Admission Time and Outcomes of Patients in a Medical Intensive Care Unit

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Studies have shown that weekend or night admissions to intensive care units (ICUs) are associated with increased mortality in critically ill patients. Our study aimed to evaluate the effects of admission time and day on patient outcomes in a medical ICU equipped with patient management guidelines, and staffed by intensivists on call for 24 hours, who led the morning rounds on all days of the week but did not stay in-house overnight. The study enrolled 611 consecutive patients admitted to a 26-bed medical ICU in a university hospital during a 7-month period. We divided them into two groups, which we labeled as "office hours" (08:00–18:00 on weekdays) and "non-office hours" (18:00–08:00 on weekdays, and all times on weekends) according to their ICU admission times. The clinical outcomes were compared between the groups. The effects of admission on weekends, at night, and various days of the week on hospital mortality were also evaluated. Our results showed that there were no significant differences in ICU and hospital mortalities between patients admitted during office hours and those admitted during non-office hours (27.2% *vs.* 27.4%, $p = 1.000$; 38.9% *vs.* 37.6%, $p = 0.798$). The ICU length of stay, ICU-free time within 21 days, and length of stay in the hospital were also comparable in both groups. Among the 392 patients requiring mechanical ventilation, the ventilator outcomes were not significantly different between those in the office-hour group and the non-office-hour group. Multivariate logistic regression analyses showed that the adjusted odds of hospital mortality were not significantly higher for patients admitted to our ICU on weekends, at night, or on any days of the week. In conclusion, our results showed that non-office-hour admissions to our medical ICU were not associated with poorer ICU, hospital, and ventilator outcomes, compared with office-hour admissions. Neither were time of day and day of the week admissions to our ICU associated with significant differences in hospital mortality.

Key Words: admission, critical care, intensive care unit, mortality, time factor
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Usually, fewer people work in hospitals on weekends than on weekdays. Such shortfalls in hospital staffing levels lead to less effective hospital functioning, and undoubtedly a lower quality of patient care on weekends. For instance, earlier studies have shown that neonatal mortality is higher for babies born on weekends than among those born on weekdays [1–3]. A large study involving all acute care hospitals in Ontario, Canada, over a 10-year period showed that patients with serious medical conditions have a significantly increased mortality rate if they are admitted

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on weekends [4]. A similar study in California also found that patients admitted to hospitals on weekends have a higher risk-adjusted mortality than patients admitted on weekdays [5].

Since good quality care for critically ill patients relies more on the availability of adequate medical staff, immediate diagnostic studies, early therapeutic procedures, and appropriate treatments, the "weekend effect" on hospital mortality was expected to be stronger for patients admitted to intensive care units (ICUs) than for those admitted to wards. A cohort study in Finland using a national ICU database showed that weekend admissions, as compared with weekday admissions, are associated with increased mortality in critically ill patients [6]. Data from the Mayo Clinic also showed that weekend ICU admissions are associated with a higher hospital mortality rate than weekday ICU admissions [7]. In addition, a "night effect", similar to the "weekend effect", was also observed among patients requiring ICU admission [6,8]. Another study on emergency admissions to a pediatric ICU also demonstrated an increased risk of death for pediatric patients admitted with shock, congenital cardiovascular diseases, or cardiac arrest during evening hours [9].

Recently, Arabi et al [10] demonstrated that clinical outcomes are consistent for patients admitted during weekdays, weeknights, and weekends to an ICU when it is staffed by on-site certified intensivists 24 hours a day, 7 days a week. However, for most ICUs worldwide, on-site availability of qualified intensivists is reduced on weekends and weeknights compared with weekdays. This is largely because of economic constraints and the paucity of qualified intensivists. With recent advances in critical care medicine, increased standard care for critically ill patients has been established and successfully transformed into hospital- or ICU-based management guidelines [11–20]. Moreover, the wide availability of telecommunication systems makes it easier for on-call intensivists to participate in the decision-making process for managing newly admitted critically ill patients. We hypothesized, therefore, that the time and day of admission does not influence the outcomes of patients admitted to a "closed" medical ICU equipped with patient management guidelines, if it can be staffed by intensivists on call for 24 hours, who lead the morning rounds on all days of the week but do not stay in-house overnight. The present study aimed to compare the hospital mortality, ICU mortality, and other clinical outcomes of patients admitted to our medical ICU at different times of the day and on different days of the week.

