

Trauma care system in India: Where are we?

Dr.Samir Misra* & Dr.Sandeep Tiwari**

*Associate Professor Department of Trauma Surgery King George's Medical University,
U.P, Lucknow.

**Professor & Head, Department of Trauma Surgery King George's Medical University,
U.P, Lucknow.

***Corresponding Author**

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ABSTRACT

Trauma-care systems in India are at a nascent stage of development. Metropolitan cities, industrialized cities, rural towns and villages coexist, with variety of health care facilities and almost complete lack of organized trauma care. There is gross disparity between trauma services available in various parts of the country. While rural areas are deficient because of varied reasons. Metropolitan cities, have very good infrastructure of health care. There is no co-ordination of various a government agencies in regard to trauma prevention, management & rehabilitation. A nationwide survey encompassing various facilities has demonstrated significant deficiencies in current trauma systems. Although injury is a major public health problem, the government, medical fraternity and the society are yet to recognize it as a growing challenge.

Keywords: Trauma System, Developing Country, Health System, Trauma Care.

Introduction

Every year 5 million people die from injuries all over the world. In India, it is estimated that a million deaths occur and 20 million are hospitalized due to serious injuries. Various types of injuries like road traffic injuries, fall, burns, Poisoning, disaster related, injuries, suicides, violence, workplace/occupational injuries and several others result in damage to body organs. The nature, extent and severity of injuries depend on the amount of energy transferred, the physiological tolerance of the individual and use of protective devices. All individuals surviving an injury require trauma care services, ranging from measures to be done at site, on the way to hospital, in the hospital and discharge. Trauma care ranging from pre-hospital and emergency care, acute hospital care and post hospital care is a continuous and systematic activity with each of the phases linked to one another.

Industrialization & Modernization increased the rate of accidental injuries, crime and violence in India. An unprecedented increase in the number of vehicles has outpaced the development of adequate roads and highways. India has 2% of the motor vehicles in the world, but bears the burden of 8% of the global vehicular accidents. It is well recognized that our health care system is not fully equipped to meet the challenge. In 2002, Academy of Traumatology (India) undertook a maiden study of trauma systems, regardless of their stage of development or geographical region. One hundred and forty-five institutions across the country, including university hospitals, other government, nongovernment and private hospitals in urban and rural areas of all states in India were invited to participate in the survey. The survey consisted of a comprehensive questionnaire concerning all major components of a trauma system. Fifty institutions participated in the survey. The overall data was fairly representative of urban and rural settings, private and public hospitals and facilities across all geographical regions of the country. The problem of trauma care in India was also discussed at length in World Trauma Congress in 2016 in New Delhi and was of the opinion that the problem of trauma care system has far lagged behind in the development of health care system in India.

The Problems identified were:-

Problem in Trauma Care

Injury as a problem

Road-traffic accidents are increasing at an alarming annual rate of 3%. In 1997, 10.1% of all deaths in India were due to accidents and injuries. [5] A vehicular accident is reported every 3 minutes and a death every 10 minutes on Indian roads. [3] During 1998, nearly 80,000 lives were lost and 330,000 people were injured. Of these, 78% were men in age group of 20-44 years, causing significant impact on productivity's. [8] The majority of fatal road-traffic accident victims are pedestrians, two wheel riders and bicyclists.

Problems of Administrative components

Despite trauma being a major public-health problem with high morbidity and mortality, the Ministry of Health does not have a designated unit to deal with issues related to trauma. There is no central government agency to integrate policy-making, planning, financing, and drafting legislation or establishment of minimum standards for the performance of a trauma-care system. No reliable institutional arrangement exists to lead the development of such a system in any Indian state. In 26% of the systems surveyed, the overall responsibility for leading the system was undefined. The Centralized Ambulance Transport Service (CATS) of the Government of the State of New Delhi is the only noteworthy state initiative in this direction. With 108 ambulance services integration, the system has showed improvement. This is restricted mainly to pre-hospital rescue and transfer. Only 28% of respondents identified the presence of a unified leadership coordinating various components and agencies.

