research Network database. Patients with Injury Severity Score >15 who did not die in the emergency department (ED) were included. Logistic regression models were used to compare in-hospital mortality (excluding ED), requirement for surgery, and length of stay (LOS) between those with depression and those without.

Results

There were 4602 patients included in the study and 6.45% had a diagnosis of depression. Depression was associated with a significant reduction in mortality (OR 0.54, 95% CI 0.30 to 0.91; $p=0.026$). However, patients with depression were more likely to have longer LOS (OR 124, 95% CI 8.5 to 1831; $p<0.001$) and intensive care unit LOS (OR 9.69, 95% CI 3.14 to 29.9; $p<0.001$). Patients with depression were also more likely to undergo surgery (OR 1.36, 95% CI 1.06 to 1.75; $p=0.016$).

Conclusions

A pre-existing diagnosis of depression has complex association with clinical outcomes after major trauma, with reduced mortality but longer LOS and higher likelihood of surgical intervention. Further prospective investigations are warranted to inform optimal management strategies for major trauma patients with pre-existing depression.

29

An audit Of Code Red Activations In Major Trauma Patients At A Level One UK Major Trauma Centre

Benjamin James Harris

Justine Lee

University of Birmingham

Introduction

Uncontrolled haemorrhage after trauma is a major cause of death. To better treat patients requiring massive transfusions, code red protocols have been developed. These use criteria to anticipate large transfusion need and allow better preparation by the trauma team.

Tranexamic acid is an antifibrinolytic agent used in bleeding trauma patients to prevent complications. It should be given within three hours of injury to all major trauma or actively bleeding patients. In practice, prehospital crews generally give patients a TXA bolus, and patients are then placed upon an intravenous TXA infusion upon reaching hospital.

This project aimed to audit whether the code red criteria was correctly being used to identify code red patients, and whether tranexamic acid was being administered correctly to these patients.

Methods

A retrospective audit and review was performed on all patients causing a code red activation at the Queen Elizabeth Hospital Birmingham between 01 Jan 2021 and 31 December 2021.

Routinely collected non identifiable data was captured from electronic patient records. The prehospital and trauma noting was assessed to ascertain TXA administration and timings.

Results

There were 78 code red patients. The majority (85.9% (67/78)) of code red activations occurred prehospitally, with the most common reason for activation being suspicion of active haemorrhage (96.2% (75/78)). 93.6% (62/78) of patients had either a systolic blood pressure <90mmHg, or an absent radial pulse. Finally, 41.0% (32/78) had insufficient response to fluids. Only one patient (1.3%) had no indication for code red activation identifiable from the available noting.

Tranexamic acid was given in 94.9% of the 78 code red patients (74/78), of which 94.6% (70/74) was prehospital. All administration was within three hours of injury. 68.0% (53/78) of patients were subsequently given a TXA infusion.

Conclusions

Code reds were triggered appropriately, and usually due to clinical judgement. Most, but not all patients received TXA boluses, and all of these were within the three-hour window. There is room for improvement in those who did not, and especially in regard to giving patients their subsequent TXA infusion once in hospital.

110

Lateral versus Crossed K-wires for Paediatric Supracondylar Fractures Have Similar Results in Terms of Radiological Stability

Bakhat Yawar

Bakhat Yawar, Mohammad Noah Khan, Ayeisha Asim, Ammal Qureshi, Ali Yawar, Ahmad Faraz, Andrew McAdam, Sami Mustafa, Brian Hanratty

Altnagelvin Area Hospital

Background:

Supracondylar elbow fractures are common in children and have equal incidence in males and females. They can either be of flexion or extension type fractures. We aimed to ascertain radiological stability with lateral and crossed wires in this study. Complications arising from management were also assessed

Methods:

We first identified all patients who presented with this injury from 1st January, 2020 until 28th February, 2022. Basic demographic data and type of operation was noted. Baumann angle (BA) and lateral capitellohumeral angle (LCHA) were measured intra-operatively and X rays done at final clinic appointment. The mean of these angles in lateral and crossed wire groups was compared using paired sample t-test. Unpaired t-test was used to compare means of both groups with normal values for these angles based on previous studies (BA=71.5+/- 6.2 degrees, LCHA= 50.8+/-6 degrees).

