Al-Azhar Med. J. .(cardiology) *Vol. 52 (1), January, 2023, 2023, 331-344*
DOI: 10.21608/amj.2023.276358
https://amj.journals.ekb.eg/article_276358.html

IMPACT OF SACUBITRIL/VALSARTAN COMBINATION ON PREVALENCE OF ARRHYTHMIA IN HEART FAILURE PATIENTS WITH REDUCED EJECTION FRACTION

By

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ABSTRACT

Background: In the PARADIGM-HF trial, Heart failure with reduced ejection fraction (HFrEF) patients on (sacubitril/valsartan) had a substantially lower rate of hospitalization for HF and mortality compared to Enalapril. Only very few data exist regarding the impact of sacubitril/valsartan on arrhythmia in those patients.

Objective: To assess the effect of Sacubitril/Valsartan combination on prevalence of arrhythmias in HFrEF patients and compare it with patients on Angiotensin converting enzyme inhibitor (ACEI) or Angiotensin receptors blockers (ARBs).

Patients and Methods: Sixty patients with heart failure with reduced ejection fraction were classified into: Group A on Sacubitril\Valsartan combination therapy, and group B on ACEI or ARBs for at least 3 months with follow up as regard the burden of arrhythmia by 48 hours holter monitoring at 3 and 6 months.

Results: There was no significant difference in both groups as regard demographic and medical data Group A was characterized by significant decrease in ventricular ectopics and significant improvement in ejection fraction (EF), Left ventricular internal dimension (lVIDd) and right ventricular systolic pressure (RVSP) (p=0.00) in comparison to group B.

Conclusion: Sacubitril/Valsartan combination therapy was superior to ACEIs or ARBs in reducing ventricular ectiopic as a mechanism for preventing of sudden cardic death (SCD).

Keywords: HFrEF, ACEI, ARBs-SCD, Left atrium, LVIDd, RVSP.

INTRODUCTION

The treatment of chronic heart failure with reduced LVEF (HFrEF) using angiotensin- converting enzyme (ACEI) inhibitors is well established, with angiotensin receptor blockers (ARBs) as a safe and proven alternative (Europian society of cardiology guidelines 2012& 2016). New therapeutic class of agents acting on the renin angiotensin aldosterone system (RAAS) and neutral endopeptidase system has been developed, known as angiotensin receptor neprilysin inhibitors (ARNI) *(McMurray et al., 2014)*. In the PARADIGM-HF trial, HFrEF patients on (sacubitril/valsartan) had a substantially lower rate of hospitalization for HF and mortality compared to Enalapril *(King et al., 2015)*.

A subanalysis of the PARADIGM-HF trial also showed a reduction in sudden

cardiac death by 20% in relation to Enalapril, which does not differ among patients with or without an implantable cardioverter defibrillator (ICD) *(Mangiafico and Costello-Boerrigter 2013)*. Several potential mechanisms have been linked to this antiarrhythmic effect. Whether this reduction is caused by reverse remodeling, the reduction in myocardial fibrosis, wall stretch or sympathetic nervous system activation is not fully understood *(de Diego and Gonzalez-Torres 2018* and *Martens and Nuyens, 2019)*.

The authors in this study assess the effect of valsartan \ sacubitril combination on incidence of arrhythmias in HFrEF patients in comparison to patients on ACEI or ARBs only.

Study population: This study was conducted at Ain Shams university and Nasr city insurance hospitals including 60 patients with heart failure patients with reduced ejection fraction less than 40% either ischemic (proved by history, metabolic imaging or coronary angiography) or dilated. This was on either Sacubitril\Valsartan combination therapy or on ACEI or ARBs for at least 3 months. Patients with renal impairment, hyperkalemia, pace maker or CRT were excluded.

Ethics approval and informed consent:

The study protocol was approved by Ain Shams Faculty of Medicine scientific and ethical committee. Data confidentiality and privacy were maintained. All patients were informed about the registry and written consent were taken.