Problems of Education

The state medical and nursing councils control the educational and licensing requirements for physicians and nurses. However, formal education and specialty training (in emergency medicine, trauma surgery and critical care) are not mandatory for personnel involved in trauma care and available at select private institutions. ATLS (Advance Trauma and Life support), has standardized education in trauma life-support skills is made available through the efforts of Academy of Traumatology (India) under the 'National Trauma Management Course' (NTMC) with accreditation from the American college of surgeons. Currently this training is available mainly in larger centres and is intended for doctors. So far over 3000 doctors have received training through this programme.

Problems of prehospital care

Prehospital care is virtually non-existent in most rural and semi-urban areas in India, and implementation of the 'golden hour' concept is still an unachieved goal.[5] The concept of a coordinating agency and a designated authority is restricted mainly to cities where trauma systems are operational in some form. Quite often there is an overlapping of private and public facilities and ambulance services in an urban geographical area. Gross discrepancy is seen in prehospital services between urban and rural settings, as well as between paying and non-paying patients. In the absence of guidelines and trained paramedical staff, decisions about evacuation of the victim and the choice of the destination hospital are made on an individual-case basis. These choices are often made at the behest of patients or their kin. Formal licensing to run an ambulance service is not mandatory. Ambulance services are run by a multitude of organizations including government, police, fire brigades, hospitals and private agencies. Of the facilities surveyed, 12% reported a total absence of any ambulance service. Air ambulance services are not widely available and only 4% of the surveyed systems have even minimal access to air transportation, run by private agencies. Some facilities surveyed even had to rely, at times, on waterways to transport injured victims.

Problems of Communication & transfer protocols

Despite technological advances, communication in trauma systems in India remains rudimentary and inefficient. Only 14% of the systems have a dedicated central telephone number for incident reporting. There is no valid protocol for transfer of trauma victims to definitive care facilities.

Problems of Disaster Preparedness

India is a disaster-prone country with frequent floods, cyclones, landslides and earthquakes. Train accidents and industrial mishaps are not uncommon. Government plans are in place, in general, to deal with disasters. Only 26% of the systems in the survey reported a well-documented disaster management plan. The rest of the systems have plans under development, or no plans. But with the formation NDRF (National Disaster Relief Force) & SDRF (State Disaster Relief Force) the future looks promising

Problem of Definitive Trauma-Care facilities

Definitive care for trauma victims is offered by government hospitals, corporate hospitals and a large number of small clinics across the country. Facilities that offer treatment for trauma victims, at different levels, report 10% to 30% of their beds occupied by people injured in road accidents.

Who is going to pay?

The trauma victim's care takes a heavy toll on the health care budget. The government (State & Central) have to allocate a definitive budget for the care of these patients. At the end of it all, the health care facilities of trauma victims has to be paid by somebody. It is not clear that who is paying for the needs of trauma victims.

A definitive policy in this regard is needed, which will encourage, private and government sector health care facilities to provide care for trauma victims.

Most government hospitals offer free care, but the quality of that care differs from one centre to another.[5] Most university hospitals provide a reasonable level of care; these hospitals are able to fulfil the role of tertiary trauma centres but critical care continues to remain the weak link in such settings for a variety of reasons. Private and corporate hospitals, located mostly in large cities, are equipped with modern diagnostic and imaging facilities, good operating environments and intensive-care units. Some of them also run dedicated trauma services. However, there are no norms to govern their standards and their relations with the public trauma system. On the other hand, the district hospitals often lack trained staff and adequate infrastructure for management of polytrauma and supply of consumables. Small hospitals and clinics mushrooming across India are simply unable to cope with polytrauma, due to lack of multidisciplinary support, particularly the critical care units.[3] Such small establishments struggle to manage severely injured patients, resulting in substandard care and high mortality.