Results:

50 patients were admitted during this time. 33 patients had lateral wires and 17 had crossed wires for fixation. No significant change was noted in the mean BA and mean LCHA in both groups on X rays done intra-operatively and final clinic follow-up (no loss of reduction). No significant difference was noted between BA and LCHA noted for both groups at final clinic follow-up with previous studies outlining normal values for these angles. No cases of iatrogenic neurovascular injury were identified. 4 patients (8%) were referred to physiotherapy due to stiffness.

Conclusion:

Good radiological stability was noted with both treatment modalities with BA and LCHA within normal limits at final clinic follow-up. No loss of reduction was noted with both techniques and no risk of iatrogenic nerve injuries was noted in experienced hands.

24

Systematic review for the antibody response of early vs delayed administration of pneumococcal polysaccharide vaccine after major trauma.

Dr Abdullahi Mohamed

Dr James Murrell, Dr D Mortiboy, Mr A Mahmood

Queen Elizabeth Hospital Birmingham (QEH)

Systematic review for the antibody response of early vs delayed administration of pneumococcal polysaccharide vaccine after major trauma.

Introduction

It is believed that early administration of pneumococcal conjugate vaccine reduces the risk of meningitis after major trauma and is the current practice at most trauma centres. Pneumovax is usually administered within the first 24-48 hours after major trauma, particularly when a head injury with CSF leak or base of skull fracture presents. It is well recognised that the human immune system works sub optimally following major trauma, however the antibody response and optimal time for vaccination have not been established.

Aim

Our aim is to systematically review current literature on the antibody response in pneumovax administered within the first 48 hours vs delayed administration of 1-2 weeks and help establish national guidelines or indeed design a study to test the response in this patient cohort.

Methods

Current literature was searched for papers related to pneumovax antibody titres in trauma patients. The search was conducted on the Medline, Embase, Cochrane and Pubmed databases. A total of 92 papers were identified, of which 39 papers remained and will be reviewed to exclude those papers not relevant to our aim.

Results

There are limited papers written on the effect of delaying pneumovax administration by 1-2 weeks in comparison with early 24-48-hour administration in major trauma patients. (TBC).

Conclusions

There is not enough evidence to show the optimal pneumovax administration time and further research is required to enable best practice guidelines for major trauma patients? (Hypothesised outcome pending completion = End of Sept)

109

Early complication profile of Femoral Neck System (FNS): Is peri-implant sub-trochanteric fracture an associated risk with the implant or implantation technique?

Uday Mahajan

Mr. Mo Remtulla, Mr. Uday Mahajan, Mr. Ravichandran Karthikeyan, Mr. Andrew Grazette, Mr. Ross Fawdington, Mr. Julian Cooper

UHB NHS Foundation Trust

Introduction:

Femoral Neck System was introduced by DePuy Synthes in 2017 as a minimally-invasive fixation device option for fixing intra-capsular fracture neck of femur (FNF), providing superior angular stability when compared with multiple screw fixation (MSF) and having a reduced implant footprint on lateral femoral cortex when compared to a dynamic hip screw (DHS).

Incidence of peri-implant fractures (PIF) is reported around 2.7% for DHS and ranging from 2.4 - 4.4% after MSF for hip fracture patients treated with osteosynthesis.

Aim(s):

The aim of our study is to study early complications following FNS implantation and analyse the risk factors associated with PIF.

Methods:

We collected data of all the patients who underwent FNS procedure at a Major Trauma Centre in Birmingham, both prospectively and retrospectively from March 2020 - March 2022. We studied their demographic profile and analysed the incidence of complications requiring revision surgeries. We also analysed the risk of sustaining PIF with anterior positioning of the shaft screw.

Results:

We analysed 44 cases of FNS, with data being collected prospectively (n=28) and retrospectively (n=16). Mean age of patients was 75 years (range 36-102).

Out of 44 patients undergoing FNS procedure, five required revision. One patient having Pauwel type 3 fracture configuration had implant cut-out within 30 days post-operatively, three had peri-implant fractures within 60 days, and one had avascular necrosis within 90 days.

