



*Research Article*

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**Research rescue function power heart collect belong to failure left equal  
direction france super minus heart Live sick core increase blood pressure  
have thick failure left**

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**Abstract**

*Objective:* The aim of this study was to evaluate the left ventricular systolic function in hypertensive patients with left ventricular hypertrophy.

*Materials and methods:* We studied 112 cases with aged 40-69 years and were divided into two groups: the first group included 74 hypertensive patients, in there 38 hypertensive patients without left ventricular hypertrophy and 36 hypertensive patients with left ventricular hypertrophy; the second group included 38 cases without hypertension and cardiovascular disease (normal control subjects). *Methods:* Prospective, descriptive and compared to normal control subjects.

*Results:* There was no significant difference ( $p > 0.05$ ) between hypertensive group and focus group at age, gender, BMI, BSA and Glycemia. In hypertensive patients group with left ventricular hypertrophy, left ventricular ejection fraction (EF:  $66.43 \pm 6.10\%$ ) and left ventricular shortening fraction (FS:  $36.66 \pm 3.72\%$ ) were lower than normal control subjects (EF:  $69.16 \pm 6.42\%$  and FS:  $38.33 \pm 3.96\%$ ) with significantly difference ( $p < 0.05$ ) and there was no significant difference ( $p > 0.05$ ) with hypertensive patients group without left ventricular hypertrophy (EF:  $68.16 \pm 6.42\%$  và FS:  $37.12 \pm 3.96\%$ )

*Conclusion:* In hypertensive patients with left ventricular hypertrophy, left ventricular ejection fraction (EF) and left ventricular shortening fraction (FS) have impaired compared to normals ( $p < 0.05$ ).

*Key words:* Hypertension, left ventricular systolic function, echocardiography.

**Problem**

Hypertension is a fairly common cardiovascular disease. variable, from long Satisfied return wall termite mandarin heart top of world medicine because of the number of people with high blood pressure day an increase, annually millions people in the world die or are disabled due to increase blood pressure cause should (14) .

Besides studying the function of the heart Echocardiography has been widely used. conducted domestically and internationally, the research Closed echocardiography rescue of systolic function an important role in prognosis as well like thing treatment sick core increase blood pressure (21, 10, 17, 23, 7) That is why we

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conduct this topic. with the following objectives: To study the changes in function left ventricular systolic function by the method echocardiography in primary hypertensive patients release so with People jar often.

## **OBJECT - DIRECTION FRANCE RESEARCH RESCUE**

### **Opposite to statue research rescue**

They I research rescue above 112 opposite to statue, year old from 40-69 year old, Okay divide do 2 group.

Group 1: 74 sick core EXCUSE original release Satisfied Okay diagnosis guess body determined

Group 2: 38 People jar often (group proof).

### **Pepper standard select sick**

#### ***Group sick***

Group sick bag including 74 People sick in there Have 38 male and 36 female.

Sick core Okay diagnosis guess EXCUSE real the in adults over 17 years of age according to WHO/ISH year 2004 (22) .

Criteria for grouping research subjects rescue Based on enter pepper standard thick lost left according to Devereux and according to rule wish belong to festival proposal Penn (8.15) :

LVMI =134g/m<sup>2</sup> opposite to with male.

LVMI =110g/m<sup>2</sup> opposite to with female.

We divided 74 hypertensive patients into two group.

Group EXCUSE Are not thick lost left. Group EXCUSE Have thick lost left.

#### ***Group proof***

We selected 38 patients including 20 males and 18 females, who were non-diabetic patients sick increase blood pressure (those sick core check check strength Strong total shout determine period), blood pressure presently in < 130/85mmHg, Have sick reason Are not image enjoy arrive cardiovascular system, determined by clinical examination screening and performing echocardiography. All subjects Okay select choose like after.

Are not Have money history about heart circuit good To be sick reason other effects on the cardiovascular system. No use those medicine Have image enjoy arrive heart circuit.

Echocardiogram normal results: no with focal movement disorder, no disease organic heart valve, no

pericardial disease heart, Are not Have sick heart innate born.

Select patients have age 40-69 age, male to female ratio is equal to group sick.

### **Pepper standard type apart from**

Patients with secondary hypertension. Those sick core Have sick reason circuit Rim:

they I diagnosis guess type apart from based on enter money history copy normal family, clinically not Have attack angina, normal baseline ECG often, super minus heart Are not Have tangled chaos luck dynamic heart wall. Suspected cases I do electricity heart try strength and yeast heart.

