

Association between ICU Admissions during Night and Mortality

ATIF MAHMOOD

ABSTRACT

Aim: To determine the association between admissions to the ICU during the night and patient outcome.

Method: The study included 3242 patients admitted between January 2005 to December 2010 to ICU. Of these patients 821 were admitted to ICU between 10pm to 8am. The ICU had an in house senior doctor during the last 2 years of study and we were able to compare the difference in mortality in these 2 years with the previous 3 years when there was no senior doctor during the night.

Conclusion: Patients admitted during the night had much higher severity of disease and mortality. In addition to requiring high quality infrastructure and equipments there were equally important other quality indicators including physician staffing, nurse patient ratio. Initial management in emergency department and ICU had major outcome in patient's mortality. Also during last 2 years of study appointment of in house senior registrar during night resulted in 12% reduction in mortality during this period. As all over the world the ICU beds are going to increase in Pakistan and we need to look into all these issues to improve the quality of care.

Key words: Mortality, ICU.

INTRODUCTION

Intensive care units have developed recently all over Pakistan in past 10 years. Hospitals have invested heavily in Infrastructure and human resources. The object of the study was to see the outcome. During the working it was observed that mortality was higher during the night and it was decided to conduct a study.

The night time was marked between 10pm and 8am. ICU was staffed by Nurses, House Physicians, Postgraduates, Residents and Registrars. The Consultant intensivists and Consultant Physicians were not in house and were on-call. There was one intensivist who shared one night call with three consultant anaesthetist with Roster off one in Four on call.

We used Hospital software, Patients files, Weekly ICU, MMR meeting to assess the number of admissions, underlying illnesses and specially the severity of the conditions.

METHODS

The study included 3242 patients admitted between January 2005 to December 2010 to ICU. Of these 821 patients were admitted to ICU between 10pm to 8am. This meant a high proportion of admissions during the night which was 25.32% were admitted during this time but more striking was the fact that

Department of Pulmonary & Critical Care, Fatima Memorial Medical and Dental College, Lahore
Correspondence to Dr. Atif Mahmood, Associate Professor
atif-mahmood@hotmail.com

they had much higher proportion of severity. Fatima Memorial being tertiary care hospital had referrals from other hospitals and it was noted that they were referred after either their conditions deteriorated over the day and evening and large number of hospital consultant did the inpatient rounds in the evening and they referred because patients needed ventilation or advanced ICU care.

The ICU mortality in total was 475 during period of 5 years which was 14.65% of the total ICU admissions. We used hospital software, patient files, weekly ICU MMR meetings to assess the number of admissions under lying illnesses and specially the severity of conditions.

DISCUSSION

In this study we found ICU admissions during the night associated with increased severity. It was noted that Fatima Memorial ICU being an advance Teaching Hospital had referrals from other hospitals and they were referred during this period because their condition deteriorates over the evenings and large number of Private Hospitals did the inpatient rounds during evening and referred or dumped their patients to Fatima Memorial ICU. It was also noted that there was lack of communication and referral process. Over the past two decades, Pakistans private health care has invested heavily in health care with private medical schools and 500-1000 bedded teaching hospitals. In number of specialities like Eye, ENT there is decrease in hospital beds but there is need for increased critical care beds. In USA

critical care beds have increased by 26.2% from 1985 to 2000.

With this massive increase came extensive pressure on newly developing ICU, with increasing demand and expectations from the patients and hospital administration. Over the years different protocols like leapfrog ICU standard have been set, which emphasis on structure like Physician staffing, Nurse: patient ratio, process like VAP prevention, Glycemia control, hand washing and Transfusion.

There were only 11 telephone calls from referring Consultants telling about the patient. Lots of patients were shifted with single nurse doing CPR, poor ambulance service. We were also able to identify poor Emergency Department handling of these critical patients, with no Senior Doctor to manage these patients arriving in Emergency.

During 2009 an In house senior registrar was appointed, as consequence there was 12% reduction in mortality during this period, reduction in incidents of VAPs, better nursing care. There was also

reduction in complains about patient care during the night.

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