

Evaluation of mortality among patients in the emergency unit in Al-Kindi Teaching Hospital, Baghdad, Iraq

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Abstract: *Background:* During the fifteen year, the deterioration of health system in Iraq due to war and Daesh and the lack of facilities and equipment's led to increasing the mortality and morbidity among people in emergency units. *Aims:* To identify the causes of mortality among cases in the emergency units. *Methodology:* A cross-sectional study was conducted in Al-Kindi teaching hospital in Baghdad for one year. The information was collected from the emergency unit record as well as the patient's card. Stata version 14 was used for analysing this data. *Results:* The mean age of dead patient was 42.47 ± 21.5 years (minimum 3 and maximum 81). The mortality of male 65/120 (54.2%) was more slightly than female 55/120 (45.8%). 75/120 (62.5) had married and 39/120 (32.5%) had a single status. Also, 30/120 (25%) was dying due to cerebrovascular disease then followed by 18/120 (15%) for each traffic accident, diabetes and burn. *Conclusions:* the majority of death was higher among age groups < 40 years and also, the main causes of death is cerebrovascular disease followed by traffic accident and burn. There is a significant relation between ages, gender, and marital status with the causes of death.

Keywords: Mortality, Cerebrovascular, Emergency.

Introduction

The emergency unit is a vital line of each hospital and it's the main gate to receive all the cases of a different cause [1]. During the fifteen year, the deterioration of health system in Iraq due to war and Daesh and the lack of facilities and equipment' sled to increasing the mortality and morbidity among people in emergency unit [2]. All patients are examined immediately upon arrival at the hospital by the appropriate nursing training, according to the patient's health rating quickly according to the five-point scale (1 to 5) [3]. These grades determine the seriousness and priority to the patient's condition for timely appropriate treatment, and according to the criteria this sometimes divides persons into the following categories [4]:

- Patients of Category I prefer those who suffer from serious diseases or critical conditions leading to death such as heart attack, trauma, serious accidents and coma, in which patients are transferred in such cases directly to recovery.
- Type 2 patients: diseases that are not required to be lost?

- Type III patients: A majority of those who have been assigned to the group of observation for treatment.
- Patients of Class, Fourth and Fifth: This group of patients, infants, neurologic patients and pneumonia are non-emergency cases.

Cerebrovascular disease, traffic accident, chronic disease, and the burn is the most reasons for death and leads to increase the mortality rate in emergency unit [5]. For that the aims at this study to identify the causes of mortality of cases in the emergency units.

Material and Methods

A cross-sectional study was conducted in Al-Kindi teaching hospital in Baghdad out of twenty-three hospitals for one year to identify the causes of mortality among patients that admitted the hospital during this year. Before starting to collect our data onto the records the ethical clearance was obtained from the Ministry of Health/ Iraq and also from the hospital.

