Study the Cardiac Arrhythmia and Disease Among CCU Patients in Kirkuk City Hospitals (Comparative Study)

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ABSTRACT

Background: Cardiovascular disease is especially likely to affect the elderly and aging population. Adults' ages are an independent risk factor for cardiovascular disease (CVD), although other factors like frailty, obesity and diabetes increase these risks.

Objective: Retrospective study of arrhythmias and conduction disorder among adult patients in the CCU in Kirkuk city Hospitals of the years (2016, 2017, 2018, 2019), as well as to find the demographic characteristics of the patients, frequency and percentage of each type according to the months.

Methodology: A descriptive study were carried out in Kirkuk hospitals (Kirkuk General Hospital and Azadi teaching Hospital), for a period from The data were collected from the period of 1ˢᵗ january 2016 till the 31 december 2019. A 7700 patients that diagnosed with arrhythmias and conduction disorder by the medical staff in CCU in Kirkuk city hospitals and to achieve the objectives of the study. The records of patients was used and sorted by Excel program for purpose of the study, which consist of two part I; demographic data, part II; types of arrhythmias and conduction disorderand Part III; Percentage of each type of arrhythmias according to months of the years (2016, 2017, 2018, 2019). They were analysis of data was carried out using the application of the descriptive statistical data analysis including: Frequencies and percentage.

Results: The result shows that the higher percentage was 29.5% and 27.3% for the age group (58-67) for 2016-2017 and 2018-2019 respectively with regard to the gender the result shows the male high in all years and cosititute (55.7%), (63.7%) for 2016-2017 and 2018-2019 respectively, the high percentage of of arrhythmias disorders were myocrdiac infarction (24.3%) and angina (22.1%) at 2016-2017 years while myocardiac infarction (34.4%) and angina (27.5%) at 2018-2019 years, according to months of the years (2016-2017) (2017-2018), demonstrating that the higher incidence of arrhythmias and conduction disorders for the years 2016 to 2017 was 10.1% in December while the higher incidence of arrhythmias and conduction disorders for the years 2018 to 2019 was in May and represent (18.2%).

Conclusions: The retrospective study that demonstrate the higher percentage between age (58-67) years old. And demonstrate that the prevalence of male is more than the female. Also demonstrate the greater incidence was in patients with myocardial infraction and angina. The result concluded that the majority of the condition occurs in the December for 2016 and 2017 while in May 2018 and 2019.

Keywords: Cardiac arrhythmia, CCU, Patients

INTRODUCTION

Each person has a unique typical heartbeat rhythm. Some are more swift than others, or vice versa. The heart typically beats 60 to 80 times per minute. The heart may beat too fast (tachycardia, more than 100 beats per minute), too slowly (bradycardia, more than 60 beats per minute), or incoherently (arrhythmia) (fibrillation)[1]. Heart rhythm disorders called dysrhythmias are brought on by circumstances that interfere with electrical transmission. Different parts of the conduction system, including the sinus node, atrium, atrioventricular (A-V) node, His-Purkinje system, bundle branches, and ventricular tissue, are the genesis of dysrhythmias. Dysrhythmias can be brought on by a variety of illnesses and situations; the two most prevalent are coronary artery disease (CAD) and myocardial infarction (MI). Every age group experiences dysrhythmias, and both healthy and sick hearts experience them[2]. While the exact origin of the majority of dysrhythmias is difficult to pinpoint, the majority are strongly linked to certain diseases, particularly cardiac disease and myocardial infarction (MI): 90% of people who have a MI will experience a dysrhythmia. Heart failure (HF) and cerebrovascular accidents (CVA) are both linked to an increased risk of dysrhythmias that are severe enough to cause sudden

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death (Michael Patrick Adams, 2010). Each year, there are about 40 cases of sudden cardiac death (SCD) per 100,000 people in each Asian nation. When a person experiences a cardiac arrest outside of a hospital, ventricular fibrillation and myocardial infarction are typically to blame[3].

METHODOLOGY

A descriptive study was carried out through the application of quantitative design. It was carried out to describe the statistic of adult patient with arrhythmias and conduction disorder in Kirkuk's city hospitals. The area of study includes Coronary Care Unit (CCU) at Kirkuk's General Hospital and Azadi teaching Hospital in Kirkuk city, Iraq. The study involved a 7700 adult, from the patient records of the hospital, whom admitted in the CCU for treatment and follow upA questionnaire was adopted for the purpose of the study. It consist of:Part 1: Demographic data (3 items). Part 2: Frequency and percentage of each type of Arrhythmias and Conduction disorders (10 type of arrhythmias and conduction disorders). Part 3: Percentage of each type of arrhythmias according to months of the years (2016, 2017, 2018, 2019). Validity of the study questionnaire scale: A panel of (6 experts) were assessed the questionnaire items and their command were taken in consideration. The data were collected from the period of 1st January 2016 till the 31 December 2019. From two governmental hospitals, AL-Azadi teaching hospital and Kirkuk general hospital in Kirkuk city. All data taken from patient records in the CCU which recorded from the first of January 2016 to thirty one of December 2019 The analysis of data was carried out using the application of the descriptive statistical data analysis including: 1-Frequencies (F). 2-Percentage[4-10].