Materials and Methods

Setting and patients

This study was approved by the institutional review board (IRB) of Kaohsiung Medical University Hospital, and the need for written informed consent was waived by the IRB. Eligible participants for analysis were adult patients admitted to a 26-bed medical ICU in a university hospital between February 1, 2006 and August 31, 2006. Patients who were later transferred to another ICU for any reason, those requesting comfort care only, and patients re-admitted to the ICU within the same hospital stay were excluded from the present study.

The critical care in our medical ICU was provided by two service teams comprising attending physicians, critical care fellows, resident physicians, critical care pharmacists, critical care nurses, and respiratory therapists. The attending physicians, all of whom were qualified specialists in both pulmonology and critical care medicine, worked as full-time dedicated intensivists in the medical ICU. The bedside patient rounds led by the attending intensivists were made in the morning from 08:30 to 11:30, all days of the week. The attending intensivists did not stay in-house at night, but were available for guidance in patient care by phone and for coming to the ICU if needed. Resident physicians from the Department of Internal Medicine staffed the ICU at a constant level 24 hours a day, 7 days a week. The nurse-to-patient ratio was maintained at 1:2 at all times. Patient management guidelines and protocols, including an intensive insulin infusion protocol, feeding protocol, pain control, sedation and paralysis protocol, lung protective ventilatory strategy, ventilator weaning protocol, management guidelines for hospital-acquired and ventilator-associated pneumonia, and management guidelines for severe sepsis and septic shock were implemented in our ICU, and were driven by resident physicians, critical care nurses, and respiratory therapists.

Patients with prolonged mechanical ventilation (>21 days of mechanical ventilation) were transferred to the respiratory care center, a step-down ICU, for continuous critical care if their conditions were stable.

As a result, only a small number of patients stayed in our ICU for more than 21 days.

Data collection and study design

The baseline characteristics and clinical outcomes of all patients were retrospectively collected by reviewing their medical records. Patient characteristics including age, sex, Acute Physiology and Chronic Health Evaluation (APACHE) II scores, primary reasons for ICU admission, and sources were routinely recorded upon admission to our ICU. Those included in our study were grouped into two groups, the office-hour group and the non-office-hour group, according to their ICU admission times. The hospital, ICU, and ventilator outcomes were compared between these two groups. To determine the effects of time of the day and day of the week admissions on hospital mortality, the patients were further grouped into various categories according to their ICU admission times and days. The time intervals for grouping categories were defined as shown in Table 1. The crude and adjusted odds of hospital mortality among patients admitted to the ICU at different times of the day and on different days of the week were also analyzed.

Outcome measurements

Hospital mortality was the primary endpoint in this study. Secondary endpoints included ICU mortality, ICU length of stay (LOS), hospital LOS, ICU-free days within 21 days, ventilator days, ventilator-free days within 21 days, and prolonged mechanical ventilation.

Statistical analysis

All data were analyzed by the Statistical Package for the Social Sciences version 13.0 software (SPSS Inc., Chicago, IL, USA). Continuous data are presented as mean ± standard deviation. Proportions are presented as number (%). Comparisons between groups were analyzed by using the unpaired two-tailed *t* test, Mann–Whitney *U* test, χ^2 test, or Fisher's exact test as appropriate. The association of patient characteristics with hospital mortality was analyzed by multivariate logistic regression. The effects of ICU admission time and day on hospital mortality was analyzed by univariate logistic regression for crude odds ratio (OR), and further analyzed by multivariate logistic regression for adjusted OR, using age, sex, APACHE II score, primary reason for admission, and patient source for adjustment. Statistical significance was defined as $p < 0.05$.

Results

Patient inclusion and baseline characteristics

During the study period, there were 684 patients admitted to our medical ICU. After excluding 13 patients who were later transferred to other ICUs, 38 patients requesting for comfort care only, and

Table 1. Definition of time period of intensive care unit admission for grouping categories

Grouping category	Definition
Workdays or weekends	
Workdays	00:00–24:00, Monday to Friday
Weekends	00:00–24:00, Saturday, Sunday, and national holidays
Daytime or nighttime	
Daytime	08:00–18:00, 7 days a week
Nighttime	18:00–08:00, 7 days a week
Office or non-office hours	
Office hours	08:00–18:00 on weekdays
Non-office hours	18:00–08:00 on weekdays, and all times on weekends
Days of the week	00:00–24:00, calendar days of the week
Time period of the day	
Morning	08:00–12:00, 7 days a week
Afternoon	12:00–18:00, 7 days a week
Evening	18:00–24:00, 7 days a week
Midnight	00:00–08:00, 7 days a week

22 patients re-admitted to the ICU within the same hospital stay, a total of 611 patients were included for analysis. The baseline characteristics of these patients, including age, sex, APACHE II score, primary reason for admission, and patient source are shown in Table 2.