The odd's ratio for shaft screw drilling in anterior third of the femoral shaft causing PIF is 39 (95% CI 2.40 to 634.69, p-value 0.01067) with NNT (Harm) of 2.050 (95% CI = 3.257 to 1.496).

Undertaking Cox regression, showed a hazard ratio of 1.13 (p = 0.0108) that equates to a shift of the drill-hole by 1% anteriorly increasing the risk of PIF by 13%.

Conclusions:

The risk of PIF with FNS increases with shaft screw hole drilled in anterior third. We recommend optimal positioning of the FNS angle guide on the lateral cortex in middle third of proximal femur under direct vision to reduce the risk of PIFs. We also highlight the importance of following sequential insertion of shaft locking screw before inserting the anti-rotation screw to prevent eccentric placement of locking screw.

Pilot implementation of a T&O-led outpatient pathway utilising Bier block regional anaesthesia for distal radius fracture manipulation

Anisha Tolat

DLJ Morris, H Daoud, M Abdalla, T Calderbank, AA Tambe, S Milner, DI Clark

Royal Derby Hospital

Introduction: BOAST Guidelines recommend distal radius fractures (DRF) manipulation should be undertaken using regional anaesthesia. We report 1-year outcomes of a pilot T&O-led outpatient pathway for manipulation of DRF amenable to non-operative management.

Aim: Report pilot pathway implementation and 1-year results.

Method: Retrospective review of DRF managed in a teaching hospital 01/04-30/06/21 including manipulation requirement, specialty performing manipulation, plaster index (PI), time spent in ED and ORIF requirement.

Pilot pathway introduced 07/21 involving T&O-led Bier block regional anaesthesia for manipulation of suitable DRF utilising available resources. Initial focus upon patients presenting Sunday-Wednesday with next day manipulation facilitated and 8 manipulation slots available weekly. Post-pathway review included slot utilisation, pathway compliance and patient satisfaction.

Results: Retrospective review identified 58 patients underwent manipulation (34 ED, 24 T&O) with no regional anaesthesia in ED-led and 5% use in T&O-led. Significantly reduced ORIF (50% vs 21%; $p < 0.03$), PI (79% vs 53% PI < 0.8) and time spent in ED (258 vs 361 minutes; $p < 0.04$) in T&O-led. Results prompted pilot pathway introduction.

244 DRF managed via pilot pathway in its first year with 26% ORIF requirement. Compared to ED manipulation ORIF requirement (50%), pathway avoided 56 DRF ORIF; equating to 14 days of trauma operating. Additionally, 385 ED patient hours were avoided and all surveyed patients reported excellent satisfaction. No Bier block complications. 46% of suitable DRF manipulations performed via pathway in initial 3 months.

56% manipulation slot utilisation with mean daily slots utilised 1.1. Highest utilisation on Monday (61% fully booked) and in January and June (mean Jan 1.6; June 1.7). 50% met pathway standard of next day manipulation. Mean days to manipulation from injury was 2.1 (range 0-11) with 5% receiving same day manipulation. ORIF rate in $\hat{\alpha}\% \times 1$ day to manipulation was 31% versus 21% in > 1 day.

Conclusion: A T&O-led pathway for manipulation of DRF utilising Bier block yields excellent patient satisfaction and decreased ORIF requirement. Following pilot pathway success, we aim to expand the service to facilitate all suitable DRF manipulations.

Outcomes in repair of traumatic rotator cuff tears following dislocation: A comparative cohort study versus traumatic tears not involving dislocation

Nikita Minhas

Mr Amol Tambe, Mr Arya Mishra, Mr Daniel Morris, Miss Lisa Pitt, Mr Marcus Bateman

University Hospitals of Derby and Burton NHS Foundation Trust

Background: The BESS/BOA Patient Care Pathway recommends early cuff imaging following traumatic dislocation, with surgery indicated in patients with traumatic tears. A pathway was established in our unit to assess shoulder dislocations in patients with ultrasound scan and appropriate rotator cuff assessment.

We aim to assess whether their outcomes are equivalent to patients with traumatic tears not involving dislocation.