Those sick core Have the sick valve heart real body, sick muscle heart, sick membrane heart, heart disease innate born: type apart from ask for a favor visit examination forest sieve, electricity heart routine and especially echocardiography during screening filter and When research rescue.

Basedow's disease, diabetes, the acute and chronic lung diseases, liver and kidney diseases romantic (fiber) liver, think kidney) and extra female Have pregnancy

The tangled chaos rhythm heart: diagnosis guess based on above forest sieve and electricity heart thing.

Hypertensive patients taking medication thing treat or in progress thing treat then Right stop medicinelittle best 1 week before When thing check Pepper standard Thisto ensure that antihypertensive drugs do not affect affecting left ventricular systolic dysfunction(If Have), and treat number HA belong to sick core at the time thing checkreflect light correct stage paragraph belong to sick.

### **Direction France research rescue**

Prospective descriptive study, with comparison group evidence. Numbers whether be treated reason part soft SPSS.

### **CONCLUDE FRUIT RESEARCH RESCUE**

We conducted research on 112 people, including 74 cases of THA and 38 people jar often, Are not Have the other special about year old, gender, heart rate, BMI, BSA and blood glucose. Results Okay take note receive like after.

### **Characteristic sample research rescue**

*Manure group the opposite to statue research rescue*

**Board 1:** *Manure group according to year old, gender belong to the opposite to statue research rescue.*

Group year old	Group proof	Group EXCUSE	p
40 - 49	12 (31,57%)	23 (31,08%)	> 0,05
50 - 59	12 (31,57%)	24 (32,43%)	> 0,05
60 - 69	14 (36,86%)	27 (36,49%)	> 0,05
Year old central jar	55.10 ± 7.35	55.71 ± 8.07	> 0.05
Male	20 (52.63%)	38 (51.35%)	> 0.05
Female	18 (47.37%)	36 (48.65%)	> 0.05

The stool dad according to gender live group sick EXCUSE take note male ratio is 51.35%, and female ratio is 48.65%. accounting for 48.65%, so the male/female ratio is: 1.05 male/1 female.

LIVE group proof billion rate male/ female occupy 1.1 male/ 1 female, billion rate male and female between group proof and group EXCUSE Okay research rescue Are not Have the other special Have idea meaning system list (p > 0.05).

**Special point shared belong to group increase blood pressure**

*Board 2: Special point shared belong to group increase blood pressure*

Special common point	Number school fit	Ratio (%)	ratep
<b>Thick lost left</b>			
Have	36	48.65%	> 0.05
Are not	38	51.35%	
<b>Time space infected sick</b>			
EXCUSE < 5 year	39	52.70%	> 0.05
EXCUSE < 5 year	35	47.30%	
<b>Obey goalkeeper thing treat</b>			
Frequent	10	13.52%	< 0.05
Are not often through	64	86.48%	
<b>Thinking IT lost left</b>			
Have	3	4.05%	< 0.05
Are not	71	95.95%	

In group EXCUSE Okay research rescue, number Patients with hypertension have a high proportion of left ventricular hypertrophy. 48.65% and hypertensive patients without ventricular hypertrophy left To be 51.35%. Ratio rate sick core EXCUSE from 5 year return go up occupy 52.70%.

Ratio rate sick core Are not obey goalkeeper thing treat EXCUSE occupy billion rate High 86.48%.

Ratio rate patient THA has think function power heart

collect lost left occupy one billion rate small 4.05%.

**So compare special point shared between the opposite to statue research rescue**

***Group proof and group increase blood pressure***

*Board 3: So compare special point shared belong to the opposite to statue research rescue.*

Thông số	Nhóm chứng	Nhóm THA	p
BMI (kg/m <sup>2</sup> )	21,19 ± 0,99	21,36 ± 1,09	> 0,05
BSA (m <sup>2</sup> )	1,55 ± 0,08	1,58 ± 0,09	> 0,05

Information number	Group proof	Group EXCUSE	p
Glucose blood at the time hunger (mmol/l)	4.91 ± 0.26	5.02 ± 0.37	> 0.05
Nhipim (times / minute)	77.05 ± 7.67	78.70 ± 7.87	> 0,05
HATT (mmHg)	112,11 ± 9,35	165,27 ± 16,02	< 0,01
HATTr (mmHg)	70,66 ± 7,64	102,84 ± 8,68	< 0,01
n	38	74	

There is no statistically significant difference (p > 0.05) between the control group and the THA group BMI, BSA, Blood Glucose parameters at the time hungry and rhythm heart.