Office-hour admissions vs. non-office-hour admissions

Two hundred and thirty-nine (39.1%) patients were admitted to the ICU during office hours, while 372 (60.1%) were admitted during non-office hours. There were no significant differences in baseline characteristics between patients admitted during office hours and those admitted during non-office hours (Table 2). The analyses of clinical outcomes in these two groups showed that the ICU mortality rate was 27.2% for patients admitted during office hours, not significantly different from 27.4% for patients admitted during non-office hours ($p = 1.000$). The hospital mortality rates were also similar in both groups (38.9% *vs.* 37.6%, $p = 0.798$). In addition, there were no significant differences in ICU LOS, ICU-free days within 21 days, and hospital LOS between these two groups. For the 392 patients requiring mechanical ventilation, the average ventilator days and ventilator-free days were similar for patients admitted during office hours and non-office hours (8.7 ± 6.9 days *vs.* 8.1 ± 7.2 days, $p = 0.437$; 6.0 ± 7.5 days *vs.* 5.8 ± 7.8 days, $p = 0.814$). The proportions of patients requiring prolonged mechanical ventilation were also similar in both groups (16.5% *vs.* 14.3%, $p = 0.215$) (Table 3).

Association of baseline characteristics with hospital mortality

Multivariate logistic regression analysis showed that the APACHE II score was an independent risk factor for hospital mortality (OR = 1.12; 95% confidence interval [CI] = 1.09–1.15). Patients admitted to the ICU for bleeding had higher hospital mortality (OR = 2.68; 95% CI = 1.30–5.49), while patients admitted for heart diseases had significantly lower hospital mortality (OR = 0.31; 95% CI = 0.11–0.86), using patients admitted for severe sepsis or septic shock as the reference category. Regarding the sources of ICU admissions, patients admitted from wards had a significantly higher hospital mortality rate (OR = 1.93; 95% CI = 1.28–2.91), while patients transferred from other hospitals had lower hospital mortality (OR = 0.59; 95% CI = 0.28–1.25), using patients admitted from the emergency department as the reference category (Table 4).

Crude and adjusted odds of hospital mortality by time of day and day of the week of ICU admissions

To determine the effects of time of day and day of the week of ICU admissions on hospital mortality, the

Table 2. Baseline characteristics of patients by time of admission

	Total patients ($n = 611$)	Office hours ($n = 239$)	Non-office hours ($n = 372$)	p*
Age (yr)	66.0 ± 15.1	66.2 ± 15.6	65.9 ± 14.8	0.778
Sex (male)	360 (58.9%)	147 (61.5%)	213 (57.25%)	0.313
APACHE II score	21.7 ± 9.4	21.9 ± 9.4	21.6 ± 9.4	0.734
Primary reason for admission				0.204
Severe sepsis or septic shock	288 (47.1%)	110 (46.0%)	178 (47.9%)	
Acute respiratory failure	129 (21.1%)	52 (21.8%)	77 (20.7%)	
Bleeding	47 (7.7%)	24 (10.0%)	23 (6.2%)	
Heart disease	34 (5.6%)	16 (6.7%)	18 (4.8%)	
Post-resuscitation	37 (6.1%)	15 (6.3%)	22 (5.9%)	
Other	76 (12.4%)	22 (9.2%)	54 (14.5%)	
Patient source				0.007
Emergency department	312 (51.1%)	119 (49.8%)	193 (51.9%)	
Wards	219 (35.8%)	93 (38.9%)	126 (33.9%)	
Other hospitals	52 (8.5%)	11 (4.6%)	41 (11.0%)	
Other ICUs	28 (4.6%)	16 (6.7%)	12 (3.2%)	

*Office-hours group *vs.* non-office-hours group. APACHE = Acute Physiology and Chronic Health Evaluation; ICUs = intensive care units.

