Expert Group Meeting-Trauma

Why was Trauma Summit needed?

There are no clear guidelines/algorithms to assist acute management of trauma patients in the Indian setting. One of our visions is to assist young doctors in acute care medicine in enabling them to provide better acute medical care. Looking into this fact in Indian context, this time we planned to a conduct advisory board meeting for the development of algorithms to address the unmet needs in managing acute trauma leading to head, spinal cord and limb injuries.

Expert Group Meeting:

Core Advisory Group meeting was conducted by Asian Society of Continuing Medical Education on 13th March 2016 at Hotel Sofitel, Mumbai. In Meeting 15 KOL`s (i.e. Trauma Surgeon, Emergency Specialists, Orthopaedic & Spine Surgeon) from all over India where present to discuss and finalize the content and prepared guidelines/algorithms to assist acute management of trauma patients.

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The Key Opinion Leaders (KOLs) for the meeting

Neuro Surgeon's:

Dr. Batuk Diyora,

Professor (additional) at Department of Neurosurgery, L.T.M.M. College and L.T.M.G. Hospital, Sion, Mumbai

Dr. Shailesh A V Rao ,

Consultant Neurosurgeon, Advanced Neuro Science Institute, BGS Global Hospitals, Bangalore

Trauma Surgeon:

Dr. Sanjay Shah,

Trauma Surgeon at CIMS Hospital, Ahmedabad

Emergency Specialists:

Dr. Sanjay Shah,

Director, Emergency Medicine, MIMS, Kozhikode

Dr. T. V. Ramakrishnan,

Anesthesiologist, Sri Ramachandra Medical Centre, Chennai

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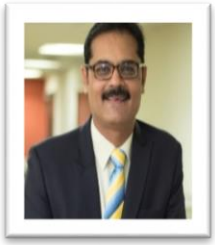

Dr. Mahesh Joshi,

Fellow in Emergency Medicine, Apollo Health City Campus, Hyderabad

Dr. Satish Dharap,

Incharge Trauma Intensive care unit, L.T.M.G Hospital, Sion, Mumbai

Dr. Arijit Bose

HOD &Senior Consultant in Emergency Medicine, Apollo Gleneagles Hospital, Kolkata

Orthopaedic Surgeon:

Dr. Ram Prabhoo

Consultant Orthopaedic Surgeon, Bombay

Dr Anil K. Jain

Professor and Head, Dept. Orthopaedics, UCMS & GTB Hospital, New Delhi.

Dr. Gurinder Bedi

Orthopaedic at Fortis Hospital, New Delhi

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Spine Surgeon:

Dr. Saumyajit Basu,

Spine Surgeon, Park Clinic and Kothari Medical Centre, Kolkata.

Dr. Ketan S. Khurjekar

Chief Spine Surgeon, Sancheti Hospital, Pune.

Dr. Ram Chadha

Prof & Head - Department of Orthopaedics at the K. J. Somaiya Hospital & Medical College, Mumbai.

Topics for discussion:

1. **Acute Assessment and Management Long Bone Injuries** the scientific session deliberated upon: -

- Data from Norwegian population indicated that the overall incidence of long bone fractures per 100,000 per year was 406 (95%CI: 395 to 417)
- The goal of prehospital care is to establish airway, ventilation and fluid resuscitation and quick transfer of patient to an appropriate trauma center
- The acute assessment of the patient should be done using step-wise screening techniques of CDC recommendations at the injury site, to find serious injuries
- All the screened patients are assessed for life-threatening injuries; BLS and resuscitation take priority over extremity problems
- A systematic examination of all bones and joints of the patient has to be done to identify fractures and dislocations
- Once the general condition is stable, active extremity hemorrhage should be sought and controlled
- Wound care, temporary immobilization and analgesics form the other aspects of acute fracture management at injury site
- Continuous monitoring of patient's vitals and re-evaluation during transport to hospital are necessary
- Patient's general condition should again be screened on reaching ED. Even in ED, BLS and resuscitation take priority over extremity problems

- The fracture classification systems, Müller AO classification of long bone fractures is a detail oriented alpha numeric system which aids in diagnosis and management
- In the ER, patients with uncontrollable hemorrhage, severely contaminated wound and patients requiring limb salvage procedure should be transferred to operation theater immediately
- Patient with injured limb should be assessed for any associated neurovascular injuries and treated appropriately in consultation with neurosurgeon, vascular surgeon and orthopedic surgeon
- Closed reduction with reduction techniques and immobilization form the important mode of management in closed fractures
- Wound debridement, tetanus prophylaxis and antibiotic coverage constitute important aspects of open fracture management
- Rehabilitation should begin early in the fracture management
- Rehabilitation aids in preservation of function while the fracture is uniting and restore function to normal when the fracture is united; is achieved through active use and active exercises involving the affected limb

