

**Original article****CLINICAL PROFILE OF INTER-HOSPITAL REFERRALS TO A TERTIARY CARE ICU**

Suhail Sidiq, Mohammad Akbar Shah, Abdul Waheed Mir

**Abstract****Background:**

Inter-hospital referral of critically ill patients is quite common in developing countries. Very little data is available about these referrals. This study was conducted to assess patient profile of inter-hospital referrals to a tertiary care center ICU.

**Methods:**

This study was conducted over a period of two years. Data of patients referred to a tertiary ICU was collected. Data regarding pre-transfer communication, referring physician, referral summary, pre-transfer stabilization and resuscitation was also noted.

**Results:**

Total of 87 patients were referred for ICU care, with majority (86.20%) from a single center. In most (82.75%) of the cases no information was available about the referring physician. Pre-transfer communication was done only in 3 cases and referral documents were present in only 7 cases. Majority of referrals were to neurosurgery (72.41%). 48 patients had traumatic brain injury (TBI). Only two patients of TBI had cervical collar in place. Airway was secured in only 50% of patients who needed airway control. Although 23 patients got immediate bed in ICU, there was a mean delay of 11.45 hours in rest (64) of the cases. One month mortality of 64.36% was observed in these referred patients.

**Conclusion:**

We observed poorly organized referrals of critically ill patients. There was lack of pre-transfer communication, inadequate resuscitation, lack of referral summaries. There was delay in timely ICU admissions of these patients.

**JK-Practitioner2021;26(1): 51-54****Introduction**

Inter-hospital referrals account for a significant number of admissions to intensive care unit (ICU). Transferring a critically ill patient from one hospital to another is based on non availability of speciality beds at the referring center or benefits of care available at another facility<sup>1</sup>. Shortage of ICU beds and increasing demand for intensive care is a global health care challenge, especially in developing countries<sup>2</sup>. Any inter-hospital transfer of patient should aim at maintaining optimal health and continuity of medical care during transport<sup>3</sup>. The need of inter-hospital transfer should weigh the benefits of providing extra care on management or outcome verses risks associated with transport of critically ill patient<sup>4</sup>. Proper and timely referrals to higher centers along with appropriate stabilization before shifting can improve outcome in critically ill patients, however poorly organized and hasty transfer can lead to increased morbidity and mortality<sup>5</sup>. We studied profile of the patients referred to a tertiary care ICU from different hospitals of the valley.

**Material and Methods**

This study was a hospital based prospective observational study conducted from January 2018 to January 2020. Patients who were referred to a tertiary care ICU from different hospitals of the valley were included in the study. After admission and primary resuscitation in the hospital, patient data regarding age, gender, primary diagnosis, referring physician,

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**Key Words:**

Critical, inter-hospital transfer, referral

referring hospital, type of speciality referral was collected. Communication before referral, presence of proper referral summary, relevant basic resuscitation before transporting were also noted. Patient data was also collected regarding time interval between admission to A/E and availability of bed in ICU. Thirty day mortality of these referral patients was recorded. Patient data was statistically analysed.

### Results

During the study period from January 2018 to January 2020, total 87 patients were referred from different hospitals of valley and got admitted to the tertiary care ICU. Out of 87 patients 62 were males and 25 females. Mean age of the patients admitted was 44.66 years. Patients were referred from different hospitals of valley, with largest number from GMC Srinagar (86.2%) [Table-1].

#### Referring Centers

GMC Srinagar	75
Directorate of Health Services	5
SKIMS MCH	3
Bone and Joint Hospital	2
JLNM Rainawari	1
GMC Anantnag	1
<b>Total</b>	<b>87</b>

Majority of referrals (82.7%) were without any mention of referral doctors. [Table-2]

**Table-2.**

#### Referring Physician/Persons

Senior Resident	7
Postgraduate	2
Attendants	6
Not Known	72

Maximum patients were referred to neurosurgery department (72.41%) followed by neurology (10.34%) and cardiology (6.89%). [Table-3].

**Table-3.**  
**Referring Indications**

Surgical Referrals	Neurosurgery	63
	CVTS	1
	Plastic Surgery	1
Medical Referrals	General Medicine	3
	Neurology	9
	Cardiology	6
	Nephrology	1
	Gastroenterology	3
<b>Total</b>		<b>87</b>

Out of 87 patients communication to ICU was

provided in only 3 cases. Rest 84 patients were referred without any prior communication.

Referral summary was provided to only 7 patients, rest 80 patients had no or inadequate documents. 14 patients were transferred along with case files of referring hospitals.

All patients who were referred had intravenous access in place. Among surgical patients 38 patients needed intubation, but only 19 patients were intubated before shifting. Among medical patients, two were in need of intubation and only one was intubated. Out of 63 neurosurgery patients 48 patients had traumatic brain injury (TBI). Only 2 patients out of 48 with TBI had cervical collar in place.