Table 3. Clinical outcomes of patients by time of admission

Clinical outcome	Office hours ($n=239$)	Non-office hours ($n=372$)	p
ICU outcomes			
ICU mortality	65 (27.2%)	102 (27.4%)	1.000
ICU LOS	8.0 ± 6.4	7.3 ± 6.3	0.149
ICU-free days within 21 days	9.0 ± 7.8	9.6 ± 7.9	0.364
Hospital outcome			
Hospital mortality	93 (38.9%)	140 (37.6%)	0.798
Hospital LOS	22.6 ± 21.7	20.8 ± 20.5	0.303
Patients requiring mechanical ventilation ($n=392$)	162 (67.8%)	230 (61.8%)	0.142
Ventilator days	8.7 ± 6.9	8.1 ± 7.2	0.437
Ventilator-free days within 21 days	6.0 ± 7.5	5.8 ± 7.8	0.814
Prolonged mechanical ventilation	26 (16.5%)	32 (14.3%)	0.215

ICU = intensive care unit; LOS = length of stay.

Table 4. Multivariate logistic regression analysis showing the association of baseline characteristics of patients with hospital mortality

	OR (95% CI)	p
Age (yr)	1.01 (0.99–1.02)	0.172
Sex (female)	0.72 (0.49–1.07)	0.106
APACHE II score	1.12 (1.09–1.15)	< 0.001
Primary reason for admission		0.007
Severe sepsis or septic shock*	1	
Acute respiratory failure	1.18 (0.72–1.94)	0.506
Bleeding	2.68 (1.30–5.49)	0.007
Heart disease	0.31 (0.11–0.86)	0.024
Post-resuscitation	2.07 (0.86–4.98)	0.103
Other	1.13 (0.61–2.06)	0.704
Patient source		
Emergency department*	1	
Wards	1.93 (1.28–2.91)	0.002
Other hospitals	0.59 (0.28–1.25)	0.170
Other ICUs	0.96 (0.37–2.46)	0.929

*The reference category in logistic regression analysis. OR = odds ratio; CI = confidence interval; APACHE = Acute Physiology and Chronic Health Evaluation; ICUs = intensive care units.

patients were further grouped into various categories according to their ICU admission times and days. Univariate logistic regression analyses showed that the hospital mortalities of non-office-hour admissions, weekend admissions, and night admissions were not significantly different from that of office-hour admissions, weekday admissions, and day admissions, respectively (OR = 0.95, 0.91, 1.08; 95% CI = 0.68–1.32, 0.62–1.35, 0.78–1.50). Multivariate logistic regression analyses also showed that there were no significant differences in adjusted odds of hospital mortality between patients admitted to the ICU during office hours *vs.* non-office hours, on weekdays *vs.* weekends, and at daytime *vs.* nighttime. Moreover, there were no significant differences in hospital mortality between patients admitted to the ICU on different days of the week. Even after adjustment for confounding factors, days of the week admissions to the ICU were not associated with significant differences in hospital mortality (Table 5).

The results also showed that patients admitted to the ICU in the afternoon had the lowest adjusted odds of hospital death (OR = 0.67; 95% CI = 0.32–1.38), compared with those admitted in the morning (OR = 1),

Table 5. Hospital mortality rates, crude and adjusted odds of hospital mortality by time of the day and day of the week of ICU admissions

ICU admission time	Hospital mortality (%)	Crude OR (95% CI)	p	Adjusted OR (95% CI)†	p
Office or non-office hours					
Office hours*	93/239 (38.9%)	1		1	
Non-office hours	140/372 (37.6%)	0.95 (0.68–1.32)	0.751	1.09 (0.74–1.61)	0.662
Workdays or weekends					
Weekdays*	182/471 (38.6%)	1		1	
Weekends	51/140 (36.4%)	0.91 (0.62–1.35)	0.636	0.79 (0.50–1.25)	0.310
Day or night					
Day*	117/314 (37.3%)	1		1	
Night	116/297 (39.1%)	1.08 (0.78–1.50)	0.648	1.46 (0.99–2.14)	0.056
Day of the week					
Monday*	38/93 (40.9%)	1		1	
Tuesday	36/96 (37.5%)	0.87 (0.48–1.56)	0.636	0.80 (0.41–1.60)	0.534
Wednesday	38/96 (39.6%)	0.95 (0.53–1.70)	0.858	0.80 (0.40–1.61)	0.535
Thursday	30/83 (36.1%)	0.82 (0.45–1.51)	0.521	0.71 (0.35–1.44)	0.342
Friday	40/103 (38.8%)	0.92 (0.52–1.63)	0.772	1.17 (0.60–2.25)	0.650
Saturday	28/80 (35.0%)	0.78 (0.42–1.45)	0.429	0.68 (0.33–1.41)	0.302
Sunday	23/60 (38.3%)	0.90 (0.46–1.75)	0.755	0.73 (0.34–1.57)	0.418
Time period of the day					
Morning*	22/54 (40.7%)	1		1	
Afternoon	95/260 (36.5%)	0.84 (0.46–1.52)	0.561	0.67 (0.32–1.38)	0.275
Evening	78/205 (38.0%)	0.89 (0.49–1.65)	0.718	1.02 (0.49–2.13)	0.963
Midnight	38/92 (41.3%)	1.02 (0.52–2.03)	0.947	1.09 (0.48–2.49)	0.840

