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Original Research Article

Trends in trauma care before and after the introduction of 'Mukhyamantri Santwana Harish Scheme' in a tertiary care hospital at Kolar

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ABSTRACT

Background: Road traffic injuries (RTI) are responsible for 1.2 million global deaths and rank 9th as cause of death in both the high and low income countries. Polytrauma cases make the bulk of emergencies in our centre and the victims were previously given only first aid and critical care before being referred to a government aided institute for further management due to monetary issues. After the introduction of Mukhyamantri Santwana - 'Harish' Scheme (MSHS), all the patients are entitled for cashless treatment for the first 48 hours and this improved the quality of care they received.
Methods: All the polytrauma cases brought to the emergency and critical care department for a period of 7months before the introduction of MSHS (October 2015- April 2016) and for a period of 7 months from the introduction of MSHS (May 2016- November 2016) were studied retrospectively. Data on the number of patients referred, admitted and underwent intervention during the time periods were collected and compared.
Results: The number of cases that were admitted and given intervention in our centre increased considerably and number of cases referred to other centres decreased after the introduction of MSHS.
Conclusions: Introduction of MSHS lead to patients receiving more advanced life support and interventions as necessary. However this cannot be generalised to all the centres as data is still lacking. Multicentric studies need to be done in this aspect.

Keywords: Mukhyamantri Santwana Harish Scheme, MSHS, Trauma care, Road traffic injuries, Polytrauma

INTRODUCTION

Road traffic injuries (RTI) are responsible for 1.2 million global deaths and ranks 9th among the cause of death in both the high and low income countries.[1] The impact of road traffic injuries is greater in the 5–29 years age group. In this age group, these injuries are the leading cause of mortality in high-income countries and second leading cause in low-income countries.[1] Road traffic accidents are ever on the increase and so is polytrauma. A rough estimate indicates that 15% of all hospitals and clinical beds are occupied by such victims, thus making polytrauma as one of the single leading cause of hospital admissions.[2]

Poly trauma patients represent the ultimate challenge to trauma care. The heaviest toll of traumatic deaths occurs within the first hour following trauma, thus management during the first hour of injury is crucial.[3] All the polytrauma patients may not be able to receive optimum

care due to various reasons. In Maharashtra, India, it was noted that 77.6% of patients of polytrauma having a component of associated head injury were admitted to civil hospitals, indicating private clinics did not admit them for the increased risk involved and medico legal causes.[4]

The Government of Karnataka with support of the World Bank, started the Mukhyamantri Santwana - 'Harish' (MSH) Scheme on 8th March 2016. Under the scheme Immediate medical relief is provided to the victim during the Golden Hour with financial aid up to Rs. 25,000 during the first 48 hours of treatment. Financial assistance to victims of road accidents is provided across the state irrespective of their financial status or nationality.[5] The state is spending approximately Rs. 10 crore for this scheme annually.[6]

R.L. Jalappa hospital is situated at Tamaka, Kolar in close vicinity to national highway and is the only major tertiary care hospital in the region which provides super speciality services and caters to medical, surgical and traumatic emergencies round the clock. Following introduction of this scheme at R.L. Jalappa hospital, the care received by polytrauma cases seem to have improved, especially in cases of unidentified/ unknown patients. Thus this study aims to study the trends in trauma care before and after introduction of Mukhyamantri Santwana - 'Harish' Scheme at a tertiary care hospital at Kolar.

Objective

To study the trends in trauma care before and after the introduction of Mukhyamantri Santwana - 'Harish' Scheme at a tertiary care hospital at Kolar.

METHODS

This is a hospital based cross sectional survey done for a period of 14 months in a tertiary care hospital in southern India. All the polytrauma cases brought to the emergency and critical care department of R.L. Jalappa Hospital & Research Center, Kolar irrespective of the type and severity of trauma for a period of 7 months before the introduction of MSH scheme (October 2015 – April 2016) and for a period of 7 months after the introduction of MSH scheme (May 2016 – November 2016) were studied retrospectively. Basic demographic details of patients treated, data on the number of patients referred, admitted and those who underwent intervention during these time periods were collected by surveying the hospital records. Data was coded and entered into excel datasheets and comparisons was made using proportions, graphs and tables. Chi square test was used as test of significance to compare the difference in trauma care observed before and after the introduction of the scheme. Statistical analysis was done using SPSS version 21 and p value of less than 0.05 was considered as statistically significant.