Methods: Patients who had undergone RCR were identified from a retrospective review of our shoulder dislocation database (2014 to 2021), as our study group. A control group was identified that sustained cuff tears through other traumatic injuries. Electronic records were reviewed to assess injury type and outcome, based upon the Oxford Shoulder Score (OSS), at a minimum of 1 year post-operative.

Results: 31 patients (median age 69, range 39-90 years) were identified, with 16 male and 15 female patients. All patients had radiologically confirmed rotator cuff tears; 1 patient had an additional Bankart lesion. 16 patients had a single tendon tear, 11 patients had 2 tendons and 3 patients had 3 tendons tear. 30 patients had arthroscopic repair and 1 patient had an open repair. 1 patient was found to have an irreparable cuff intra-operatively; 2 patients had a re-tear and had a revision cuff repair at 10 and 6 months respectively. 1 patient had a RTSR due to cuff deficiency 16 months post-op.

48 patients were identified from the control group (median age 54, range 31-78 years), with 14 female patients and 34 male patients. 9 patients had a re-tear, off which 3 patients had further surgery; 1 patient developed cuff arthropathy. 1 patient had port infection and 2 patients developed a frozen shoulder.

The mean post-operative OSS was 33.3 in the study group vs 20.8 in the control group ($p < 0.0001$).

Conclusion: This small cohort study confirms good compliance to the BESS pathway. We are surprised by better post-op outcomes in patients with dislocation versus without dislocation.

These are potentially multifactorial and will be discussed further in the presentation.

A Technique for planning the Application of Buttress Plate in the Medial Tibial Plateau Using the Preoperative CT Scan.

Parag Panwalkar, K Veravalli, R Gwynn, M.Tofighi, A Mofidi

Morrison Hospital , Swansea Bay University Health Board

Abstract:

When operating on tibial plateau fracture especially medial tibial plateau, it has regularly been said "where do I put my thumb to reduce the fracture". This refers to the ideal placement of the buttress device to hold the fracture till union. The aim of this study was to see if one can identify this sweet spot using a CT scan.

Methods:

Forty-five tibial plateau fractures with medial plateau involvement were identified and included in the study. The preoperative CT scans were analysed and the medial plateau involvement pattern was classified based on modified radiological classification by Yukata et-al of stress fracture of medial tibial plateau. The involvement of part of plateau was compared with position of buttress plate position which was classified as medial posteromedial or both. Presence and position of the buttress was compared with ability to achieve and hold the reduction of the fracture till union.

Results:

Thirteen fractures were type-1 fracture, 19 fractures were type-2 fracture and 13 fractures were type-3 fracture. Sixteen fractures were buttressed correctly according to the potential deformity and twenty-six fractures were not buttressed and three fractures were partly buttressed correctly. No fracture was over buttressed!

When the fracture was buttressed correctly the rate of the malunion was 0%. When fracture was partly buttressed 33% were anatomically united and 66% were united in the plane of buttress. When buttress was not used, 14 were malunited, one malunited in one of the two planes of deformity and eleven anatomically healed (of which 9 were non displaced!). Buttressing resulted in statistically significant lower mal-union rate ($\chi^2=7.8$, $p=0.0052$)

Conclusion:

The classification based on involvement of medial condyle can identify the placement of buttress plate in the tibial plateau. The correct placement of the buttress plate results in predictably satisfactory union. There may be a correlation between injury shape of the tibial plateau and the fracture type.

7

Is There A Difference In Mortality Between Operative And Non-Operative Management Of Tibial Fractures In The Elderly Population?

Saad Azhar - UMAR SAID PRESENTING

Naveed Khan, Nimisha Francis, Jason Ting, Rajesh Shah

Background

The mortality from tibial fractures in the elderly population is equal to that of hip fractures. However, a large proportion of these patients are still managed non-operatively. A long-leg cast renders the patient bed-bound which increases the risk of serious complications. Furthermore, compliance with non-weightbearing in this age group is poor leading to healing complications. Operative management has the ability to reduce these risks as it allows early weightbearing.

Methods

Data was collected retrospectively between 2015 and 2019 at Hull Royal Infirmary, a major trauma centre. Patients aged 65 and over with a tibial fracture requiring long-leg cast treatment were included. Mortality was recorded at 1 year.