PATIENTS AND METHODS

This was an observational prospective study with random sampling of patients with collection of full data including medical histoty, ECG, echocardiography and laboratory data. Follow up the patients at 3, 6 months after initiation of Valsartan\ Sacubitril combination therapy, or ACEIs (ARBs) at maximum tolerated dose by up titration of the dose according to the tolerance of patients after assessment of blood pressure and also guided by blood investigations including serum creatinine and potassium level. The follow up included the medical status, compliance, ECG, echocardiography, laboratory investigation and holter monitoring.

Statistical analysis: Using computer software statistical package for the social sciences (SPSS, version 20, SPSS Inc., Chicago, Illinois, USA) Description of quantitative (numerical) variables was performed in the form of mean ± SD. Description of qualitative (categorical) data was performed in the form of number of cases and percent. Appropriate test of associations was performed using Chi-square test, Paired t-test, Wilcoxon signed-rank test, repeated measure ANOVA test and Friedman test the significance level was set at p-value of less than 0.05.

RESULTS

The number of samples that fulfilled the inclusion and exclusion criteria in this study were 60 patients that were classified into 2 groups: 30 patients on Sacubitril\Valsartan combination therapy (group A), and 30 patients on ACEIs or ARBs (group B).

There was no significant difference in demographic and clinical data of both groups **(Table 1)**.

Table (1): Demographic and clinical data of patients

Parameters		Group A No. = 30		Group B No. = 30		P-value
Age	Mean ± SD	58.23 ± 4.80		56.37 ± 4.49		0.125
	Range	48 – 65		49 – 64		
Gender	Female	8 (26.7%)		6 (20.0%)		0.542
	Male	22 (73.3%)		24 (80.0%)		
		No	**%**	**No.**	**%**	
HTN	No	5	16.7%	5	16.7%	1.000
	Yes	25	83.3%	25	83.3%	
Controlled	No	1	4.0%	3	12.5%	0.277
	Yes	24	96.0%	21	87.5%	
DM	No	15	50.0%	11	36.7%	0.297
	Yes	15	50.0%	19	63.3%	
Controlled	No	4	26.7%	10	52.6%	0.127
	Yes	11	73.3%	9	47.4%	
Smoker	No	9	30.0%	9	30.0%	1.000
	Yes	21	70.0%	21	70.0%	
IHD	No	4	13.3%	3	10.0%	0.688
	Yes	26	86.7%	27	90.0%	
Alcoholic	No	30	100.0%	30	100.0%	NA
VHD	No	27	90.0%	28	93.3%	0.640
	Yes	3	10.0%	2	6.7%	
CKD	No	29	96.7%	26	86.7%	0.161
	Yes	1	3.3%	4	13.3%	
CV.disease	No	30	100.0%	30	100.0%	NA
Dyslipidemia	No	7	23.3%	12	40.0%	0.165
	Yes	23	76.7%	18	60.0%	
FH (IHD/SCD)	No	10	33.3%	15	50.0%	0.190
	Yes	20	66.7%	15	50.0%	
NYHA class	NYHA I	0	0.0%	1	3.3%	0.589
	NYHA II	21	70.0%	21	70.0%	
	NYHA III	9	30.0%	8	26.7%	
	NYHA IV	0	0	0	0	
Prior MI	No	6	20.0%	4	13.3%	0.488
	Yes	24	80.0%	26	86.7%	
Prior PCI	No	10	33.3%	6	20.0%	0.243
	Yes	20	66.7%	24	80.0%	
Prior CABG	No	22	73.3%	27	90.0%	0.095
	Yes	8	26.7%	3	10.0%	
Cardiomyopathy	Non-ICM	4	13.3%	3	10.0%	0.687
	ICM	26	86.7%	27	90.0%	

Through six months of follow up, Group A was characterized by non-significant reduction in QRS width and non-significant shortening in QTc while Group B was associated with non-significant increasing QTc values through the follow up period **(Tables 2 & 3)**.