***Group evidence, THA group not thick lost left and group EXCUSE Have thick lost left***

*Table 4: Comparison of general characteristics of the control group (group 1), group EXCUSE Are not Have thick lost left (group 2) and group EXCUSE Have thick lost left (group 3).*

Information number	Group 1 (n = 38)	Group 2 (n = 38)	Group 3 (n = 36)	General meaning list		
				p		
				1 & 2	1& 3	2 & 3
Year old (year old)	55.10 ± 7.35	55.37 ± 8.01	56.05 ± 8.38	> 0.05	> 0.05	> 0.05
BMI (kg/m <sup>2</sup> )	21.19 ± 0.99	21,56 ± 1,12	21,16 ± 1,02	> 0,05	> 0,05	> 0,05
BSA (m <sup>2</sup> )	1,55 ± 0,08	1,59 ± 0,09	1,57 ± 0,08	> 0,05	> 0,05	> 0,05
Glucose (mmol/l)	4.91 ± 0.26	4.98 ± 0.28	5.06 ± 0.36	> 0.05	> 0.05	> 0.05
N h ip times / minute	77.05 ± 7.67	79,08 ± 7,83	78,31 ± 7,75	> 0,05	> 0,05	> 0,05
HATT (mmHg)	112,11 ± 9,35	157,63 ± 12,76	173,33 ± 15,15	< 0,01	< 0,01	> 0,05
HATTr (mmHg)	70,66 ± 7,64	98,68 ± 7,88	107,22 ± 9,32	< 0,01	< 0,01	> 0,05

There is no statistically significant difference ( $p > 0.05$ ) between group proof with group increase blood pressure without left ventricular hypertrophy, as well as with Hypertensive group with left ventricular hypertrophy in age, BMI, BSA, Glucose blood at the time hungry and rhythm heart.

Between group increase blood pressure Are not thick lost and Hypertensive group with ventricular hypertrophy also did not have statistically significant differences in age, BMI, BSA, Glucose blood at the time hungry and rhythm heart.

There is a statistically significant difference between group proof, group EXCUSE Are not Have thick lost left and Have thick lost left about treat number blood pressure heart collect and heart Truong.

### Special point image state lost left

*Control group and hypertensive group Board 5: Special point about image state lost left live group proof and group EXCUSE.*

**Board 5:** Special point about image state lost left live groupproof and group EXCUSE.

Information number	Group proof	Group EXCUSE	p
IVSd (mm)	8,28 ± 0,81	10,98 ± 1,11	< 0,01
LVDd (mm)	44,51 ± 3,25	45,42 ± 3,62	> 0,05
PWd (mm)	7,98 ± 0,78	8,59 ± 0,90	< 0,05
LVM (g)	146,58 ± 15,10	208,36 ± 20,55	< 0,01
LVMI (g/m <sup>2</sup> )	84,42 ± 8,48	120,18 ± 12,24	< 0,01
n	38	74	

In the THA group, there was a significant increase statistics ( $p < 0.05$ ) on the thickness of the interventricular septum (IVSd), wall after lost left (PWd), block quantity muscleleft ventricular volume (LVM) and heart mass indexlost left (LVMI).

**Group proof, group EXCUSE Are not Have thick lostleft and group EXCUSE Have thick lost left**

**Table 6:** Characteristics of left ventricular morphology in the group (Group 1), group of hypertension without left ventricular hypertrophy (Group 2) and group EXCUSE Have thick lost left (Group 3).

Information number	Group 1 (n = 38)	Group 2 (n = 38)	Group 3 (n = 36)	General meaninglist p		
				1 & 2	1 & 3	2 & 3
IVSd (mm)	8.28 ± 0.81	9.47 ± 0.91	12.57 ± 1.03	< 0,05	< 0,01	< 0,01
LVDd (mm)	44.51 ± 3.25	45.98 ± 3.53	46.93 ± 3.61	> 0,05	> 0,05	> 0,05
PWd (mm)	7.98 ± 0.78	8.41 ± 0.82	8.78 ± 0.86	> 0,05	< 0,05	> 0,05
LVM (g)	146.58 ± 15.10	180.63 ± 8.30	237.64 ± 4.27	< 0,01	< 0,01	< 0,05
LVMI (g/m <sup>2</sup> )	84.42 ± 8.48	104.21 ± 0.94	137.03 ± 3.90	< 0,01	< 0,01	< 0,05

Have the family increase Have idea meaning system list ( $p < 0.05$ )about degree thick wall link lost heart Truong



(IVSd), blockquantity muscle lost left (LVM) and only number block quantity musclelost left (LVMI)

live group EXCUSE Are not Have thick lostleft, also like with group EXCUSE Have thick lost left sowith group proof.

