Determinants and outcomes associated with decisions to deny admission in a Tunisian ICU

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INTRODUCTION

All over the world, there is evidence that the demand for intensive care exceeds supply, and rationing of intensive care unit (ICU) beds is common.

Ideally, patients should be admitted to intensive care if they can benefit from admission with a decreased risk of death .

Hopelessly ill patients who will die after admission to intensive care or, conversely, patients who will survive even if not admitted, should not be transferred to ICUs.

Unfortunately, the indications for admission to ICU remain poorly defined, and the identification of patients who can benefit from intensive care is extremely difficult.

Purpose

To analyze determinants and outcomes associated with decisions to deny or to delay ICU admission in critically-ill patients.

MATERIELS ET METHODS

This was a observational prospective study performed in a 7-bed medical ICU at Farhat Hached University Hospital in Sousse.

All patients for whom ICU admission was requested from January 1st 2015 and June 30th 2015 were included and prospectively evaluated.

The following data were prospectively recorded for all adult patients referred to the ICU: day of the triage decision, age, gender, comorbidities, reasons for requesting ICU admission, severity of illness of ICU referral using the mortality prediction model at admission (MPM-0).

RESULTS

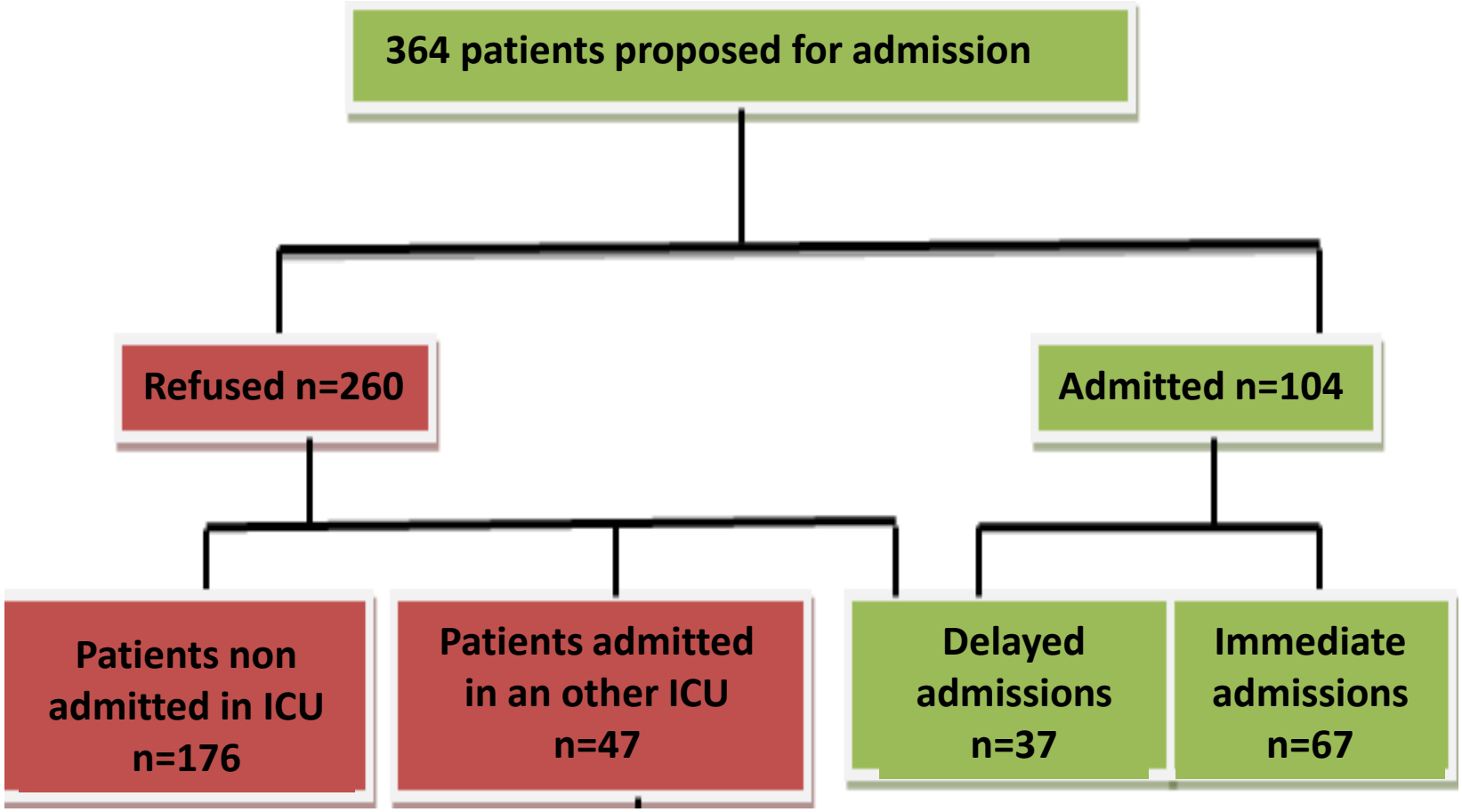
364 patients proposed for admission
Refused n=260
Admitted n=104
Patients non admitted in ICU n=176
Patients admitted in an other ICU n=47
Delayed admissions n=37
Immediate admissions n=67