RESULT

Table 1 shows that the higher percentage was 29.5% and 27.3% for the age group (58-67) for 2016-2017 and 2018-2019 respectively with regard to the gender the result shows the male high in all years and cosititute (55.7%), (63.7) for 2016-2017 and 2018-2019 respectively.

Also the result shows the impact of occupation on arrhythmias and conduction disorder, that the higher incidence was 43.1% for the housewife wife for 2016-2017 while Self employed for 2018-2019 and constitute 45.6%.

Table 2 shows the high percentage of of arrhythmias disorders were myocardiac infarction (24.3%) and angina (22.1%) at 2016-2017 years while myocardiac infarction (34.4%) and angina (27.5%) at 2018-2019 years.

Table 3 shows the that the older age was 108 years old in patient with VT (ventricular tachycardia) and the younger age was 18 years in patients with MI and Heart Failure at 2016-2017 while the older age was 108 years old in patient with Heart Failure and the younger age was 20 years in patients with MI at 2018-2019 years.

Table 4 shows the percentage of each type of arrhythmias according to months of the years (2016-2017) (2017-2018), demonstrating that the higher incidence ofarrhythmias and conduction disorders for the years 2016 to 2017 was 10.1% in January and 10.0 % in December while the higher incidence of arrhythmias and conduction disorders for the years 2018 to 2019 was in May and represent (18.2%).

DISCUSSION

Table 1 shows that the higher percentage was 29.5% and 27.3% for the age group (58-67) for 2016-2017 and 2018-2019 respectivly.with regard to the gender the result shows the male high in all years and cosititute (55.7%), (63.7) for 2016-2017 and 2018 -2019 respectively Explnation of this result the cardiovascular diseases are common in older population and is uncommon in young population; though it occurs at younger age. Anversa and colleagues (2013) discuss the early

Table 1: The sample is distributed based on their demographic information

Age group	2016-2017		2018-2019	
	Frequency	Percentage	Frequency	Percentage
(18-27) years	70	1.4%	38	1.4%
(28-37) years	201	4.0%	105	4.00%
(38-47) years	574	11.3%	302	11.5%
(48-57) years	1196	23.6%	576	21.9%
(58-67) years	1499	29.5%	717	27.3%
(68-77) years	1003	19.8%	309	11.7%
(78-87) years	446	8.8%	531	20.2%
(88-97) years	82	1.6%	41	1.5%
(98-107) years	10	1.0%	0	0
Total	5081	100%	2619	100%
Gender				
Male	2829	55.7%	1667	63.7
Female	2252	44.3%	952	36.3
Total	5081	100%	2619	100%
Occupation				
House wife	2192	43.1%	940	35.8%
Self employed	2050	40.3%	1196	45.6%
Govermental employed	485	9.0%	205	7.8%
Student	11	0.2%	13	0.49%
Retirement	286	5.6%	164	6.2
Army group	86	1.7%	101	3.8
Total	5081	100%	2619	100%

Table 2: The percentage of each type of arrhythmias and conduction disorders

No	Types of Arrhythmia	2016-2017		2018-2019	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	Myocardial infraction (MI)	1089	24.3 %	903	34.4
2	Angina	1125	22.1%	722	27.5
3	Ischemia	944	18.6 %	48	1.8
4	Flutter	601	11.8 %	236	9.0
5	Heart Failure (H.F)	559	11.0 %	360	13.7
6	Ventricular Tachycardia (VT)	501	10.0 %	34	1.2
7	Supraventricular tachycardia (SVT)	85	1.7 %	89	3.3
8	Heart Block	61	1.2 %	23	0.87
9	Premature Ventricular Contraction (PVC)	54	1.0 %	28	1.0
10	Fibrilation	53	1.0 %	176	6.7
	Total	5081	100%	2619	100%

Table 3: The younger and older age for the higher percentage of arrhythmias and conduction disorder

Arrhythmias and conduction disorder	2016-2017		2018-2019	
	Younger age	Older age	Younger age	Older age
Myocardial infraction (MI)	18 Y- old	100 Y- old	20 Y- old	102 Y-old
Angina	20 Y- old	102 Y- old	22 Y- old	95 Y- old
Ischemia	21 Y- old	95 Y- old	19 Y- old	100 Y- old
Flutter	19 Y- old	95 Y- old	21 Y- old	102 Y- old
Heart Failure (H.F)	18 Y- old	100 Y- old	25 Y- old	108 Y- old
Ventricular Tachycardia (VT)	19 Y- old	108 Y- old	22 Y- old	99 Y-old

Table 4: Percentage of each type of arrhythmias and conduction disorders according to months of the years (2016, 2017, 2018, 2019)