Table (2): ECG changes in group A through the follow up period

Parameters \ Group A		Initial No. = 30	3 months No. = 30	6 months No. = 30	P-value
HR	Mean ± SD	75.60 ± 8.51	73.17 ± 6.75	72.57 ± 7.20	0.168
	Range	63 – 100	65 – 90	60 – 96	
Rhythm	AF	5 (16.7%)	7 (23.3%)	7 (23.3%)	0.766
	Sinus	25 (83.3%)	23 (76.7%)	23 (76.7%)	
PR interval	Mean ± SD	125.60 ± 19.81	129.57 ± 31.98	127.39 ± 27.67	0.623
	Range	100 – 160	80 – 240	80 – 220	
QRS width	Mean ± SD	111.00 ± 19.18	109.67 ± 17.12	109.66 ± 17.21	0.416
	Range	80 – 160	80 – 130	80 – 130	
QTc	Mean ± SD	425.20 ± 26.94	425.70 ± 27.06	424.27 ± 22.16	0.774
	Range	382 – 480	382 – 477	382 – 453	
T wave morphology	Inverted t	23 (76.7%)	24 (80.0%)	23 (76.7%)	0.938
	Bihasic t	9 (30.0%)	6 (20.0%)	7 (23.3%)	0.656
	Flat t	4 (13.3%)	6 (20.0%)	5 (16.7%)	0.787
	Norml T	2 (6.7%)	2 (6.7%)	2 (6.7%)	1.000
PVCs	No	27 (90.0%)	26 (86.7%)	28 (93.3%)	0.690
	Yes	3 (10.0%)	4 (13.3%)	2 (6.7%)	

Table (3): ECG changes in group B through the follow up period

Parameters \ Group B		Initial No. = 30	3 months No. = 30	6 months No. = 29	P-value
HR	Mean ± SD	72.50 ± 6.68	72.27 ± 6.76	71.38 ± 6.33	0.712
	Range	60 – 85	55 – 90	65 – 95	
Rhythm	AF	3 (10.0%)	5 (16.7%)	8 (27.6%)	0.207
	Sinus	27 (90.0%)	25 (83.3%)	21 (72.4%)	
PR interval	Mean ± SD	137.41±18.73	134.40 ± 19.38	134.29 ± 17.77	0.251
	Range	120 – 180	100 – 180	120 – 180	
QRS width	Mean ± SD	118.17 ± 12.21	120.17 ± 11.48	119.66 ± 12.39	0.087
	Range	100 – 140	100 – 140	100 – 140	
QTc	Mean ± SD	418.37 ± 22.18	419.43 ± 23.85	419.21 ± 23.00	0.738
	Range	384 – 463	369 – 462	381 – 464	
T wave morphology	Inverted t	26 (86.7%)	26 (86.7%)	24 (80.0%)	0.887
	Bihasic t	3 (10.0%)	2 (6.7%)	2 (6.7%)	0.867
	Flat t	2 (6.7%)	2 (6.7%)	2 (6.7%)	1.000
	Norml T	4 (13.3%)	4 (13.3%)	4 (13.3%)	1.000
PVCs	No	25 (83.3%)	23 (79.3%)	24 (82.8%)	0.911

Through six months of follow up, group A show significant improvement in EF (P= <0.001), RVSP (P= <0.001) and SWMA (P=0.005) with maximal improvement after 6 months While LA diameter increased after 3 month then declined again after the 6 month (p=0.02) while in group B Mean left atrium diameter was found to be increasing through the follow up period with highest values after six months. And RVSP was found to be improving through the follow up period with lowest values after six months **(Tables 4, 5, 6 & 7)**.