Results

A total of 46 patients were identified, 9 male (19.6%) and 37 female (80.4%). 23 of 46 patients (50%) were managed operatively with either an intramedullary nail, hindfoot nail, frame or open reduction and internal fixation. 23 of 46 patients (50%) were managed non-operatively in a long-leg cast for between 8 to 12 weeks.

3 of 23 patients (13.0%) in the operative group went on to develop mal-union or non-union compared with 9 of 23 patients (39.1%) managed non-operatively.

The 1-year mortality for patients managed operatively was 8.7% (2 of 23 patients) compared with 34.8% (8 of 23 patients) in the non-operative cohort ($p=0.018$). This was statistically significant.

Conclusions

Elderly patients managed non-operatively in a long-leg cast have a significantly higher mortality rate. In this population, risks from immobility are high and return to pre-morbid function reduces with an increasing non-weightbearing period. The mortality can be reduced if these fractures are managed operatively with an aggressive approach as with hip fractures. To our knowledge, there is no prospective study comparing the two treatments in this population, so we propose this is an area worthy of further study to draw definitive conclusions.

118

The Prevention of Conflict-Related Ocular Injuries

Samatar Osman

Major Alastair Beaven, Professor Zubair Ahmed

University of Birmingham College of Medical & Dental Sciences

Introduction: Conflict-related ocular injuries (CROIs) are on the rise due to increasing warfare urbanisation & explosive artillery. There are many long term complications of CROI and combat eye protection (CEP) compliance is low amongst the UK military setting.

Aims: To explore the types of CROIs, ocular protection strategies and will examine the available literature to formulate recommendations in its use.

Methods: Three databases (PubMed, EMBASE and Google Scholar) were explored to assess the available military data with regards to the incidence of CROI and patterns of injury. Qualitative studies were also examined to explore the factors influencing CEP compliance.

Results: Of all soldiers who suffered a CROI, 15.5% of UK military personnel in Iraq and Afghanistan deployed between 2004-2008 had a globe rupture and 19% had intra-ocular foreign body injury pattern. Another retrospective study highlighted that UK servicemen not wearing CEP were 36 times more likely to sustain eye injury, with 7 preventable deaths and CEP reduced facial injuries (bone and soft tissue) by 15% ($p < 0.01$). Qualitative studies have summarised the barriers to CEP use which include: restriction of vision, poor perception about CROI risk, social stigma and lack of adaptations available for extreme environments.

Conclusions: CEP is an effective tool which decreases the incidence and severity of CROI.

Compliance is a major hurdle in military personnel wearing CEP. Recommendations to improve compliance include: regular CROI and CEP education programme for all UK soldiers, training on pitfalls of CEP and how to overcome them, increased availability of CEP customised models for extreme environments and for those with visual impairment, and improved consultation between CEP developers and military personnel.

Identifying activation criteria for Right Turn Resuscitation in UK civilian Code Red trauma patients at a Major Trauma Centre

Jake Kilmartin

Ms Justine Lee

University of Birmingham

Introduction

During Operation HERRICK in Afghanistan, the most severely injured patients bypassed the Emergency Department (ED) and instead were taken to theatre, where they would undergo Damage Control Resuscitation. This protocol, known as Right Turn Resuscitation (RTR), saved the lives of countless expectant traumatised patients. RTR is not used in UK civilian practice, and activation criteria for civilian RTR are not defined.

Aims

To identify activation criteria for RTR in Code Red trauma patients at a UK Major Trauma Centre, thus aiding decision making and improving patient outcomes for UK civilian Code Red trauma patients.

Methods

Data were collected as a retrospective, single-centre, cohort study. Records were examined of the Code Red trauma patients attending a UK Major Trauma Centre over a 12-month period from 1st January to 31st December 2021. Patient demographics, mechanism of injury, pre-hospital findings/interventions, and hospital findings/interventions were analysed. Patients were analysed in groups according to whether they had (1) been conveyed straight to theatre on arrival, or (2) had CT imaging before urgent theatre, or (3) not attended theatre urgently. Metrics in these groups were then compared to identify potential activation criteria for RTR. Data also underwent statistical testing.