The session was summarised and closed with Clinical Findings of Some of the Common Fractures and Dislocations

2. Acute Assessment and Management of Head Injury - the scientific discussion was based upon: -

- Establishing and securing airway, ventilation and fluid resuscitation forms the primary goal of prehospital trauma care
- Maintenance of airway and breathing play an important role in determining the outcome in head injury patients, as hypoxia is associated with increased mortality and morbidity rates
- Maintenance of circulation is very important in head injury patients as hypovolemia and hypotension are associated with increased mortality and morbidity in head injury patients
- GCS <13 on initial assessment and GCS < 15 at 2 hours after assessment, suspected open or depressed skull fracture, any signs of basal skull fracture, post-traumatic seizure, focal neurological deficit and more than one episode of vomiting form the criteria for immediate CT in head injury patients in ER
- Head injury patients in whom CT scan is suggestive of recent intracranial lesion should be referred to neurotrauma centre for further management
- Head injury patients with features suggestive of role of neurosurgical assessment and management, irrespective of CT scan results, require further management in the neurotrauma unit
- All salvageable patients with severe head injury of GCS score less than 8 should be treated in neurotrauma unit

- Children with head injury are categorized into high-risk, medium-risk and low-risk groups based on history, mechanism of injury and clinical examination and accordingly managed in ER
- Thorough resuscitation and stabilization of the patient is essential prior to transfer to neurotrauma unit, in order to avoid complications during the journey
- All patients who have GCS <8 should be intubated and ventilated prior to transfer from ER
- Monitoring during transfer to neuro critical care unit from trauma centre should be in adherence with the published standards
- Intracranial pressure monitoring should be performed in head injury patients with a normal CT scan and two or more of the following features noted at the time of admission; patients older than 40 years, unilateral or bilateral motor posturing, systolic blood pressure <90 mm Hg
- Monitoring of GCS, intubation and ventilation, hyperventilation to a PaCO2 of 35 mm Hg, maintenance of blood pressure with crystalloid infusion or inotropes, mannitol, loading phenytoin dose constitute different measures for treating ICP in children in neuro critical care unit

3. **Acute Assessment and Management of Spinal Cord Injuries – Following points were discussed during the scientific session:-**

- In prehospital settings, in patients with suspected spinal cord injury, maintenance of spinal immobilization should be prioritized along with maintenance of ABC
- Patients with suspected SCI should be transferred to a major trauma center as early as possible, ensuring maintenance of complete spinal immobilization
- Complete spine immobilization should be maintained using rigid cervical collar and supportive blocks on backboard with straps to secure the entire spine in patients with potential spinal injury
- Patients with suspected SCI should be diverted to the nearest trauma unit if immediate life-saving interventions are required
- Patients with suspected SCI should not be directly transferred to a spinal injury center from the scene of the incident
- In the emergency room, a patient with suspected SCI should be transferred from the backboard onto a firm padded surface, as early as possible, while maintaining spinal alignment
- Neurological assessment should be performed to determine the level of injury and completeness of injury in patients with potential spinal injury, who are alert and conscious
- In an unconscious victim, spinal cord injury must always be suspected and appropriate immobilization of spine maintained till it is ruled out by a specialist
- Imaging studies including plain x-ray films, CT scan and MRI could be performed to determine the location of injury
- Canadian C-spine rule aids in evaluation of cervical spine injury in patients suspected with SCI

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- Consultation with neurosurgeon or spinal surgeon should be obtained in patients with imaging studies suggestive of spinal fracture
- At the spinal center, following appropriate treatment, rehabilitation should be initiated to prevent secondary complications

Summary of Meeting:

- Pre-hospital trauma care is a cardinal component of all trauma care systems.
- The acute assessment of a patient at the injury site includes measurement of vital signs, level of consciousness, assessment of airway, breathing, circulation, disability, and exposure to the environment.
- The CDC guidelines recommend four steps for screening injured patients (during field triage) who need to be transferred immediately to the nearest/appropriate trauma center.
- The main objectives of prehospital management include stabilization of the patient, prevention of further loss of neurological function or bleeding, and transfer to a trauma center at the earliest.
- In the emergency department, advanced trauma life support consisting of ABCDE steps and a head-to-toe survey is used in the management of acutely injured patients.
- After initial evaluation and stabilization, the patient should be referred to a neurotrauma center or an orthopaedic center, as applicable.
- Tranexamic acid, a synthetic derivative of amino acid lysine, acts as an antifibrinolytic agent and effectively reduces mortality rates in hospitalized trauma patients with or at risk of significant bleeding.

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