*The reference category in logistic regression analysis; †adjustment was made for age, sex, Acute Physiology and Chronic Health Evaluation II score, primary reason for admission, and patient source. ICU = intensive care unit; OR = odds ratio; CI = confidence interval.

and patients admitted in the middle of the night had the highest adjusted odds of hospital death (OR = 1.09; 95% CI = 0.48–2.49). However, the differences did not reach statistical significance.

DISCUSSION

The results of our study showed that non-office-hour admissions to our ICU were not associated with poorer clinical outcomes. There were no significant differences in ICU mortality, hospital mortality, ICU LOS, hospital LOS, ventilator days, and prolonged mechanical ventilation between patients admitted during office hours and those admitted during non-office hours. Moreover, both univariate and multivariate logistic regression analyses showed that the hospital mortality rates were not significantly higher for patients admitted to our ICU on weekends, at night, or on any day of the week. This implies that our ICU functioned consistently 24 hours a day and 7 days a week.

Our study showed that 22.9% of ICU admissions occurred during the weekends and 48.6% occurred during the night. As a result, a remarkably high proportion (60.1%) of patients was admitted to our ICU during non-office hours. This is similar to other reports that 65.6–69% of ICU admissions occurred during weekends or at night [10,21]. Since accurate diagnoses and appropriate management during the first few hours after ICU admission are crucial for the clinical outcomes of critically ill patients, it is very important to maintain consistent ICU function during non-office hours.

Organization factors proved to have great impact on the clinical outcomes of patients requiring ICU admission. Among them, the presence of intensivists in the ICU has been regarded as increasingly important for the quality of care of critically ill patients. For example, changing from an "open" to a "closed" ICU format improved patient outcomes [22]. Young and Birkmeyer [23] reviewed the current literature and reported that intensivist-model ICUs are associated with 15–60% of relative reductions in mortality rates. Another review of the literature by Pronovost et al [24] showed that high-intensity ICU physician staffing (mandatory intensivist consultation or closed ICU) is associated with reduced hospital and ICU mortality and hospital and ICU LOS, compared with low-intensity ICU physician staffing (no intensivist or elective intensivist consultation).

The 2003 Society of Critical Care Medicine guidelines for adult ICUs have recommended a 24-hour in-house coverage by intensivists who are dedicated to the care of ICU patients and do not have conflicting responsibilities [25]. However, it is difficult for most institutions to reach such staffing levels in their ICUs. A cross-sectional survey of Canadian adult ICUs showed that only 15% of adult and pediatric ICUs have in-house intensivists overnight [26]. Fortunately, there are other ways to improve the quality of ICU care. Studies have demonstrated improved outcomes when protocols are implemented into critical care [27]. We have developed and successfully implemented several protocols and guidelines for the management of critically ill patients in our ICU, including an intensive insulin infusion protocol, feeding protocol, pain control, sedation and paralysis protocol, lung protective ventilatory strategy, ventilator weaning protocol, management guidelines for hospital-acquired and ventilator-associated pneumonia, and management guidelines for severe sepsis and septic shock. These protocols and guidelines, driven by resident physicians, critical care nurses, and respiratory therapists, helped our ICU maintain a constant quality of care, particularly during nights when intensivists did not stay in-house. One of the major roles of intensivists in our ICU was to develop and renew the patient management protocols and guidelines according to the best available evidence-based medicine, as well as to educate the members of the critical care team to be familiar with these protocols and guidelines.