Problems of Rehabilitation

Rehabilitation, though an integral element of any trauma-care system, is a neglected area in India. It is restricted to physiotherapy in most centres. Although 76% of the facilities offer physiotherapy services, only a third offers occupational rehabilitation and psychological counselling. The surveyed hospitals failed to demonstrate strong links and transfer agreements between acute facilities and rehabilitation units. Social security, retraining, as well as employment and other support schemes from the government for the rehabilitation of the injured, are limited; only a few voluntary organizations offer such assistance.

Challenges in organizing trauma care systems in India.

Improving trauma care services in India requires an organized and a programmatic approach. As it is an interlinked and inter-sectorial activity requiring close coordination between different partners, it requires a systematic approach.

- Integrated emergency care programmes covering all types of emergencies need to be developed, as basic principles of emergency and trauma care remains similar in many situations except the type a mode of emergency care.
- The concept of first aid responders should be improved with basic first aid training to all drivers, police, teachers and other interested people. These personnel should be able to get involved in assisting a victim at the sight of injury, call for help, assess safety, help the victim and provide immediate assistance.
- Basic first aid care providers should be developed in all institutions with training in trauma care capable of providing minimal interventions like removing the person, clearing airway, control bleeding and patient assessment.
- Advanced pre-hospital and trauma care facilities should be available in all hospitals with bed strength of more than 100.
- All public sector hospitals must be well equipped with basic facilities and skilled personnel to provide appropriate trauma care. Hospitals should be in a state of preparedness to receive trauma patients without time delays.

The organization of a trauma system has four impact pillars: organization of pre-hospital care facilities, hospital networking, communication system and organization of in-hospital care (acute care and definitive care). An integrated approach is required at all levels: human resources (staffing and training), physical resources (infrastructure, equipment and supplies) and the process (organization and administration). Compared to the western world, the trauma care services in India lack of each of the elements listed above. Most of the physical resources for in-hospital care in terms of infrastructure and equipment are already available at secondary and tertiary care hospitals and need moderate upgrades.

Therefore, the thrust areas in the field of trauma services are as follow:

1. Provide physical resources for pre-hospital care and communication systems.
2. Provide well-trained staff at all levels of care from pre-hospital to definitive trauma care. Providers should be well trained and should understand the critical needs of a trauma victim. Skill-based training programs for doctors as well as paramedical staff in Acute Life Support (ALS) procedures are needed.
3. Organize and integrate pre-hospital services with definitive care facilities (hospital) so that a patient is shifted to an appropriate facility in the shortest possible time.

The future

The future appears both daunting and challenging. It is estimated that from its present position of the ninth leading cause of deaths in India, trauma will move up to third position by 2020. It is also estimated that in the developing countries over 6 million will die and 60 million will be injured, or disabled, in the next 10 years. India will have a large share in this, with an estimated economic loss of around 2% of GDP.[8] To meet this challenge several efforts are required. Resource creation, education, legislation, upgrading prehospital and hospital-based care, public awareness and a change in the attitude of the policy-makers, is need of hour. The public health institutions will also benefit from adopting WHO Essential Trauma Care guidelines for trauma care, which is aimed at low cost improvements to the trauma care.[10] There are already some ongoing efforts in that direction.

Although the overall picture in trauma care is not as dismal as it used to be three decades ago, *'trauma care for all'* continues to remain a distant dream in India. Despite significant overall progress in many other fields, trauma systems in India continue to remain at a formative stage for various reasons. A concerted effort from all the parties involved, as well as the society, is the need of the hour.

Conclusion-

The high rate of injury-related deaths and disabilities in India could be in part due to the absence of integrated and organized systems of trauma care. In the prehospital setting, a multisectorial approach must be implemented to address the training of emergency medical service providers and community members. Prehospital transport time can be decreased through improved communication and transport modalities. The Indian trauma care system could also be strengthened through hospital-based training programs and trauma response teams.

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