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**ORIGINAL ARTICLE**

# Factors Predicting Leaving Against Medical Advice in Neurosurgery: A Prospective Observational Study

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## ABSTRACT

**Introduction:** The decision of a patient for leaving the hospital against medical advice (AMA)affects the patient management adversely by increasing morbidity, mortality and escalates the cost of treatment.

**Objectives:** The main objective of the study is to find the factors predicting leaving against medical advice in neurosurgery.

**Material and methods:** This cross-sectional study was conducted in King Edward Medical University during February 2022 to July 2022. Data was collected with the permission of ethical committee of hospital. Data on gender, age, marital status, day and time of admission and discharge, duration of stay, primary specialty for care, reason for leaving against medical advice, prior history of hospitalizations, mode of payment, medication and follow-up advice at time of LAMA, revisit to the hospital and development of morbidity at follow-up was collected from patient charts and the LAMA form.

**Results:** Data was collected from 300 patients of both genders. There were 142 male and 158 female patients from age range 0 to 75 years. During the same period, 263 patients were discharged from the neurosurgical service and the rate of LAMA in the neurosurgery department was calculated to be 16.73%.

**Practical implication:** This study will be helpful in neurology department of the hospital and used for the betterment of results.

**Conclusion:** It is concluded that leaving AMA rates are high in neurological in-patients. Low income and level of health literacy were the most common causes of LAMA in this neurosurgical patient population.

**Keywords:** LAMA, Patients, Surgical. Population, AMA, Health

## INTRODUCTION

The decision of a patient for leaving the hospital against medical advice (AMA)affects the patient management adversely by increasing morbidity, mortality and escalates the cost of treatment. AMA is a global problem and has been reported from well developed countries as well as developing world[1]. The prevalence of AMA has been shown to vary as per the ethnicity, socioeconomic status medical condition and setting of the study. It also varies between teaching and nonteaching hospital. There is paucity of systematic studies looking into the reasons for AMA from India, a country unique in the sense of its deep routed beliefs in alternative medicine, poor penetration of medical insurance, well integrated family structure and high out of pocket health expenditure. Further there is a general belief that in India there exists a bias for the female gender such that they have poor access to health care[2].

Leave against medical advice (LAMA) refers to the behaviour of patients or their families to terminate their treatments and leave the hospital ignoring their physicians' permissions. It is common concerning problem in global health-care system. Evidence suggests that patients discharged against medical advice have increased risk of hospital readmission, potential morbidity, increased costs and even death. LAMA is associated with increased litigation risk and poses a dilemmatic ethical and legal problem for clinicians. It is a big challenge in developing countries like Pakistan where problems of staff shortage, lack of insurance and centralization of healthcare services predominate the clinical scenario[3].

Discharge or leave against medical advice (LAMA) of hospitalized patients is an adverse clinical event often resulting from a fundamental disagreement between the patient or an interested third party and the attending physician and/or the hospital environment. Approximately 1% to 2% of inpatient stays result in discharges against medical advice, but may reach up to 25.9% in some centers[4]. The rate of LAMA also vary with the department which admits the patient. Rates of 6% to 54% for psychiatric admissions and 0.9% for emergency admissions have been reported. LAMA is a matter of concern because results of many experimental studies have shown that patients discharged against medical advice have more readmission prevalence and also higher risk of complications than patients who receive care completely[5].

Moreover, lawsuits related to discharges seem more common among those discharged against medical advice. A study conducted by Quinlan and Majoros reported that 0.3% of LAMA cases led to litigation compared to 0.05% caused by regular discharges. Previous studies have reported numerous reasons for patients for requesting LAMA[6]. Critically ill conditions of the patient with almost no hopes for survival, dissatisfaction with the treatment provided by the hospital and competing family responsibilities are a few of them. Some other reasons identified are patients' expectation of a shorter stay, patient feeling better and preference for another hospital[7].

**Objectives:** The main objective of the study is to find the factors predicting leaving against medical advice in neurosurgery.

## MATERIAL AND METHODS

This cross-sectional study was conducted in King Edward Medical University during February 2022 to July 2022. Data was collected with the permission of ethical committee of hospital. Data on gender, age, marital status, day and time of admission and discharge, duration of stay, primary specialty for care, reason for leaving against medical advice, prior history of hospitalizations, mode of payment, medication and follow-up advice at time of LAMA, revisit to the hospital and development of morbidity at follow-up was collected from patient charts and the LAMA form. Medical records were utilized as well as the online health information management system to confirm the readmission and if any revisits to clinic which was not documented in medical record. We collected data regarding their demographic characteristics, clinical characteristics and LAMA-related characteristics using a structured questionnaire.

**Statistical analysis:** Data was collected and analyzed using SPSS version 20. All the values were expressed as mean and standard deviation.

