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RURAL POLYTRAUMA: SURVEY

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ABSTRACT

Background : Poly trauma is a major killer. Team work is essential for better management.
Method : Survey was undertaken to collect baseline data in polytrauma patients from rural part in Maharashtra.
Result : Two thousand patients were studied. Cause was fall in 904, vehicular accident in 776 and assault in 320 patients.
Conclusion : There should be good pre hospital emergency service and quick transport to well equipped hospital.

KEYWORDS : Poly Trauma, Rural India, Road Safety, increase,Young Population, Equipments in Civil Hospital, Changing Trends, drills.

Introduction

Polytrauma constitute as one of the most serious health problem to the extent. Polytrauma is the major killer of the present day not only in a specific area or state or country but all over the world. Most people think that injuries are mainly a problem of rich countries, this is not so. That data available from developing countries suggest that in every sphere of activity the proportion of persons, who are injured or killed, is similar or higher than that of industrialized or urbanized countries.

With increase in urbanization and industrialization more and injuries of varied type are increasing day by day. Industrialization and increase vehicles giving rise to more trauma rather poly-trauma patients, who require not only urgent treatment, but also different types of attitude, approach, dedication, planning, preparedness and the well coordinated as well as timely team - work to have an effective outcome of a "Golden hour"[1]

Material and Methods

The present study was conducted in the form of survey in rural area of our state with following aims and objectives.:

1. To collect baseline data of polytrauma patients in rural India.
2. To categorize type of the traumas sustained.
3. To evaluate in brief the existing health care system.
4. To formulate and suggest and ideal infrastructure for trauma patients that too, to suit the Indian conditions.

To collect baseline data of poly-trauma patients in rural India all daily admissions, injuries sustained, cause of the injury, site of the accident, nearest medical care center, type of treatment given on the spot, mode of transportation from the spot of accident to the nearest medical center were categorized.

At the time of collecting the date all the possible details were collected from the patients' medical records, which helped to categorize various types of the traumas and injuries sustained by the patient and also helped to know various modes of treatment received by the patient.

We found:

1. Environment as stimulus influences our behavior and determines our needs. In developing countries like India, Nepal, Bhutan and Pakistan communicable diseases and malnutrition have largely come under control to a significant level. Where as the problems of polytrauma, accidents and mass - casualties is becoming one of the leading causes of morbidity and mortality. So each event makes us to realize as to what extent we're unprepared in handling such situations not only at periphery, even including so many teaching institutes except few. Every such encounter forces us to think of growing needs to strengthen our whole Indian Health Care Delivery System particularly our trauma Care System.
2. Trauma is also a disease like any other disease but it requires urgent and different type of approach to have very effective outcome based on the principle of a “GOLDEN HOUR", because polytrauma has emerged as a major killer of present day. This involves, nearly all the age - groups, but more particularly younger age - groups.
3. Management of any trauma victim starts from the time patient is injured, evacuated, resuscitated, operated in hospital, discharged and rehabilitated.
4. There is still a lacuna in the maintenance of roads & lack of driver friendly road signs. There is direct need of education to implement strict traffic regulations. Central and state Government should realize that, it is not money, which brings the roads, but it has been proved in several parts of the world that roads bring the money.
5. Although it has been proved that, polytrauma is a disease like any other disease and it is one of the major killers. The existing literature review shows that in the present scenario everybody is neglecting polytrauma and hardly any steps are being taken to treat it effectively. Thus making polytrauma the most neglected disease of Modern Society, to the fact that Trauma has become the third highest cause of death in humans after heart diseases and malignancies.

Road safety is no accident means no polytrauma and no question of trauma, but it is next to impossible.

It results from deliberate efforts on the part of many sectors of society - Government and non- Government alike - once these sectors have acknowledged it to be an important and valuable public good, and have developed policies and programs to support and maintain it.

Our commitment is to bring an end to this deadly scour age, which takes the lives of 1.18 million people around the world each year, disables hundreds of thousands more, and affects millions of families and communities.

Observations

A through retrospective as well as prospective study was carried out over a period of 4 years in the rural areas of Maharashtra taking Jalna as one of the district as a representative data. Maximum possible details were recorded of all the patients of trauma admitted in Civil Hospitals well as private clinics of Jalna.

We also studied various limitations of the present situation (present scenario), which has helped us to project and to suggest future action plan to minimize the limitations existing in turn to improve a lot over a period, in phase wise manner.

Most patients were in productive age group [Table - 1]. Seven hundred and two patients were from urban population and 1298 from rural

areas. Cause of injury was fall in 904 patients, Vehicular accidents in 776 patients and assault in 320 patients. Most injuries were upper and lower limb injuries followed by head injuries [Table - 2].

