

Chronic Diseases and Outcome in Critically Ill Elderly Admitted to ICU

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ABSTRACT

Background: Elderly patients are a significant and increasing proportion of ICU patients. With advancing age, the comorbidities critically ill elderly patients have substantial mortality. The early recognition of patients at high risk of mortality is needed to plan care in advance and to control healthcare costs. **Aim:** To find out the relation between chronic diseases and outcome in critically ill elderly admitted to ICU. **Study design:** A prospective study.

Participants: seventy elderly patients aged 60 years and above. **Method:** This study was performed in Geriatric ICU in Ain Shams University Hospitals including 70 critically ill elderly patients admitted for 24 hours or more. Each patient was subjected to on admission clinical assessment including detailed history taking, in addition to laboratory investigations.

Results: The results of our study showed that ischemic heart disease was the only chronic diseases that had significant statistical effect on mortality in critically ill elderly admitted to ICU with p. value= 0.002. **Conclusion:** In the current study we found that mortality was associated with history of ischemic heart disease.

Keywords: intensive care units, ICU mortality, elderly, chronic diseases.

INTRODUCTION

The elderly population is expanding in Egypt, like in many other countries, There were 4,400,000 persons aged 60 and over representing 6.9% of the total population in 2006. The expected percentage of older people may reach 8.9% in 2016 and 10.9% in 2026. Life expectancy for Egyptian females was 63.5 years in 1986 increased to 73.6 years in 2006. While, Life expectancy in males was 60.5 years in 1986 and increased to 69.2 years in 2006 (1). This rapid rise in the elderly population worldwide is paralleled by increase in utilization of health care resources (2). Moreover, elderly will need ICU admission more frequently and their management will be more challenging. Data showed that 55% of all ICU bed-days are occupied by patients aged ≥ 65 years (3). Old age is associated with increased mortality in critically ill patients (4). However, age alone is not a strong predictor for mortality. There is evidence suggesting that acute physiological impairment and associated comorbidities were predictors of mortality after adjustment of age (5, 6). The current study was designed to study effect chronic diseases and outcome in critically ill

elderly admitted to ICU, the early recognition of patients at high risk of mortality is needed to plan care in advance and to control healthcare costs.

PATIENTS AND METHODS

Study design:

A prospective single center study was conducted to assess effect of chronic diseases on mortality in critically ill elderly admitted to ICU. 70 consecutively admitted patients were included in the study. All patients were 60 years and over. Patients with ICU stay of less than 24 hours were excluded. The patients were divided into survival group (those who were discharged from the ICU after improvement) and non-survival group (those who died in the ICU). The study was carried out in the ICU of the Geriatrics and Gerontology Department at Ain Shams University Hospital in Cairo Egypt.

Laboratory assessment: Laboratory findings including CBC, bleeding profile, kidney function test, liver function test, albumin and arterial blood gases. Laboratory measures were all performed in Ain Shams University Central Laboratories.

Ethics

The study methodology was reviewed and approved by the Research Review Board of the Geriatrics and Gerontology Department and ethical committee of Faculty of Medicine, Ain Shams University.

Statistical methods:

The collected data were coded, tabulated, revised and statistical analyzed using SPSS program (version 16). Quantitative variables were presented in the form of means and standard deviation. Qualitative variables were presented in form of frequency tables (number and percent). Comparison between qualitative variables was done using Chi square test. P-values <0.05 were considered significant for all tests.

RESULTS

The demographic data of our study population showed that the mean age was 68.5 ± 7.4 years, 33 male and 37 female, 20 smokers and 50 non-smokers.

Rate of mortality between our study populations was 48.5%.

Age, gender and smoking habit had no significant statistical effect on outcome according to our study.

The results of our study showed that ischemic heart disease was the only chronic disease that had significant statistical effect on mortality in critically ill elderly admitted to ICU with p. value= 0.002.

Discussion:

The results of this study showed that age is not a predictor of mortality in elderly patient admitted in ICU. This finding agrees with many other studies which could not establish a positive relationship between age and mortality. Belayachi *et al.* (7) in a study on elderly subjects admitted in a Moroccan ICU could not find an association of age with mortality. Rockwood *et al.* (8) in a two-center study on 1-year outcome observed that although ICU and 1-year mortality rates differed between >65 years and <65 years, but age was not a major contributor to the variance in outcome. de Rooij *et al.* (9), in a meta-analysis from 12 prospective and retrospective studies, also concluded that it is not age per se but factors such as

severity of illness and premorbid functional status that are responsible for poor prognosis.

The goal of the current study was to assess effect of chronic diseases on mortality in critically ill elderly admitted to ICU. The results of our study showed that ischemic heart disease is the only chronic disease that had significant statistical effect on mortality in critically ill elderly admitted to ICU with p. value= 0.002. These results agree with the Retrospective, observational cohort study during 2008-2012 by Zuhal *et al.* (10) to determine whether co morbidities and clinical variables were predictive of ICU mortality. They examined 1013 patients with mean age 70 ± 10 year; they concluded that ICU mortality predictors were arrhythmia and ischemic heart disease in patients admitted to ICU.

Conclusion: In the current study we found that mortality was associated with history of ischemic heart disease.

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Table: showed effect of demographic data and chronic diseases on outcome in elderly admitted in ICU.

	SURVIVE		NOT SURVIVE		Chi-square test	
	No.	%	No.	%	x ²	p-value
Age (years)						
60:70	26	72.22	21	61.76	1.201	0.548
70:80	8	22.22	9	26.47		
more than 80	2	5.56	4	11.76		
Sex						
Male	18	50.00	15	44.12	0.243	0.622
Female	18	50.00	19	55.88		
Hapits						
Smoker	11	30.56	9	26.47	0.143	0.705
non smoker	25	69.44	25	73.53		
DM						
Diabetic	13	36.11	18	52.94	2.007	0.157
not diabetic	23	63.89	16	47.06		
HTN						
HTN	22	61.11	17	50.00	0.875	0.350
NO HTN	14	38.89	17	50.00		
ISHD						
ISHD	18	50.00	5	14.71	9.873	0.002
NO ISHD	18	50.00	29	85.29		
COPD						
COPD	8	22.22	8	23.53	0.017	0.896
NO COPD	28	77.78	26	76.47		
CIRRHOSES						
Cirrhosis	2	5.56	5	14.71	1.627	0.202
no cirrhosis	34	94.44	29	85.29		
ICHGE						
ICHGE	4	11.11	2	5.88	0.610	0.435
NO ICHGE	32	88.89	32	94.12		
RENAL						
RENAL	12	33.33	17	50.00	2.002	0.157
NOT RENAL	24	66.67	17	50.00		