Results

78 patients were included in the study. 14 went straight to theatre without CT scan (RTR), 27 went to CT followed by theatre, and 31 went to CT but did not go to theatre. 6 patients died in the ED. Metrics associated with patients going straight to theatre without CT (RTR) included: penetrating mechanism of injury, traumatic cardiac arrest, pre-hospital/ED resuscitative thoracotomy, high blood product requirement, traumatic amputation, and severely deranged physiology (acidosis, high lactate, low/undetectable blood pressure).

Conclusions

There are clear patterns in the data groups that could allow activation criteria for RTR to be defined. This would help identify appropriate patients for RTR, reducing the time from injury to definitive damage control surgery, and improve outcomes for the most severely injured UK civilian trauma patients.

83

A narrative of Code Red Major Trauma Patients At A Level One UK Major Trauma Centre

Benjamin James Harris

Justine Lee

University of Birmingham

Introduction

At the Queen Elizabeth Hospital Birmingham (QEHB), a "Code Red" protocol has been developed to anticipate the need for massive transfusions in trauma patients. This is activated using predefined criteria including suspicion of active bleeding, low blood pressure, absent pulses and transient or no response to fluid resuscitation. This project aimed to investigate the demographics and outcomes of these patients, and explore how resuscitation was performed.

Methods

A retrospective audit and review was performed on all patients causing a code red activation at the QEHB between 01 Jan 2021 and 31 December 2021. Routinely collected non identifiable data was captured from the electronic patient records.

Results

There were 78 code red patients, of which 46.2% (36/78), were road traffic collisions and 34.6% were stabbings (27/78). The majority (85.9% (67/78)) of code red activations occurred prehospitally. The mean time from injury to arrival to hospital was 74 minutes (SD = 35 minutes, n = 68).

The mean number of blood product units transfused in the 78 code red patients was 14.1 (SD = 14.4). Four patients (5.1%) did not receive any blood transfusion. Despite adequate initial resuscitation, Hb subsequently fell below 100g/L in 69.7% (46/66) of patients, and on average it took 21.6 days to recover. Transfusion was guided by blood gases in 89.7% (70/78), laboratory results in 91.0% (34/78), and ROTEM in 43.6% (91/78).

Damage control surgery was performed in 48.7% (38/78) of patients, with 74.4% (58/78) requiring admission to the intensive care unit. The survival rate for the code red patients was 65.4% (51/78). Of the patients that survived, the median length of hospital stay at QEHB was 19 days (IQR = 20.75 days). Overall there was a 65.4% survival to discharge.

Conclusions

Code red patients at the QEHB had a wide range of demographics as outlined above. Roughly half required damage control surgery, and most needed ITU admission. ROTEM was used less frequently despite its availability. Resuscitation targets were usually met rapidly. However, incomplete noting and fluctuation of blood results made this research question difficult to answer. More comprehensive results may be obtained through a prospective study.

112

Assessment of CT Scan reports as per standardized reporting guidelines

Dr Utkarsh Sharma

Queen Elizabeth Hospital, University Hospitals Birmingham

Introduction: Prompt diagnosis forms the mainstay of management of any trauma patient. In addition to clinical assessment, imaging forms an important component. In most developed settings, CT scans play a vital role in arriving at the patient diagnosis. In addition to including the patient's details, it should also take into account patient's clinical information, prior investigations (radiological and non-radiological) and the management plan. The reporting should follow predefined standards to improve the quality of the diagnostic process. Consequently, standardization of this component of the diagnostic chain can notably improve patient care.

Aim: To assess reporting of various CT scans as per the reporting standards given by the Royal College of Radiologists which include every department aiming to deliver actionable reporting, every report answering the clinical question, including a definitive or differential diagnosis when an abnormality is described and giving appropriate advice for next step of management in patient's best interest.

Method: A retrospective review of Body CT scans was done across UHB in the month of October in the year 2021. 100 reports were selected at random, out of which 50 were from A&E and 50 were Inpatient reports. Data collection was done using CRIS (online portal). Outpatient scans were not included in the study. Normal CT scans, CT Head and CT Intracranial Angiograms were excluded from our study.

Result: Out of the 100 reports " 97 reports met the criteria of our audit. 1 inpatient CT report and 2 A/E reports did not meet the specified criteria.