Table (4): Echocardiography changes in group A through the follow up period

Parameters \ Group A		Initial No. = 30	3 months No. = 30	6 months No. = 30	P-value
EF	Mean ± SD	29.77 ± 4.09	31.57 ± 4.49	33.83 ± 4.83	<0.001
	Range	22 – 38	22 – 40	24 – 45	
LA	Mean ± SD	4.67 ± 0.53	4.82 ± 0.55	4.75 ± 0.50	0.029
	Range	3.95.8	4.1 – 5.9	4 – 5.7	
LVIDd	Mean ± SD	6.11 ± 0.48	6.01 ± 0.57	6.05 ± 0.56	0.068
	Range	5.57.3	4.8 – 7.2	5.3 – 7.5	
LVIDs	Mean ± SD	4.61 ± 0.57	4.61 ± 0.49	4.64 ± 0.47	0.868
	Range	3.35.8	3.3 – 5.9	3.3 – 5.7	
RVSP	Mean ± SD	47.40 ± 10.21	42.27 ± 7.53	39.73 ± 7.05	<0.001
	Range	25 – 65	28 – 60	25 – 55	
SWMA	Median (IQR)	7 (3 – 7)	3 (2 –7)	3 (2 –7)	0.005
	Range	2 – 7	2 –7	2 – 7	
MR	Mild	13 (43.3%)	13 (43.3%)	16 (53.3%)	0.605
	Moderate	16 (53.3%)	17 (56.7%)	14 (46.7%)	
	Trivial	1 (3.3%)	0 (0.0%)	0 (0.0%)	
TR	Mild	5 (16.7%)	7 (23.3%)	8 (26.7%)	0.173
	Moderate	15 (50.0%)	18 (60.0%)	20 (66.7%)	
	Severe	8 (26.7%)	5 (16.7%)	2 (6.7%)	
	Moderate to severe	2 (6.7%)	0 (0.0%)	0 (0.0%)	

Table (5):Post Hoc analysis of significant echocardiography changes in group A through the follow up period

Post Hoc analysis \ Periods	Initial Vs 3 months	Initial Vs 6 months	3 months Vs 6 months
EF	0.001	0.000	0.005
LA	0.028	0.084	0.081
RVSP	0.001	0.000	0.001
SWMA	0.014	0.010	0.085

Table (6): Echocardiography changes in group B through the follow up period

Parameters \ Group B		Initial No. = 30	3 months No. = 30	6 months No. = 29	P-value
EF	Mean ± SD	32.43 ± 4.58	33.10 ± 4.68	32.72 ± 5.71	0.338
	Range	22 – 40	24 – 40	22 – 45	
LA	Mean ± SD	4.39 ± 0.44	4.40 ± 0.39	4.48 ± 0.36	0.026
	Range	3.7 – 5.7	3.8 – 5.6	3.9 – 5.5	
LVIDd	Mean ± SD	6.34 ± 0.44	6.31 ± 0.47	6.32 ± 0.51	0.548
	Range	5.5 – 7.4	5.5 – 7.2	5.4 – 7.5	
LVIDs	Mean ± SD	4.57 ± 0.69	4.55 ± 0.60	4.50 ± 0.50	0.670
	Range	3.9 – 6.9	3.7 – 6.3	3.8 – 6.1	
RVSP	Mean ± SD	45.63 ± 9.89	41.97 ± 9.00	40.79 ± 8.55	0.000 *
	Range	30 – 65	25 – 60	25 – 60	
SWMA	Median (IQR)	7 (2 –7)	5 (2 –7)	3 (2 –7)	0.076
	Range	1 –7	1 –7	1 –7	
MR	No	0 (0.0%)	0 (0.0%)	1 (3.4%)	0.579
	Mild	13 (43.3%)	11 (36.7%)	9 (31.0%)	
	Moderate	17 (56.7%)	19 (63.3%)	19 (65.5%)	
TR	Mild	5 (16.7%)	6 (20.0%)	6 (20.7%)	0.949
	Moderate	16 (53.3%)	13 (43.3%)	13 (44.8%)	
	Severe	9 (30.0%)	11 (36.7%)	10 (34.5%)	

Table (7): Post Hoc analysis of significant echocardiography changes in group B through the follow up period

Post Hoc analysis \ periods	Initial Vs 3 months	Initial Vs 6 months	3 months Vs 6 months
LA	**0.672**	**0.017**	**0.015**
RVSP	**0.001**	**0.001**	**0.232**

There was no significant difference through the follow up period in group A populations regarding serum creatinine and potassium level while significant elevation in serum creatinine in group B (p=0.001) **(Tables 8, 9 &10)**.