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For the first time in the history of WHO, the Director - General has devoted a World Health Day specifically to Road Safety. Although road accidents nearly kill 1.2 billion people around the world every year, which is largely neglected as a health issue. This is perhaps because many believe as these are beyond our control. Yet the risks are known. They could be speeding, drinking and driving, non-use of helmets, seat belts and other restraints, poor road design, poor enforcement of road safety regulations, unsafe vehicle design, and poor emergency health services on road. While some interventions to address individual risks have proven to be effective, our mission on **World Health Day 2004** was to advocate a "Systems approach" to road safety, which takes into consideration the key aspects of the system, the road user, the vehicle and the infrastructure.

Road traffic injuries are a major Global public health and developmental concern, disproportionately affecting certain vulnerable groups of road users, their magnitude is expected to rise considerably in the years ahead. Road traffic injuries can be prevented, and their consequences can be alleviated. Strong political commitment is key to prevention efforts, and Governments have a particular role to play in creating enabling environments for road safety.

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Every day as many as 140,000 people is injured, more than 3,000 die and some 15,000 are disabled for life on World roads. Each of these people has a network of family, friends, neighbors, colleagues or classmates who are also intern affected, emotionally, mentally and otherwise. Families struggle with poverty when they lose a breadwinner or have the added expense for caring of disabled family members

Current figures are growing at an alarming rate. Even more alarming are the trends. Estimates show that by year2020, the number of people killed and disabled every day on the world's roads will grow by more than 60% thus, making road traffic injuries a leading contributor to the global burden of diseases and injuries. This burden falls most heavily on low-income and middle-income countries. Today, they account for 90% of the deaths and disabilities resulting from road traffic injuries. Soon, that will rise to 95%.

High-income countries were the first to motorize and the first to learn by experience that, while motorized travel can provide many benefits, it can also harm unless safety is made a primary consideration. These countries have achieved success in reducing harm because they have engaged many different groups from government, civil society and industry in coordinated programs for road safety, its research, development and implementation. Now, some of the most heavily motorized countries in the world have some of the lowest rates of road traffic death per 100,000 people, with annual rates below 6.0 and falling. By contrast, many other countries have rates in excess of 28.0 per 100,000 people.

Discussion

Road traffic accidents are ever on the increase and so polytrauma. Besides the routine road traffic and domestic accidents, natural calamities like earthquakes, cyclones, land slides communal riot, terrorism, rail and air accidents, all are contributing to the changing scenario of trauma and its management.

Not only Urbanization is compelling to increase in number of vehicles and so many types of accidents even in the rural part of the India, as industrialization is spreading not only in outskirts of major cities but also is penetrating in various rural areas. Also various villagers are moving not only towards the cities but also towards various spurting industries of varied scales.

A representative survey of data and its analysis of rural India have revealed that the number of deaths per year ranges from an absolute

minimum of 130000 to possibly of 650000 per year.

A rough estimate indicates that 15% of all hospitals and clinical beds are occupied by victims, thus making polytrauma as one of the single leading cause of hospital admission [3].

Males dominate in our study. During this study so many vital observations were noted like, age-majority patients were in younger age group (528 patients were in the group of 21¬40 years to the extent if you take up to the age of 40, 704 were the patients of polytrauma whereas relatively few patients were seen in middle age and more or less in old age group, nearly same was the picture even for the patients admitted in private clinics of Jalna). Younger people (i.e. dynamic and moving) were very much vulnerable for the accidents. Because younger are the major supporting pillars not only of the family but also of society and the future generation. Means these need more protection, more intensified and more specified treatment that too as early as possible, so that so many vital lives can be saved to make their family more stable as well as healthier society. Also if timely and correct treatment delivered to these victims with multi-specialty involvement as well as pre-hospital care, there are fair chances of survival Children and younger are most of the times disease free except that of trauma. So our aim should be to give best possible treatment and care at the earliest not only to these children and young age group but also to the middle aged as well as elderly victims, which in turn can make not only the family but also the society (as all the components are equally important being interdependent and preparative nature).

When we analyzed the number of the patients received by various hospitals of Jalna and reviewed their sources, majority were from remote rural areas once again confirming that they neither could reach in a required time nor received any pre-hospital care and in spite of reaching to their highest possible destination i.e. civil hospital at a district headquarter. Also could not deliver the best possible treatment to them ultimately creating a situation to have more mortality and even the morbidity making great loss of family as well as of society and the nation.

Study analysis of causes of injury of the patients admitted in Civil hospital shows major chunk constituted by the vehicular accidents i.e. 49% confirming that increase in number of vehicles, urbanization, industrialization, affected a lot to the routine life, giving rise to more trauma.

When analyzed has shown that extremity injuries are very common constituting nearly 74.6% in which there was a slight difference in the incidence of upper extremities and lower extremities trauma. What is more important that significant percentage of patients had associated head injuries (i.e. 13.4%) which were the main cause for increase in the mortality, morbidity as well as referral to the higher centers.