Conclusion: After the 1st Audit, we are able to achieve almost 97% of reporting standards as compared to 95 % previously in a span of 3 months.

114

Management of Open Fractures - Plastic Surgery and Orthopaedic Surgery Trainee Survey

Kin Seng Tong

Sharmila Jivan

Plastic surgery registrar

Introduction:

The standard of care for open fractures is joint management between plastic surgery and orthopaedic teams. The British Orthopaedic Association (BOA) and British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS) have published guidance on evidence-based practical approach to management of open fractures. The latest update was released in September 2020 and ties in with the BOAST 4 orthopaedic guidelines on open fractures which were published in 2017.

Aim:

We aim to survey the awareness and knowledge of plastic surgery and orthopaedic trainees at all levels on the management of open fractures based on the BOAST 4 and BOA/BAPRAS 2020 guidelines.

Methods:

We conducted objective, face-to-face surveys of plastic surgery and orthopaedic trainees assessing their awareness and knowledge of BOAST 4 and BOA/BAPRAS guidelines. Questions included the initial assessment and wound coverage, timing and choice of antibiotics, timing of and surgical approach to wound excision, timing of definitive soft tissue coverage, assessment and management of vascular injuries, and assessment and management of compartment syndrome.

Results:

Although most trainees were aware that there are guidelines for orthoplastic management of open fractures, detailed knowledge of the BOA/BAPRAS guidelines was lacking amongst plastic surgery and orthopaedic trainees, and between grades. We present the detailed results of the survey based on specialty and grade of survey participants.

Conclusions:

We recommend that both Orthopaedics and Plastic Surgery should consider developing specialty-specific webinars and/or mandatory e-learning modules on the management of open fractures highlighting the details of the BOAST 4 and BOA/BAPRAS guidelines. Updated easy access smartphone apps would also be a useful aid for those requiring quick reference.

117

Comparative Study of Trauma Laparotomies Before and After Establishment of a Major Trauma Centre

Francis Lee

Beibit Bashabayev (CT3), Darren Geoffrey (CT2), Susan Yoong (Consultant)

Northern Ireland Medical and Dental Training Agency

Introduction: Significant morbidity and mortality is associated with abdominal trauma. This study assesses outcomes and learning points of a newly established major trauma centre (MTC) for trauma patients undergoing emergency laparotomy.

Aims: The primary aim assesses the perioperative pathway and outcomes of trauma laparotomy before and after the establishment of the only MTC in Northern Ireland in September 2020. The secondary aim compares outcomes of urgent trauma laparotomies performed within 24 hours of admission with those delayed after 24 hours.

Methods: A retrospective data analysis of patients undergoing trauma laparotomies from September 2019 to March 2022. Exclusion criteria includes patients transferred from local district hospitals and cases with incomplete data.

Results: This study included 14 patients before, and 30 patients after MTC establishment. Following MTC establishment, mean time to CT improved from 34 to 24 minutes, and mean time to consultant CT report from 496 to 333 minutes for patients requiring urgent trauma laparotomy; however mean time to theatre was 242 compared to 444 minutes. Regarding outcomes, mean length of critical care stay for urgent trauma laparotomies was 10.2 days with overall stay of 21.3 days prior to MTC establishment, compared to 14.8 days and 21.1 days following.

There were 5 delayed trauma laparotomies (>24 hours from admission), the mean time to trauma laparotomy was 3.2 days. These patients required a mean total stay of 31.2 days, with 3 patients requiring mean critical care stay of 18 days. For urgent trauma laparotomies, average length of stay is 21.2 days with an average critical care stay of 12.6 days

Conclusions

Establishing a MTC has streamlined national trauma protocols such as time to CT and time to consultant CT report, however time to surgery in urgent trauma laparotomy has increased and this needs further evaluation.

Delaying trauma laparotomy results in worse outcomes compared to operating <24 hours from admission. Individually these cases highlight the importance of a high index of suspicion for intra-abdominal visceral injuries in the context of non-specific CT findings in blunt trauma. Further study is required to assess the impact of delayed trauma laparotomy on patient outcomes.