Out of 87 patients only 23(26%) got bed in ICU immediately. 64(74%) patients did not get timely ICU admission, with minimum delay of 1 hour to a maximum of 72 hours. Average time to get ICU bed in these patients was 11.45 hours. Only 31 (35.63%) patients survived at the end of one month, leading to a thirty day mortality of 64.36% in these patients.

### Discussion

Transfer of patients from one hospital to another is to provide access to specialized care<sup>6</sup>. For inter-hospital transfer, clinicians at hospitals with limited facilities identify patients who need higher levels of care. Patients need to be stabilized and transported safely to the best hospital for them to get the care they need<sup>7</sup>. Key elements of safe transfer involves decision to transfer, proper communication to the facility where patient is to be transferred, pre-transfer stabilization and preparation, choosing appropriate transport mode, continuity of care during transport and finally documentation and handover at receiving facility<sup>8</sup>. Inter hospital transfer is an important and neglected part of continuity of care of a patient. Transfer should balance benefits and risks involved<sup>8</sup>. The risks of referral are manifold<sup>4</sup>.

A total of 87 patients who were shifted from different hospitals of valley got admitted in our ICU. The first key element of inter-hospital transfer is decision making and communication. The decision regarding transfer ideally has to be taken by a senior consultant level doctor after discussing with patients relatives about benefits and risks involved. A written informed consent along with reason to transfer is mandatory. In our study 72 patients were referred without knowing who was the referring physician. In 7 patients, senior resident had taken decision and in two cases postgraduate was the decision maker. Surprisingly attendants had taken the decision in 6 cases. No written informed consent was taken in any of the 87 cases.

Direct communication between transferring and receiving hospital is to be taken with sharing of patients condition, treatment given, reason of transfer, mode of transfer and timeline in a written referral document. In our study communication before referral was made only in three cases, while in 84 cases, patients were referred without any sort of communication. Referral summary is a legal document and is often not stressed upon during transfer. As per international guidelines, a standardized document should be used. Apart from details mentioned above, referral document must include name and designation of referring physician and any clinical event during transport. In our study<sup>7</sup> patients had proper referral summary, rest 80 patients had either no summary or inadequate documentation. In 14 cases, case files of parent hospitals were send along with the patients.

In developing countries poor documentation is a serious concern. In a study by Afzal Amin<sup>9</sup> et al, about deficiencies in referral notes, found majority of patient information was deficient. Because of inadequate information, treating team has to review entire history from attendants. Treating team most of the times have no idea about treatment received, thus wasting timely institution of holistic care.

Patient has to be adequately stabilized with care of airway, breathing, circulation and disability before transfer. Any associated life threatening preventable problem has to be corrected. Here use of pre transfer checklist is recommended.<sup>10</sup> Out of 48 patients of traumatic brain injury only 2 patients had cervical collar in place. Only 20 out of 40 patients who needed securing of airway before shifting, were intubated. In our study transferred patients had been poorly resuscitated. The outcome of inter hospital transfer depends on quality of care provided at referring centre, during transport as well as the receiving facility<sup>11</sup>.

Out of 87 patients only 23 patients got ICU bed immediately or after undergoing surgery on arrival. Rest 64 patients did not get timely ICU admission. This emphasizes need of proper communication before referral, so that the referred patients get proper and timely intervention otherwise underscoring the basic purpose for which these patients were transferred. This also emphasizes need of more speciality ICU beds in our center and as well as other tertiary centers of the valley.

Studies have shown that inter-hospital transfer of critically ill patients has been associated with improved outcome<sup>12</sup> or no difference in outcome<sup>13</sup>. Some studies have shown increased morbidity and mortality<sup>14</sup>. In our study one month mortality of referred patients was 64.36%, which was

significantly higher than mortality rate of ICU patients in India<sup>15</sup>. These referrals were associated with significant healthcare resource utilization and risks, although not with improved outcomes.

The aim of the study was to evaluate the profile of patients transferred, so we did not assess the reasons behind increased mortality in these patients. We did not evaluate whether referring hospital stay, peri-transfer variables during transfer impacted post transfer mortality. Although the primary aim of these transfers was to improve outcome but possibly because of ill planned transfers, poor communication, poor peri-transfer care and delayed availability of ICU bed may have led to increased mortality in these patients. The other limitation of our study was small number of patients studied. A larger retrospective study is needed in our center.

### Conclusion

Our study sheds light on potentially modifiable factors which need to be taken care of during inter-hospital transfer of critically ill patients and subsequent initiatives for quality healthcare improvement. We suggest proper decision making at referral center, communication before transfer, proper referral summary, continuity of care during transport and increase of speciality beds at tertiary care centers in our setting.

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