Table (8): Kidney function and serum potassium changes in group A and B through the follow up period

Parameters \ Group A		Initial No. = 30	3 month No. = 30	6 month No. = 30	P-value
Serum cr.	Median (IQR)	1.1 (0.9 – 1.3)	1.15 (0.8 – 1.3)	1 (0.8 – 1.1)	0.672
	Range	0.5 – 1.6	0.5 – 1.7	0.5 – 1.6	
Serum K	Mean ± SD	4.43 ± 0.56	4.38 ± 0.54	4.28 ± 0.41	0.234
	Range	3.3 – 5.3	3.3 – 5.2	3.5 – 5	

Table (9): Kidney function and serum potassium changes in group B through the follow up period

Group B / parameters		Initial No. = 30	3 month No. = 29	6 month No. = 29	P-value
Serum cr	Median (IQR)	1.3 (1 − 1.6)	1.4 (1.1 – 1.7)	1.5 (1.2 – 1.8)	0.001
	Range	0.8 – 2.2	0.9 – 2.4	0.9 – 2.5	
Serum K	Mean ± SD	4.35 ± 0.45	4.29 ± 0.46	4.33 ± 0.40	0.457
	Range	3.2 – 5.1	3.2 – 5.1	3.7 – 5.1	

Table (10): Post Hoc analysis of significant kidney function in group B through the follow up period

Periods / Post Hoc analysis	Initial Vs 3 months	Initial Vs 6 months	3 months Vs 6 months
Serum cr	**0.008**	**0.002**	**0.056**

There was no significant difference through the follow up period in group A populations regarding clinical data while one mortality was in group B **(tables 11& 12)**.

Table (11): Clinical data of group A through the follow up period

Group A / Parameters	Clinical data after 3 months	Clinical data after 6 months	P-value
Hospitalization and decompensation	1 (3.3%)	1 (3.3%)	1.000
SCD	0 (0.0%)	0 (0.0%)	–

Table (12): Clinical data of group B through the follow up period

Group B / Parameters	Clinical data after 3 months	Clinical data after 6 months	P-value
Hospitalization and decompensation	3 (10.3%)	4 (13.8%)	0.687
SCD	0 (0.0%)	1 (3.4%)	0.313

Burden of ventricular ectopics was found to be significantly lowered (p=0.01) through the follow up period with lower incidence and percentage after six months of drug use **(Tables 13& 14)**.

Table (13): Holter study changes through the follow up period in group A

Parameters / Group A		3 months No. = 30	6 months No. = 30	P-value
Ventricular ectopics	Median (IQR)	2511 (823 – 6312)	2022 (416 – 4216)	0.012
	Range	19 – 16422	10 – 18411	
Percentage	Median (IQR)	2.1 (0.4 – 3.1)	1.09 (0.06 – 2.93)	0.013
	Range	0.01 – 12	0 – 175	
Bigemini	Median (IQR)	126.5 (24 – 584)	82 (3 – 778)	0.674
	Range	1 – 10366	1 – 861	
Trigemini	Median (IQR)	67 (18 – 1011)	53 (2 – 522)	0.062
	Range	1 – 4232	1 – 2206	
Couplets	Median (IQR)	3 (2 – 35)	7 (2.5 – 83)	0.753
	Range	1 – 428	2 – 420	
Triplets	Median (IQR)	3 (1 – 30)	21 (1 – 410)	0.180
	Range	1 – 613	1 – 410	
Runs of nsvt	Median (IQR)	4 (1 – 12)	4 (3 – 10)	0.279
	Range	1 – 24	1 – 26	

Table (14): Holter study changes through the follow up period in group B

Parameters / Group B		3 months No. = 29	6 months No. = 29	P-value
ventricular ectopics	Median (IQR)	1221 (689 – 7624)	1878.5 (632.5 – 5237)	
	Range	17 – 34582	201 – 28674	0.891
Percentage	Median (IQR)	0.9 (0.3 – 4.1)	0.9 (0.3 – 4.1)	
	Range	0 – 17	0 – 17	1.000
Bigemini	Median (IQR)	19.5 (9 – 42.5)	19 (3 – 23)	
	Range	2 – 408	1 – 475	0.158
Trigemini	Median (IQR)	17 (6 – 45)	15 (3 – 45)	
	Range	2 – 1203	2 – 1400	0.972
Couplets	Median (IQR)	2 (1 – 13)	2.5 (2 – 7)	
	Range	1 – 25	1 – 31	0.443
Triplets	Median (IQR)	2 (2 – 3)	2 (2 – 13)	
	Range	1 – 4	1 – 14	1.000
Runs of NSVT	Median (IQR)	7 (3 – 14)	5 (3 – 11)	
	Range	1 – 22	1 – 22	0.017

DISCUSSION

In the PARADIGM-HF trial, sudden cardiac death (SCD) more decreased in the sacubitril/valsartan as compared with ACEIs. A further prospective study recruited patients with HFrEF, treated with sacubitril/valsartan, and compared them with the treatment data on ACEI and/or angiotensin receptor blocker (ARBs) *(de Diego and Gonzalez-Torres, 2018)*.