No	The months of the years (2016, 2017, 2018, 2019)	2016, 2017		2018-2019	
		Frequency (f) of Arrhythmias andconduction disorder	Percentage (%)	Frequency (f) of Arrhythmias andconduction disorder	Percentage (%)
1	January	513	10.1 %	210	16.0
2	February	420	8.3 %	219	16.8
3	March	420	8.3 %	227	17.3
4	April	453	8.9 %	231	17.7
5	May	429	8.4 %	239	18.2
6	June	372	7.3 %	222	16.9
7	July	424	8.4 %	227	17.4
8	August	431	8.5 %	217	16.6
9	September	385	7.6 %	221	16.9
10	October	402	7.9 %	212	16.2
11	November	326	6.4 %	215	16.5
12	December	506	10.0 %	190	13.9
	Total	5081	100 %	2619	100 %

onset of the atherosclerotic process, unhealthy habits, and the multiple ways that aging affects the cardiovascular system, including a change in the ratio of early to late diastolic filling and a decrease in blood vessel compliance through arterial stiffening and thickening. Since the conduction system of the heart is also affected by many of these changes, which may result in conduction or arrhythmias disorder, we find that cardiovascular disease is most prevalent in older people from 2016 to 2019. This is due to cardiac cell enlargement, apoptosis of nearby cells, and subsequent fibro fatty infiltration of the myocardium[11-14]. With regard to the gender the result shows the male high in all years and cosititure (55.7%), (63.7) for 2016-2017 and 2018-2019 respectively. According to Mozaffarian and colleagues (2016) and Di Giosia and colleagues (2017) reports, cardiovascular disease (CVD) is one of the main causes of death worldwide. This conclusion is consistent with what they discovered. Women normally have a lower incidence of CVD than men, but several clinical investigations have demonstrated that after an acute cardiovascular (CV) event, women have a higher death rate and a worse prognosis. The risk of cardiovascular disease in women is usually overstated because of the misconception that they are better "protected" than men against CVD. Women who disregard their cardiovascular disease will receive less intensive care[15,16]. Also the result shows the impact of occupation on arrhythmias and conduction disorder, that the higher incidence was 43.1% for the housewife wife for 2016-2017 while self employed for 2018-2019 and constitute 45.6%. We can say this appear in the category of housewife women due to many factors such as Sedentary lifestyles, stressful work conditions and compromised diet… etc. Women are less fortunate than men in many ways, and they typically experience worse health and more distress[17,18]. Our findings are in line with a 2016 study by Gielnik and colleagues, which found that workplace stress has a negative

impact on overall health and wellbeing and may raise the incidence of diseases like depression and cardiovascular issues, as well as the use of medical services, mortality, and time away from work due to illness. Stress is linked to unhealthy habits like drinking and smoking, which can be harmful to one's health. The topic of whether self-employment has a beneficial or negative impact on health is one of public policy that can only be fully answered through empirical evidence given these two opposing forces, more work demand and higher job control[19,20]. Table 2 shows the high percentage of of arrhythmias disorders were myocrdiac infarction (24.3%) and angina (22.1%) at 2016-2017 years while myocardiac infarction (34.4%) and angina (27.5%) at 2018-2019 years. It has been suggested that this outcome can be explained by the fact that members of our community experience a variety of distressing circumstances and difficult life events, including unemployment, depression, anxiety, low socioeconomic status, a lack of social support, social isolation, and ongoing work stress. Initially, these characteristics were thought to indirectly worsen CVD by influencing the conventional risk factors[21]. Table 3 shows the that the older age was 108 years old in patient with VT (ventricular tachycardia) and the younger age was 18 years in patients with MI and heart failure at 2016-2017 while the older age was 108 years old in patient with Heart Failure and the younger age was 20 years in patients with MI at 2018 -2019 years. Increased mortality, morbidity and frailty in those who have CVD are directly tied to its burden, which also translates to considerable overall healthcare expenses[22,23]. The results of the study are in line with those of Benjamin and colleagues' (2019) investigation, which discovered that age is a significant independent risk factor for CVD due to its association with an increased risk of developing a number of other cardiac risk factors, including obesity and diabetes. Older people have a substantially higher frequency of the majority of CVDs than the general population. According to the American Heart Association, between 2013 and 2017, high blood pressure, or hypertension, was diagnosed in 77.8% of females and 70.8% of males aged 65 to 74. Diagnosed hypertension rates skyrocketed to 85.6% for women and 80.0% for males over 75 years old[24-26]. Table 4 shows the percentage of each type of arrhythmias according to months of the years (2016-2017) (2017-2018), demonstrating that the higher incidence ofarrhythmias and conduction disorders for the years 2016 to 2017 was 10.1% in January and 10.0 % in December while the higher incidence of arrhythmias andconduction disorders for the years 2018 to 2019 was in May and represent (18.2%).

CONCLUSIONS

The retrospective study that demonstrate the higher percentage between age (58-67) years old. And demonstrate that the prevalence of male is more than the female. Also demonstrate the greater incidence was in patients with myocardial infraction and angina. The result concluded that the majority of the condition occurs in the December for 2016 and 2017 while in May 2018 and 2019.

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