Table1:Patients characteristics

Variables	**Admitted patients** n=104	**Refused patients** n= 260	**p**
Age, yr (mean±SD)	**56±19.28**	**54±19.64**	**0.5**
Male gender, n %	**68(65.4)**	**170 (65)**	**0.09**
Comorbidities n(%)			
Cardiac disease	**11(10)**	**58(22)**	**0.03***
Respiratory disease	**38(36)**	**51(19)**	**0.05**
Neurological disease	**10(9)**	**56(21)**	**0.02***
Renal failure	**10(9)**	**15(5)**	**0.6**
Diabetes mellitus	**22(21)**	**51(19)**	**0.8**
Hypertension	**33(31)**	**29(11)**	**0.03***
MPM0(mean±SD)	**31±25**	**32±27**	**0.81**
The reasons for requesting ICU admissionn(%)			
Cardiac arrest,	**8(7)**	**20(7.7)**	**0.8**
Metastatic cancer	**9(8)**	**39(15)**	**0.04***
Acute respiratory failure	**32(30)**	**48(18)**	**0,05**
Neurological disease	**18(17)**	**26(10)**	**0,06**
Cardiac failure	**10(9)**	**22(8)**	**0.9**
Shock/sepsis	**16(15)**	**45(17)**	**0.8**
Metabolic disease	**4(4)**	**41(16)**	**0.03***
Poisoning	**7(6)**	**19(7)**	**0.7**
Day, n (%)			0.07
Work day	76(73)	175(67.3)	
Holiday	28(27)	85(32.6)	

Table 2: Reasons of refusals admission in ICU

Reasons for refusal	n (%)
Too sick to benefit	62(23.8)
Too well to benefit	36(13.8)
Unit full	130(50)
Therapeutic limitation	28(11)
Family wish	5(1.92)
Other causes	14(5.38)

Table 3: Predictors of ICU admission refusal

Variable	odds ratio	95% CI	p
Neurological disease	3.08	[1.3–19.08]	0.01
Lack of available ICU beds	6.26	[4.14–9.46]	0.03
Cardiac disease	8	[2.41–25.04]	<0.001*
Metabolic disease	2	[1.02–10.02]	0.02

Table 4: Hospital mortality according to the triage decision in each category

	Hospital mortality n (%)	**Length of hospital stay** Median,IQR
Immediately admitted patients,	38 (36.5)	4(3-8)
Later admitted patients	15 (17,2)	5(3-9)
Never admitted patients	45 (60)	3(2-4)

DISCUSSION

We think that our findings add little to the literature regarding the challenges and difficulties encountered by intensivists regarding accepting or refusing ICU admission.

In light of our results, we propose several suggestions and solutions concerning increasing the ICU admission rate in our country and in developing nations in general:

- ✓ first, to increase of number ICU beds because the limited number of critical care beds combined with effective triage decisions probably contributed to the increase in disease acuity of treated patients.

- ✓ Second, the availability of intermediate care or stepdown care and the number of beds in general wards allows earlier discharge from the ICU or admission to ICU.

- ✓ Third, reducing the length of stay of ICU

CONCLUSION

The present study demonstrated that refusal of admission to our ICU correlated with the severity of acute illness, having a full ICU and the admission diagnosis.

These findings suggest the need for further work to define which patients are most likely to benefit from ICU admission