However, published data presented six cases of ventricular arrhythmic storm shortly after initiating sacubitril/valsartan that required drug withdrawal *Vicent et al., (2019).*

No systematic analysis of the incidence of ventricular tachyarrhythmia in patients treated with sacubitril/valsartan in a

sufficient number of patients with long-term follow-up has been conducted yet.

We conducted a prospective observational study on 60 patients with heart failure with reduced ejection fraction, divided into two groups; 30 patients on Sacubitril/Valsartan combination, and 30 patients on ACEIs or ARBs to evaluate the incidence of ventricular arrhythmia in each group by Holter, with follow up of the Electrocardiogram and Echocardiography within 6 months after drug use. To assess to what extent the patient can benefit from medications to reduce hospitalization and prevent SCD. There was no impact of risk factors among our patients on incidence of arrhythmias in both groups. We missed one of our patients in ACEIs group due to sudden cardiac death in home. But in Sacubitril/Valsartan group we did not lose any of our patients. There was no significant difference regarding hospitalization on top of decomposition between both groups.

They have found that the functional capacity of Sacubitril/Valsartan groups was improving through the follow up period by documenting their quality of life and according to NYHA classification of HF. Also there was an antiarrhythmic effect of Sacubitril/Valsartan combination therapy, compared to ACEIs characterized by reduced burden of ventricular ectopics through the follow up period by Holter monitoring. The frequency of ectopics after the first three months was 2511 and became 2022 ectopics after 6 months that represent a significant difference with P value 0.012. These results consistent with the study of *Martens and Nuyens (2019)* that concluded a decrease in the burden of ventricular arrhythmias, as assessed by ICD monitoring.

In contrast, ACEIs groups did not show reduced frequencies of ventricular ectopics through the follow up period and in contrast the ectopics increased from mean 1221 ectopics in the first three months to become 1878.5 ectopics after 6 months of initiations of medications which represents non-significant difference with P value 0.891 and it was consistent with *de Diego and Gonzalez-Torres (2018)* who found that Angiotensin-neprilysin inhibition decreased ventricular arrhythmias and appropriate ICD shocks in HFrEF patients under home monitoring compared to angiotensin inhibition Sacubitril/Valsartan group.

We found non-significant decrease in QTc values which reached the lowest values after 6 months. In contrast ACEIs group was associated with non-significant increase in QTc values through the follow up period to reach the highest values after six months. It was consistent with *Valentim Gonçalves (2019)* who found that QTc interval were significantly reduced by 5.7% in Sacubitril/Valsartan combination therapy in HFrEF. Runs of NSVT in ACEIs group but not in Sacubitril/Valsartan combination decreased during the follow up; it was against the study of *Martens and Nuyens (2019)* that concluded that runs of NSVT are higher in ACEIs than Sacubitril/Valsartan combination.

Ejection fraction was found to be increased in Sacubitril/Valsartan group through the follow up period with high significant difference between its values before drug use and 6 months after

treatment, its initial mean EF was 29.77±4.09% and became 31.57±4.49% after 3 months and reached 33.83±4.83% after 6 months of treatment and it represents highly significant difference, it was consistent with *Bayard and Decosta (2020)* who found that under sacubitril/valsartan, LVEF improvred from 32.6 ± 5 to 36 ± 6% .In contrast in ACEIs group, EF has no significant difference through follow up period.