122

Improving the efficiency of Plastics Surgery Services at a UK Major Trauma Centre through a local anaesthetic pathway: Assessing the implementation and sustainability of a value-based healthcare model

Djamila Rojoa

Eva Nagy, Kshemendra Senarath-Yapa

St Mary's hospital, Imperial College NHS Trust

Introduction: The National Healthcare System (NHS) has strived to adopt a value-based healthcare over a volume-based one over the last decade(1). Whilst unintentional, the unparalleled pressure imposed by the pandemic on an overburdened NHS led to a fortuitous adoption of a "one-stop-shop" trauma service. The local anaesthetic (LA) pathway emerged from the demand for a see-and-treat approach, which has been implemented at St Mary's hospital during the pandemic, and now forms part of our daily upper limb trauma services.

Aims: We aimed to assess the adoption and implementation of an LA pathway during the pandemic and the sustainability following the scale-up of this innovative pathway through the allocation of a dedicated trauma clinic.

Methods: Retrospective data collection on trauma procedures delivered over the consecutive lockdown periods was collected and compared with prospective post-pandemic data over an equal time period to assess the efficacy of the LA pathway in terms of time, staffing and cost-effectiveness compared to main theatre services.

Results:

156 cases were performed during the pandemic under the LA pathway, with the most common procedure being wound excision and washout(32%), nailbed repairs(26%), extensor repairs(6%) and MUA(5%). With the post-pandemic clinic set-up, there were 132 patients who underwent procedures under LA, with 73% male and a mean age 42.4(SD15.6). The most common procedure was laceration and animal bite wounds debridement(33%) followed by nailbed repairs(25%), manipulation of hand fractures(11%), extensor tendon repairs(8%) and terminalisation(5%). Procedures were mainly performed by registrars(75%). This is approximately equivalent to 1000 hours/month, with an estimate main theatre cost of £561 000/month(2) which has been significantly reduced. Furthermore, optimisation of resources ensures as non-active theatre main time (35%) and pre/post-operating time (20%) are reduced(2).

Conclusions:

Our findings support the use of the LA pathway adopted during the pandemic in our daily practice. It improves the value in trauma care delivery, with comparable outcomes. It also demonstrates a proven cost-effectiveness and optimisation of resource allocation.

126

Can minimally invasive surgery be maximally effective in abdominal trauma?

Athanasius Ishak

Sara Flod, Sanjay Purkayastha, Barry Paraskeva, Christos Tsironis, Dan Frith, Maryam Alfa-Wali

Introduction:

Laparoscopy is an established surgical modality, however, it has not been widely adopted in the trauma setting. We hypothesised that laparoscopy can be safe and effective for managing abdominal trauma.

Aim: To review the management and outcomes of patients with abdominal trauma who underwent trauma laparoscopy at St Mary's Hospital, London, UK (Level 1 Major Trauma Centre).

Methods:

This retrospective study included patients who underwent trauma laparoscopy between 2017-2022. Patients were identified from the Trauma Audit & Research Network (TARN) registry and a local prospectively maintained database. Data such as age, gender, co-morbidities, injury type, Injury Severity Score (ISS), radiological findings, time to theatre, intraoperative findings, indications for conversion to laparotomy, missed injuries, complications, mortality, and length of stay were collected.

Results:

We included 146 patients of whom 90% were male with an average age of 28 (21-44) years. The majority (74%) had penetrating trauma (mostly stabbing) while 26% sustained blunt trauma (mostly road traffic accidents). Trauma patients had ASA 2, GCS 14, ISS 18 (10-26). In terms of injuries, 93 had visceral injuries, 8 had vascular injuries and 50 had no significant intra-abdominal injuries (no active bleeding or visceral injury). In 16 cases further injuries were identified after conversion to laparotomy. The mortality rate was 1.4% and 39 patients had complications: 29 Clavien-Dindo 1, 8 Clavien-Dindo 3a and 2 Clavien-Dindo 3b. The average length of stay was 6 (4-11) days. Non-medical reasons for prolonged hospitalisation impacted 10 patients who incurred an additional stay of 2 (1-3) days.

Conclusions:

In selected cases, laparoscopy is safe and effective for managing abdominal trauma. As a significant proportion of patients did not need therapeutic intervention, laparotomy can be avoided with the use of laparoscopy.

108