Patients of Polytrauma having a component of associated head injury (208 out of 268) were admitted to civil hospital, indicating private clinic didn't admit them for increase in risk involved and medico legal causes. So civil hospital were compelled to face, increase in the mortality, morbidity as well as referral to the higher centers. Next to that were the chest injuries i.e. nearly 8% even though % seems to be small but all the time it has added more and more to the mortality, morbidity as well as referral to the higher center.

Nearly 16.4% patients were discharged against medical advise, cause may be indirect reflection of services rendered by various specialists, more particularly in a non-coordinated manner; also it's an indirect reflection of that particular hospital.

3.05% patients absconded from the hospital; this may be due to illiteracy, ignorance, and poverty and less dedicated work by the hospital personnel.

Just over a period of 48 year in India number of the vehicles has increased from 306 thousand to 40939 thousand, which is nearly 134 times. In which two wheelers have increased so significantly i.e. from as low as 27 to as high 28342 (1049 times), depicting and confirming two-wheeler is a common vehicle as the mode of transport nearly for 69% of the total. Rest are some kind of four wheelers, which constitute 31%, four wheelers have some protection for driver as well as travelers in comparison with two-wheelers. That's why in general, less morbidity and mortality and on most of the occasion, but if major accidents occur, there is a swing of mortality and morbidity immediately to other extreme.

It is clear that the data available, collected, analyzed are so sketchy that polytrauma victim management, can't be chalked out very specifically. It appears that there is an urgent need for much more wide spread knowledge about easy and effective methods of handling emergency cases particularly polytrauma patients. This is especially true for rural areas. As per our analysis population and vehicular number has increased very fast over last four decades. But infrastructure like roads, vehicular conditions, transportation at times of casualty, skilled personals for managing a polytrauma victims, necessary equipments for the same, physical, mental and social rehabilitation of the victim.

If people or at least paramedics available in rural and remote places can give the correct first aid, the job of physicians, surgeons would become much easier and golden hour principle can be honored very well[4]. In turn it will give maximum possible survival because mortality is directly proportional to the time taken and types of first - aid given to the patient till he or she reaches to definite surgical treatment place or center. Also it is very important to know and keep in mind the basic aim of total trauma care concept is to "to get the patient to the right hospital in right time".

To give best possible outcome for critically ill patient, particularly for any polytrauma patient, there should be a good pre-hospital emergency service including pre-hospital transportation by well equipped ambulance also there should be smooth and safe intra-hospital transportation as well as inter- hospital transportation.

'Injury, Trauma and Polytrauma are the disease like any other'. Polytrauma is a major killer of the present day for modern society. For a trauma victim it is not the life but the quality of life it is not the function, but the quality of function that matters[5].

CONCLUSIONS:

1. Males dominated the study significantly nearly 80%.
2. Adults dominated the study significantly (52%).
3. Even extremes of age had Polytrauma (28%).
4. Majority patients were from rural area (28%).
5. Vehicular accidents were the major chunk of study (49.6%).
6. Extremities injuries were more common (68%).
7. Significant number of patients had associated head injury (20%).
8. Nearly 45% could be treated at first medical centre (PHC).
9. Nearly 32% were compelled to get referred to higher centers.
10. Pre - hospital emergency medical service was non - existent.
11. No means of transportation or poor or delayed transportation means were available compelling to lose the importance of the golden hour.
12. Reasonable communication system was available.
13. Wherever the ambulance was present, was nothing but white taxies.
14. Even though each and every medical care centre had casualty, and/or emergency service, but hardly could it cater a vital service to the Polytrauma patients.
15. Few only had all the specialists required to treat the Polytrauma patients.
16. Even not a single medical centre had specifically designated trauma care centre.
17. Inadequate emergency beds.
18. No preparedness for Disasters and Mass Casualties.
19. Inadequate man power, quantity as well as quality wise.
20. Pattern of road use has a significant influence on the type of road traffic crash experienced in India.
21. It indicates that road safety policies in India would have to focus on the VRUS (Virulent Road Users) like pedestrians, bicyclist, motorized two-wheeler, three-wheelers and designs of vehicle exteriors.
22. Roads are not designed properly.
23. In the cases of morbidity and / or mortality following Polytrauma there's an unlimited scope for service out a survey of JALNA District approached considerable sections of Marathwada rural population, problems were identified and strategy could be suggested.
25. Such a study with their various aspects) would stimulate others.
26. The proper use and design of safety helmets are hardly there.
27. Change is always met with resistance.
28. There was no Polytrauma review available in India.

29. Configuration of Polytrauma in younger age-group dominance.
30. At the periphery communication, accessibility, rescue team present is almost none.
31. At the casually level no specific trainee in handling of trauma patients.
32. Road traffic accidents were the major cause of morbidity and /or mortality following Polytrauma.
33. Most of the time was wasted in approaching to a proper medical d centre.

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