

Short Report

Apache II Score as a Predictor of Length of Stay and Outcome in our ICUs

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Abstract

The APACHE II (acute physiology and chronic health evaluation) is used widely for predicting probability of hospital mortality and length of stay in the ICU. APACHE II forms were available to all ICU residents within 24 hours of admission, and a score was assigned to them. Based on our results the APACHE II score has reliably predicted an outcome of the least amount of length of stay (LOS) in the ICU as well as a 100% probability of being shifted out of the ICU for a score of <10 (according to international benchmarks). This reliable scoring system can be used for predicting mortality and length of stay and therefore, resource allocation, antibiotic use and ethical decisions regarding counseling families about end of life decisions - all within 24 hours of admissions.

Introduction

Mortality from sepsis remains unacceptably high throughout the world. The cost of treating virulent infections is also high.¹ A variety of systems for assessing severity of illness in critically ill patients have been described. Many studies have examined hemodynamic parameters in an attempt to identify those that are prognostic indicators in patients with septic shock.² The APACHE II (acute physiology and chronic health evaluation) is used widely for predicting probability of hospital mortality³ and length of stay in the ICU. The APACHE II score combines a variety of physiologic variables, age and chronic health variables, according to which a numeric score is allotted.^{4,5}

Patients, Methods and Results

Thirty four patients were enrolled in the study. The inclusion criteria were all patients admitted to ICU while there were no exclusion criteria. APACHE II forms were available to all ICU residents within 24 hours of admission, and a score was assigned to the patients. These included Physiological parameters, age and chronic health score. The results of the data collected are shown in Tables 1 and 2.

Comments

A variety of systems for assessing severity of illness in critically ill patients have been described. The APACHE II (acute physiology and chronic health evaluation) is Based on our results the APACHE II score has reliably predicted an outcome of the least amount of LOS in the ICU as well as a 100% probability of being shifted out of the ICU for a

Table 1. APACHE II score vs outcome and Length of stay.

(Key: Outcome: 1 = shifted, 2 = expired)

No.	APACHE II score	Outcome	Length of Stay (days)
1	8	1	1.7
2	18	1	4.9
3	13	1	16.1
4	13	1	3.2
5	13	1	2.1
6	15	1	6.3
7	10	1	9.5
8	19	1	22.7
9	13	2	5.5
10	16	1	2.6
11	18	2	16.1
12	18	2	32.5
13	15	1	17.3
14	17	1	3.3
15	7	1	13.4
16	23	1	27
17	14	1	13
18	14	1	1.8
19	10	1	5.4
20	25	2	2.9
21	7	1	4
22	14	1	10.9
23	23	1	4.9
24	12	1	14.1
25	16	1	5.4
26	14	2	5.5
27	13	1	5.6
28	24	2	32.4
29	15	1	3.1
30	18	2	6.6
31	11	1	3.5
32	17	2	4.9
33	20	2	7.4
34	11	1	5

score of < 10 (according to international benchmarks).⁶ used

Table 2. Data analysis.

APACHE II (3- >25)	No. of patients	Days (average)	Outcome (% shifted)
3-10	5	6.9	1.0
11-15	14	7.68	0.86
16-20	10	18	0.6
21-25	5	16.8	0.5

widely for predicting probability of hospital mortality. This worsens for worsening scores (for example, for a score of 16-20, the LOS increases to 18 and chance of mortality is 40%). This reliable scoring system can be used for predicting mortality and length of stay and therefore, resource allocation, antibiotic use, as well as, ethical crite-

ria regarding counseling families on end of life decisions - all within 24 hours of admissions. In a developing country the implications of such a system can be multifaceted and extremely beneficial.

References

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