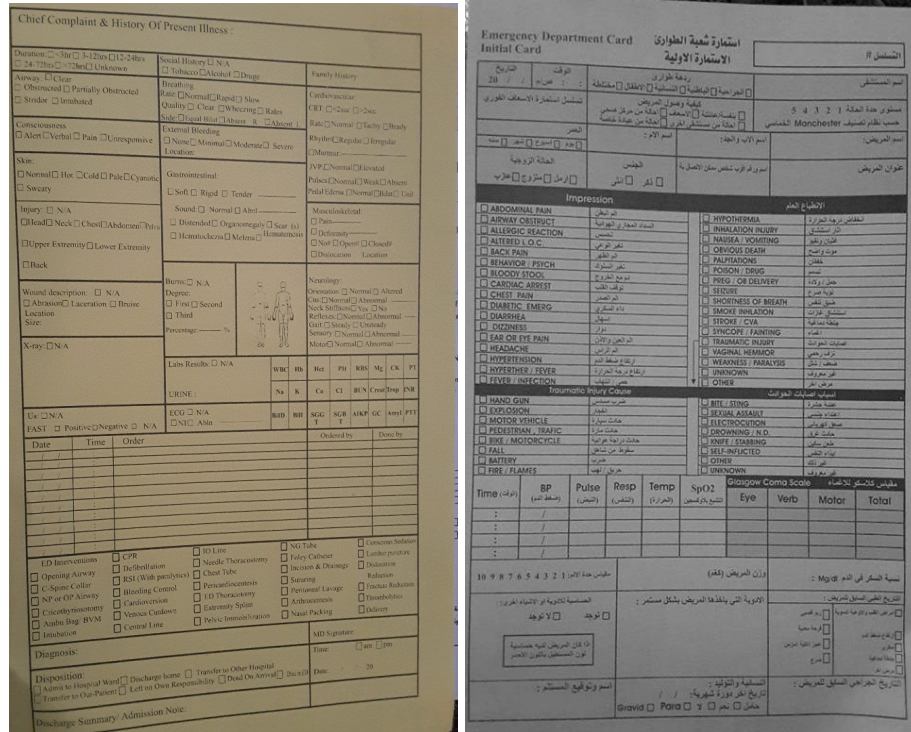
Inclusion criteria: we include-

- All the cases that died during 2017 and the number of participants was 120 cases.
- All deaths for different reasons and confirmed by the physicians

Exclusion criteria: We excluded the cases are not having the confirmation of the causes of death and also the cases out the period of this study.

Al Kindi Teaching Hospital is one of the largest hospitals in Al- Baghdad and covering with more than two million people. The information was collected from the emergency unit record as well as the patient's card [fig-1]. Information included age, gender, length stay in the emergency unit, the cause of death. Stata version 14 was used for analysing this data.

Fig-1: Emergency card for patient



Results

Out of 120 mortality cases, mean age for the dead patients was 42.47 ± 21.5 years (minimum 3 and maximum 81). 51/120(42.5%) was dead in the age less than 40 years, 43/120(35.8%) in the age more than 56 years. Also in the same table, show that the mortality of male 65/120(54.2%) was more slightly than female 55/120(45.8%) [Table 1]. 75/120(62.5) had married and 39/120(32.5%) had a single status [Table1].

Knowing the causes of deaths. In this table show that the highest percentage of mortality case 30/120 (25%) was due to cerebrovascular disease then followed by 18/120 (15%) for each traffic accident, diabetes and burn [table2].

Table-1: Distribution of mortality cases by age, gender and marital status

Age groups	Frequency	Percent
<40	51	42.5
41-55	26	21.7
>56	43	35.8
Total	120	100
Gender		
Male	65	54.2
Female	55	45.8
Total	120	100
Marital status		
Single	39	32.5
Married	75	62.5
Widow	6	5
Total	120	100

Table-2: Distribution of mortality cases by causes of death

Cause of death	Frequency	Percent
Cerebrovascular disease	30	25
Cancer	6	5
Renal failure	8	6.7
Traffic accident	18	15
Accident by fall	7	5.8
Respiratory infection	12	10
Diabetes	18	15
Burn	18	15
Electric shock	3	2.5
Total	120	100

The relationship between age group and the causes of death. In the age group less than 40, show that the highest percentage of mortality was 18/51(35.3%) due to the traffic accident, followed by 17/51(33.3) due to burning. But in the age group 41-55 and >56 years, the highest frequency was cerebrovascular disease 13/26 (50%) and 17/43(39.5%) respectively [Table3]. The Exact chi-square statistic is 27.4 and the p-value is 0.00. The result is significant at p <0.05. The relation between gender and the causes of deaths. Among mortality men, the highest frequency of dead was traffic accident 17/65(26.2%) and cerebrovascular disease 16/65(24.6%). Among mortality female, the highest frequency of dead was cerebrovascular disease and burn 14/55(25.5%) [table3].