LA diameter was found to has significant difference in Sacubitril/Valsartan group after six months of drug use and declined after three months to become (4.75±0.50cm) after six months; In ACEIs group, mean LA diameter was significantly increasing from its initial values after 6 months and it was consistent with *Landolfo and Piani (2020)* who found also a significant reduction of LA diameter and RVSP was found to have a significant difference in both groups through the 6 months of follow up with highest values before initiation of the drug and lowest values after 6 months and it was also consistent with *Martens and Nuyens (2019)* who stated that a trend toward reduction in RVSP was noted *Martens et al 2019.*

CONCLUSION

Sacubitril/Valsartan combination therapy was superior to ACEIs in reducing ventricular ectopics and decrease in QTc values which reflects the role of this combination to reduce ventricular arrhythmias.

Ejection fraction in Sacubitril/Valsartan combination group was improving through the follow up period as well as LA dimension, LVID and RVSP which can be explains in reverse remodeling.

Functional capacity in Sacubitril/Valsartan combinations group was improving through follow up period which means this drug reduces hospitalization.

LIMITATIONS

The sample was not large enough and was only conducted on 60 patients. Also assessment of functional capacity was subjective without qualitative assessment method to evaluate our patients.

Conflict of interest statement:

The authors have no conflicts of interest to declare.

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تأثير عقار ساكيوبتريل/فالسارتان علي معدل حدوث الإضطرابات في ضربات القلب في مرضي فشل القلب الناتج عن ضعف كفاءة العضلة

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خلفيـــــة البحـــــث: ان مرضـــــي ضـــــعف القلـــــب الـــــذين يتنـــــاولون عقـــــار ساكيوبتريل/فالســـارتان هـــم اقـــل عرضـــه للحاجـــه للحجـــز بالمستشـــفي واقـــل فـــي معـــدل الوفيـــان بالمقارنـــة بعقـــار الاينالابريـــل و لكـــن لا يتـــوفر الكثيـــر مـــن المعلومـــات عـــن تأثيره علي معدل حدوث الإضطرابات في ضربات القلب.

الهـــدف مـــن البحـــث: دراســـه تـــأثير عقـــار ساكيوبتريل/فالســـارتان علـــي معـــدل حـــدوث اضـــطرابات فـــي ضـــربات القلـــب فـــي مرضـــي فشـــل القلـــب النـــاتج عـــن ضـــعف كفـــاءه العضله مع مقارنته بمثبطات انزيم تحويل الانجيوتنسين.

المرضـــي و طـــرق البحـــث: التحـــق بهـــذه الدراســـه ســـتون مريضـــا تـــم تقســـيمهم إلـــي: مجموعـــة تعـــالج بعقـــار ســـاكيوبتريل فالســـارتان والأخـــري بمثبطـــات انـــزيم تحويـــل الأنجيوتنســـين أو مضـــادات الأنجيوتنســـن لمـــده لاتقـــل عـــن 3 شـــهور و يـــتم متـــابعتهم بعـــد ثلاث و ست شهور عن طريق مسجل ضربات القلب لمدة ثمان و أربعين ساعة.

نتـــائج البحـــث: أوضـــحت الدراســـه التـــأثير الهـــام للعقـــار علـــي المجموعـــة الاولـــي وذلـــك فـــي تقصـــير مـــدة QTc وكـــذلك فـــي تقصـــير مـــدة QRS، وتقليـــل معـــدل حـــدوث الضـــربات البطينيـــة و تحســـن كفـــاءة عضـــلة القلـــب و تقليـــل الحجـــم الانبســـاطي للقلـــب و تخفيض ضغط الشريان الرئوي و ذلك بالمقارنة مع المجموعه الأخرى.

الاســـتنتاج: عقـــار ســـاكيوبتريل /فالســـارتان أكثـــر فاعليـــه مـــن مثبطـــات انـــزيم تحويـــل الأنجيوتنســـين. او مضـــادات الأنجيوتنســـن فـــي تقليـــل الضـــربات البطينيـــة و تقصـــير QTc مما يؤدي لمنع الموت المفاجئ.

الكلمـــات الدالـــة: فشـــل القلـــب النـــاتج عـــن ضـــعف كفـــاءة العضـــلة، ســـاكيوبتريل، مثبطـــات انـــزيم تحويـــل الأنجيوتنســـين، مضـــادات الأ نجيوتنســـن، المـــوت المفـــاجئ، الأذيـــن الايسر و ضغط الشريان الرئوي.