RESULTS

Figure 1 shows comparison of total number patients receiving care before and after MSH scheme. The total number of polytrauma patients who received care for 6 months subsequent to the introduction of MSH scheme was more compared to the ones who received care in the preceding 6 months before MSH scheme. There were a total of 1479 and 1706 cases of polytrauma who received care before and after the implementation of MSH scheme respectively for a 7 month period.

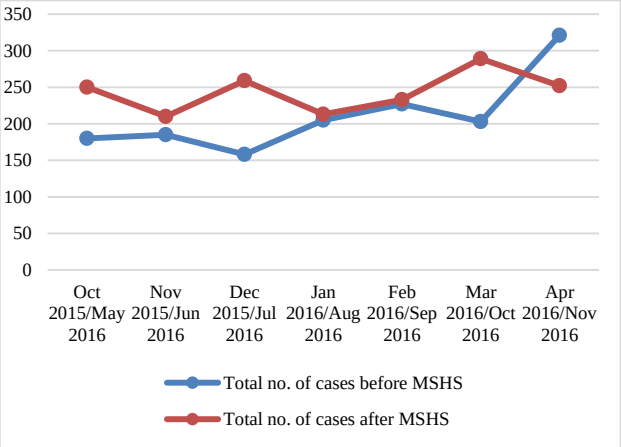

Figure 1: Total number of patients who received care before and after MSHS.

Table 1: Month wise distribution of polytrauma cases before introduction of MSH scheme.

Month and year	Total number of RTA cases seen in emergency department	Admissions and interventions (%)	Number of cases referred to other centres (%)
October 2015	180	103 (57.2)	60 (33.3)
November 2015	185	83 (44.9)	75 (40.5)
December 2015	158	68 (43.0)	49 (31.0)
January 2016	205	112 (54.6)	63 (30.7)
February 2016	227	95 (41.9)	71 (31.3)
March 2016	203	86 (42.4)	69 (33.9)
April 2016	321	159 (49.5)	95 (29.6)
Total	1479	706 (47.7)	482 (32.5)

Table 2: Month wise distribution of polytrauma cases after introduction of MSH scheme.

Month and year	Total number of RTA cases seen in emergency department	Admissions and interventions (%)	Number of cases referred to other centres (%)
May 2016	250	129 (51.6)	52 (20.8)
June 2016	210	143 (68.1)	44 (20.9)
July 2016	259	201 (77.6)	31 (11.9)
August 2016	213	176 (82.6)	29 (13.6)
September 2016	233	127 (54.5)	46 (19.7)
October 2016	289	273 (94.5)	10 (3.5)
November 2016	252	137 (54.3)	38 (15.1)
Total	1706	1186 (69.5)	260 (15.2)

Table 3: Comparison of number of polytrauma cases admitted or referred before and after the implementation of MSH scheme.

	No. of cases admitted and received necessary interventions (%)	No. of cases referred or discharged (%)	Total (%)	P value
Before MSH scheme	706 (59.4)	773 (40.6)	1479 (100)	<0.001
After MSH scheme	1186 (82.0)	520 (18)	1706 (100)	
Total	1892 (59.4)	1293 (40.5)	3185 (100)	

The overall number cases of polytrauma who were admitted and received necessary interventions was higher following implementation of MSH scheme (69.5%) as compared to those before MSH scheme (47.7%). While the overall number of cases referred to other centers showed a decline following the implementation of the scheme (32.5% and 15.2% before and after MSH scheme respectively). Table 1 and 2 shows the month wise distribution of polytrauma cases and their characteristics.