Table-3: Distribution of mortality cases by age groups, gender, marital status and causes of death

Age group	Causes of death									Total
	Cerebrovascular disease	Cancer	Renal failure	Traffic accident	Accident by fall	Respiratory infection	Diabetes	Burn	Electric shock	
	F. %	F. %	F. %	F. %	F. %	F. %	F. %	F. %	F. %	
<40	-	2 3.9	4 7.9	18 35.3	7 13.7	-	-	17 33.3	3 5.9	51 100
41-55	13 50	2 7.7	1 3.8	-	-	5 19.3	4 15.4	1 3.8	-	26 100
>56	17 39.5	2 4.7	3 6.9	-	-	7 16.3	14 32.6	-	-	43 100
Total	30 25	6 5	8 6.7	18 15	7 5.8	12 10	18 15	18 15	3 2.5	120 100
Gender										
Male	16 24.6	4 6.2	6 9.2	17 26.2	2 3.1	9 13.8	5 7.7	4 6.2	2 3.1	65 100
Female	14 25.5	2 3.6	2 3.6	1 1.8	5 9.1	3 5.5	13 23.6	14 25.5	1 1.8	55 100
Total	30 25	6 5	8 6.7	18 15	7 5.8	12 10	18 15	18 15	3 2.5	120 100
Marital status										
Single	2 5.1	2 5.1	3 7.7	9 23.1	4 10.3	5 12.8	6 15.4	7 17.9	1 2.6	39 100
Married	26 34.8	4 5.3	4 5.3	9 12	3 4	7 9.3	10 13.3	10 13.3	2 2.7	75 100
Widow	2 33.3	-	1 16.7	-	-	-	2 33.3	1 16.7	-	6 100
Total	30 25	6 5	8 6.7	18 15	7 5.8	12 10	18 15	18 15	3 2.5	120 100

The chi-square statistic was 19.7 and the p-value was 0.00. The result is significant at $p < 0.05$. In addition, the relation between marital status and the causes of death, in this table show that the highest percentage of married cases had cerebrovascular disease 26/65 (34.8) and 10/65 (13.3%) of cases had burn and diabetes. The Exact chi-square statistic was 17.2 and the p-value was 0.02. The result is significant at $p < 0.05$.

The relation between length stayed in EU and age groups, in this table show that the highest frequency of mortality among age group <40 years old 21/51 (41.2%) that dead after 3-12 hours stayed in EU. Therefore, the highest percentage of dead was 9/26 (34.6%) in the age 41-55 years,

after stayed less than 3 hours in EU. The chi-square statistic was 11.2 and the p-value was 0.08, this result is not significant at the p. value less than 0.05 [table 4].

The length stayed in emergency unit and gender. In this table show that the highest frequency of mortality among men was 20/65 (30.8%) that dead after 3 to 12 hours stayed in the emergency unit. But among female was 19/55 (34.5%) that dead between the ranges 12-24 hours after stayed in emergency unit [Table 4]. The chi-square statistic was 1.08 and the p-value was 0.78. This result is not significant at the p value less than 0.05 [Table 4].

Table-4: Distribution of mortality cases by age, gender and length stay in EU

Age groups	Length stay in EU (hours) among dead patients				Total
	<3 hrs	3-12 hrs	12-24	>24 hrs	
<40	10 19.6	21 41.2	17 33.3	3 5.9	51 100
41-55	9 34.6	6 23.1	5 19.2	6 23.1	26 100
>56	14 32.6	9 20.9	14 32.6	6 13.9	43 100
Total	33 27.5	36 30	36 30	15 12.5	120 100
Gender					
Male	19 29.2	20 30.8	17 26.2	9 13.8	65 100
Female	14 25.5	16 29.1	19 34.5	6 10.9	55 100
Total	33 27.5	36 30	36 30	15 12.5	120 100

Discussion

Our study aims to identify the causes of mortality among cases of the emergency unit.