## RESULTS

Data was collected from 300 patients of both genders. There were 142 male and 158 female patients from age range 0 to 75 years. During the same period, 263 patients were discharged from the neurosurgical service and the rate of LAMA in the neurosurgery department was calculated to be 16.73%.

Table 1: Baseline characteristics of selected participants

| Characteristics | Frequency | % |
|---|---|---|
| Male | 142 | 47.3 |
| Female | 158 | 52.7 |
| Educational qualification | | |
| Illiterate | 132 | 44.0 |
| Up to secondary school | 132 | 44.0 |
| High school and above | 36 | 12.0 |
| Marital status | | |
| Married | 143 | 47.66 |
| Unmarried | 157 | 53.44 |
| History of substance abuse including alcohol | | |
| No | 154 | 51.3 |
| Yes | 146 | 48.7 |
| Treatment Modality Recommended | | |
| Medical | 172 | 57.3 |
| Surgical | 128 | 42.7 |
| Mechanical ventilation | | |
| Not intubated | 266 | 88.7 |
| Intubated | 34 | 11.3 |

After bivariate analyses, statistically significant differences were observed in neurosurgical patients as compared to patients from other departments in terms of age, gender, educational status, history of substance abuse, place of in-patient admission, treatment modality recommended, status of mechanical ventilation and The significant variables were entered into multivariate logistic regression model and based on this analyses, significant predictors for discharge against medical advice among neurosurgical patients were found out to be in-patient admission to the ICU.

Table 2: Post LAMA Characteristics

| | | |
|---|---|---|
| Revisited hospital in 30 days, No. (%) | Yes | 147 (49.3) |
| | No | 153 (50.7) |
| Portal of revisit, No. (%) | Follow-up in clinic | 114 (77.6) |
| | Visited emergency room | 24 (16.3) |
| | Readmitted | 9 (6.1) |
| Developed morbidity, No. (%) | Yes | 89 (60.5) |
| | No | 58 (39.5) |
| Types of morbidity, No. (%) | Persistence of same complaint | 49 (55.1) |
| | Worsening of same complaint | 27 (30.3) |
| | New complaint | 13 (14.6) |

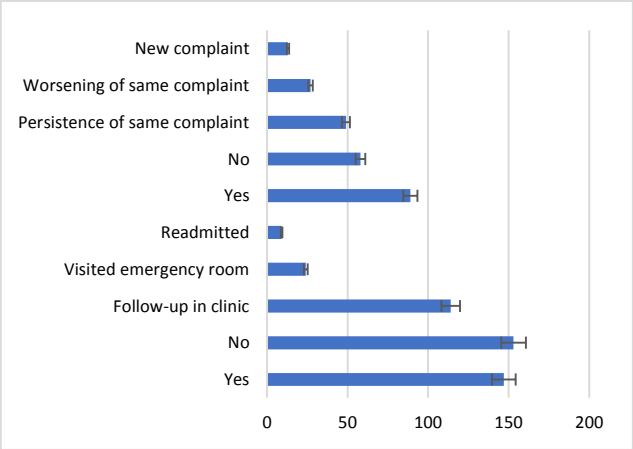


Figure 1:

## DISCUSSION

LAMA is a highly prevalent problem of healthcare quality with varying prevalence around the world. The reported prevalence of LAMA varies from as low as 0.34% to as high as 43.4%. In general, a global prevalence of about 2% has been reported in the literature[8]. The prevalence of LAMA is reportedly higher in developing countries than in developed ones. There is a global paucity of data exploring this aspect of neurosurgical practice globally.

To the best of our knowledge, no previous studies have so far tried to find out the differences among patient characteristics among those leaving against medical advice in neurosurgical service and other departments[9]. Further, no prospective studies have been carried out in Pakistan that have tried to explore this subject of interest. In this study, we have tried to establish the prevalence of LAMA related discharges in Pakistan and find out the factors that influence such discharges among a cohort of neurosurgical patients[10].

The department of medicine had the largest number of LAMA cases (35.7%). This is possibly due to the fact that our hospital, a large tertiary care hospital in a major metropolitan city has an extensive medical unit comprising of various subspecialties[11-13]. It is also most likely to admit patients with chronic, serious illnesses requiring prolonged hospitalization and advanced cases which were referred from other hospitals in rural and sub-urban areas. Previous studies have postulated that these patients often refuse to stay in the hospital for a long time[3] as do patients presenting with non-specific complaints such as chest pain, headache, nausea and vomiting who require extensive workup in an internal medicine unit to rule out more serious conditions[14-16].

## CONCLUSION

It is concluded that leaving AMA rates are high in neurological in-patients. Low income and level of health literacy were the most common causes of LAMA in this neurosurgical patient population. Admission to the ICU and proposal of surgical intervention as the treatment modality were significant predictors of neurosurgical LAMA-related discharges.

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