Table 3 shows the comparison of number of polytrauma cases admitted or referred before and after the implementation of MSH scheme. 82% of those who received care following the introduction of MSH scheme chose to get admitted and undergo interventions at R.L.J hospital as compared to 59.4% before the introduction of MSH scheme. The difference observed in proportions was highly significant statistically with a Chi-square p value of <0.001.

DISCUSSION

Polytrauma cases constitute the bulk of cases that present to the emergency department but monetary issues in a non-aided centre such as ours have led to the referral of many such cases to aided centres after first aid in the past. Transportation would take up most of the golden hour i.e. 6-8hrs after trauma and some of these patients succumb to the injuries. One systematic review observed that road traffic trauma accounts for a large majority of emergency room visits (15–20% of total Emergency Room visits and about 35% of trauma- related visits) and autopsies conducted (10–45% of the total post mortems). 3–10% of victims do not survive their injuries (case-fatality ratio), with the proportion of deaths being as high as 17% in one study.

The period of survival for fatalities from injuries was also explored. It was evident that the majority (43.6%) of the deaths either occurred on the spot or within the first 6 hours, with almost 80% of those dying in the first 3 hours from injury. Head injury victims have a higher early mortality, with 55% dying immediately and another 25% within 6 hours.[5] This scenario has changed since the introduction of MSHS by the Karnataka Govt. on March 8th 2016. First 48 hrs were considered golden hour in the scheme and cashless treatment is provided to all accident victims.[6] Our centre got registered and started this scheme from April 21st 2016. This lead to patients receiving advanced life care and interventions if necessary and thus morbidity and mortality was avoided wherever possible. This indirectly led to a decrease in the medicolegal issues.

The out of pocket expenditure for healthcare in a country like ours continues to be high and the immediate financial burden following polytrauma could have resulted in loss of golden hours of trauma care and subsequent increase in mortality.[7,8] The present study aimed mainly to assess the utilization of health services provided by a tertiary care center like ours by polytrauma patients so that it would provide an insight and warrant further studies to assess the factors associated with the utilization of services and also the outcome of patients with polytrauma by severity of injury. Being a hospital based study, this study could be biased for only those patients who were able access the services offered by our center and other factors which play a role in the utilization of trauma care by the patients could have been missed.

CONCLUSION

Introduction of MSH scheme and provision of monitory support within the first 48 hours of a road traffic accident

has led to better utilization of health services by polytrauma patients. The polytrauma patients received more advanced life support and interventions as necessary and thus saving the golden hours following trauma which was otherwise lost probably because of unaffordability. However other factors which play a role in the trauma care could not be assessed by this study and further multicentric studies can be undertaken in this regard.

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Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Peden M, McGee K, Krug E. Injury: A leading cause of global burden of disease, 2000. Geneva: WHO; 2002.
2. Verghes M. Pre hospital care- introduction to injury control and safety promotion. Paper presented at Delhi, Activity Week of BJD-India, 2000.
3. Kunreuther H. Risk analysis and risk management in an uncertain world. Risk Anal. 2002;22:655–64.
4. Goyal S, Sancheti KH, Shete KM. Poly Trauma in Rural India-Changing Trends. Indian J Orthop. 2006;40:259-61.
5. Mukhyamantri Santwana Harish Scheme. Available at: http://www.mss.kar.nic.in. Accessed on 30th July 2017.
6. Many still unaware of Karnataka state scheme for accident victims. The New Indian Express. Published on 12th September 2016. Available at: http://www.newindianexpress.com/cities/bengaluru/2016/sep/12/Many-still-unaware-of-Karnataka-state-scheme-for-accident-victims-1518333.html. Accessed on 30th July 2017.
7. Garg N, Hyder AA. Road traffic injuries in India: a review of the literature. Scand J Public Health. 2006;34:100-9.
8. Payal P, Sonu G, Prachi V. Management of polytrauma patients in emergency department: An experience of a tertiary care health institution of northern India. World J Emerg Med. 2013;4(1):15–9.

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