Age: Age is considered a one of a risk factor to increase the mortality among patients with the different cause. Our finding of this study, we found that the mean age for the dead patients were 42.47 ± 21.5 years, compared with another study in Iran [6], the authors found that the mean age were 67.4 ± 9.6 . Also in Nigeria [7], the mean

age were 44 SD +/- 21 years, this may be referred to the difference in situation between countries also in our country are suffering from deterioration of health system as a result from the war and unstable security.

In this study, found that the most mortality cases (42.5%) were dead in the age less than 40 years and (35.8%) in the age more than 56 years. Compared with another study in Nigeria [7], they found that the mortality of cases 32.3% was dead in age <40 and 40.6%

in age more than 56 years. This may be due to the similarity in the situation between countries especially the countries are suffering from unstable situation led to increasing the tension between individual. In other hands, some of these people are losing the patience and they cannot tolerate anything. All this can lead to increasing the mortality among them.

Gender: Also, the gender is an aspect that effects on the mortality among cases. there are Some disease was affected men more than female and vice versa .in our study we found that the mortality among male (54.2%) was more slightly than female (45.8%) and compared with another result from Denmark [8], they found the mortality among female 51.5% was more slightly than male 48.3%. This is a slight difference between our finding and it explains that the male is more exposed to pressure in the home or in work and also may be referred to the family history of some diseases which lead to increase the rate of mortality.

Causes of the death: Cerebrovascular disease mortality is higher rate than another disease. It is usually associated with disease progression, though sudden death has also been reported as a frequent cause of mortality [9]. In this study, we found that the most common causes of death are cerebrovascular disease (25%) and comparison with another study conducted in Iran [6], and found that 39.2% of them died in the emergency unit due to cerebrovascular disease, these differences may be back to family history of disease or most cases are suffering from heart failure of age over 56 years. As well, the chronic diseases are another aspect of increasing the mortality rate in the emergency unit. In this study we found, the mortality rate for cases of diabetes was 15%. Compared with another study in Canada [10], the authors found that only 0.1% of cases are dead due to diabetes. This referred to different from health system between countries. Also the situation of each patient it's depending on some factors leads to increase or decrees the rate of disease.

Road traffic injuries are a major cause of death in the emergency room [11, 12]. In this study, we found that the traffic accident was (15%) among mortality cases. Compared with another study In Nigeria [13], they found that Road traffics

accident caused death in 70.5% and in Tanzania [14]60.2%, this difference between these results back to use the motorcycles in these countries and also they are not using the Protection equipment during the driving. Burn injuries continue to cause morbidity and mortality internationally [15]. Also, we found that the burn caused death was (15%). Compared with another study in Nigeria [7], the authors found the death by burns only 6.7% among cases, this difference referred to different from religion and culture between these countries.

Length stayed in the emergency unit: The duration of stay in emergency varies depending on the patient's condition. Some cases take hours and some others have more than 24 hours [16]. In this study, also we found that 30% of mortality cases are dead between 3-24 hours stayed in the emergency unit. Compared with another studied in Iran [17], they found that 36 patients were dead in the first 24 hours after admission and 24 in the next 24 hours and in Brazil [18], the authors found the cases are dying in the first 24 hrs in the EU. This result was slightly same as our result and may refer to lack of caring in the emergency unit or may have another defect in health system. Based on our finding, there is not a significant relationship between the lengths stayed in the EU and age, gender. Unfortunately, I didn't find a similar result to compare with our finding.

Conclusions

In this study we concluded that the majority of death was higher among age groups less than 40 years and also, the main causes for death are cerebrovascular disease, traffics accident, burn and chronic diseases. The majority of death occurred between 3 to 24 hours that had length stayed in the emergency unit. There is a significant relation between ages, gender, and marital status with the causes of death.

Recommendations

We need to increase the awareness among medical staff about how to manage the emergency case and also, provide the facility and equipment which that help for decreasing the mortality rated in this unit.

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