Although the differences were not significant, the adjusted odds of hospital death were higher for patients admitted to the ICU at night, compared to those admitted during the day (OR = 1.46; 95% CI = 0.99–2.14; $p = 0.056$). On the other hand, the adjusted odds of hospital death were not higher for patients admitted to the ICU on weekends, compared with those admitted on weekdays (OR = 0.79; 95% CI = 0.50–1.25; $p = 0.31$). These results were somewhat compatible with the staffing pattern in our ICU where resident physicians and critical care nurses staffed the ICU in-house at constant levels all the time, while dedicated intensivists led the morning rounds on all days of the week but did not stay in-house overnight. In our ICU, there were fewer ICU admissions (data not shown) and no conferences on weekends. With the same staffing levels, the lighter workload might result in better patient care and, therefore, lower hospital mortality for patients admitted on weekends.

In addition, the observation that the adjusted odds of hospital mortality were higher for morning admissions than for afternoon admissions, and were higher for midnight admissions than for evening admissions implied that there might be "morning effects" and "sleep deprivation effects" beyond the effect of staffing levels. Routine morning service and teaching rounds, case conferences, and journal clubs in our ICU were all held in the morning. Moreover, more procedures were performed in the morning than in other time periods. Such a heavy workload might be associated with the poorer outcomes for patients admitted in the morning than in the afternoon, even though the staffing levels were equal in both time periods. In addition, studies have shown that sleep deprivation of physicians is associated with a decline in performance [28–30]. As the in-house resident physician shifts in our ICU were >24 hours in duration, the sleep-deprivation effects might explain the slightly higher adjusted mortality rate for patients admitted at around midnight than earlier in the evening.

The present study has certain limitations in that only a small number of patients were included for analysis, and the data were collected from a single ICU in one medical center. However, this is the first study reporting the effects of time and day factors of ICU admission on patient outcomes in Taiwan. We report on our experience and hope it will contribute to the continuous improvement in the quality of critical care in Taiwan.

In conclusion, our results showed that non-office-hour *vs.* office-hour admissions were not associated with poorer ICU, hospital, or ventilator outcomes in a medical ICU equipped with patient management guidelines, and staffed by intensivists on call for 24 hours, who led the morning rounds on all days of the week but did not stay in-house overnight. Moreover, time of day and day of the week admissions to our ICU were not associated with significant differences in hospital mortality.

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內科加護病房病患之入院時間對其治療成效之影響

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研究顯示於週末或夜間入院至加護病房 (ICU) 的重症病患其死亡率較高。本研究的目的在評估一個內科 ICU (具有病患診治指引，且 24 小時均有重症醫師 on-call，由其帶領醫療團隊每週七天查房，但夜間未留在醫院)，是否入 ICU 時間的不同會影響病患治療的成效。我們將七個月內住院至一大學附設醫院之內科 ICU 的病患共 611 名，依其入 ICU 的時間，分為上班時間 (週一至週五 08:00－18:00) 入院及非上班時間 (週一至週五 18:00－08:00，及週末的任何時間) 入院兩組，比較其病患治療成效的不同。並進一步評估週末、夜間、及一星期中的不同日子入院至 ICU，是否會影響病患之住院死亡率。我們的研究結果顯示，於上班時間入院及非上班時間入的兩組病患，其 ICU 死亡率 (27.2% *vs.* 27.4%，p = 1.000) 及住院死亡率 (38.9% *vs.* 37.6%，p = 0.798) 均無顯著的差異。兩組病患的 ICU 住院日數、21 天內不需住 ICU 的日數、住院總日數等在亦無顯著差異。對於需使用呼吸器治療的 392 位病患，其呼吸器使用的最終結果，亦未因於上班時間或非上班時間入 ICU 而有所不同。多變項邏輯式迴歸分析則顯示，於調整其他影響因素後的住院死亡率，並未因病患是週末入院、夜間入院、或是一星期中的某一天入院而有顯著的上升。本研究之結論為，於非上班時間入院至我們內科 ICU，並不會有較差的臨床治療成效。病患的住院死亡率，並未因其於一天中的某一時段或一星期中的某一天入 ICU 而有顯著的差異。

關鍵詞： 住院，重症加護，加護病房，死亡率，時間因素
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