There is no statistically significant difference ( $p > 0.05$ ) between control group and THA group Are not Have thick lost left, also like group EXCUSE Have thick lost left about road glasses heart Truong lost left (LVDD) and posterior wall diastolic diameter lost left (PWd).

Have the family increase Have idea meaning system list ( $p < 0.05$ ) between control group and patient group increased blood pressure (EXCUSE) Have thick lost left about degree thick wall after lost left heart Truong (PWd).

**Position power heart collect lost left**

**Group proof and group increase blood pressure**

Board 7 So compare the information number super minus heart fight price left ventricular systolic function between control and group increase blood pressure

Thông số	Nhóm chứng	Nhóm THA	p
EF (%)	69,16 ± 6,42	67,30 ± 6,33	> 0,05
FS (%)	38,33 ± 3,96	36,90 ± 3,78	> 0,05
MVCF (c/s)	1,27 ± 0,12	1,24 ± 0,10	> 0,05
ET (ms)	309,53 ± 11,91	298,18 ± 10,85	> 0,05
CO (l/p)	4,80 ± 0,43	5,32 ± 0,51	< 0,05
COI (l/p/m <sup>2</sup> )	2,78 ± 0,26	3,07 ± 0,30	< 0,05
SV (ml)	59,87 ± 6,16	64,34 ± 6,87	< 0,05
SVI (ml/m <sup>2</sup> )	34,24 ± 3,30	37,00 ± 3,69	< 0,05
VTI (mm)	167,21 ± 16,78	181,45 ± 18,13	< 0,05
EDV (ml)	87,37 ± 8,70	94,30 ± 9,53	< 0,05
ESV (ml)	26,97 ± 2,81	29,64 ± 2,73	> 0,05
Vaomax (ms)	0,97 ± 0,09	1,07 ± 0,12	> 0,05

Vaomean(ms)	0,68 ± 0,06	0,75 ± 0,07	> 0,05
n	38	74	

There is no statistically significant difference ( $p > 0.05$ ) on the information number super heart beat left ventricular systolic function values such as: fraction send blood (EF), stool rate yes return (FS) and speed degree

withdraw short central jar according to cycle en fiber muscle (MVCF) between group proof and group increase blood pressure

**Control group, hypertensive group without ventricular hypertrophy left and group EXCUSE Have thick lost left**

**Table 8:** Comparison of echocardiographic parameters evaluated function power heart collect lost left between group proof (Group 1), the hypertensive group without left ventricular hypertrophy (Group 2) and group EXCUSE Have thick lost left (Group 3).

Thông số	Nhóm 1 (n = 38)	Nhóm 2 (n = 38)	Nhóm 3 (n = 36)	Ý nghĩa thống kê p		
				1 & 2	1 & 3	2 & 3
	6,42	6,42	6,10	0,05	<b>0,05</b>	0,05
FS (%)	38,33 ± 3,96	37,12 ± 3,96	36,66 ± 3,72	> 0,05	< <b>0,05</b>	> 0,05
MVCF (c/s)	1,27 ± 0,12	1,25 ± 0,12	1,23 ± 0,10	> 0,05	> 0,05	> 0,05
ET (ms)	309,53 ± 11,91	302,13 ± 11,61	294,54 ± 11,45	> 0,05	> 0,05	> 0,05
CO (l/p)	4,80 ± 0,43	5,40 ± 0,54	5,22 ± 0,43	< 0,05	< 0,05	> 0,05
COI (l/p/m <sup>2</sup> )	2,78 ± 0,26	3,14 ± 0,37	2,88 ± 0,26	< 0,05	> 0,05	> 0,05
SV (ml)	59,87 ± 6,16	65,67 ± 7,35	62,87 ± 6,16	> 0,05	> 0,05	> 0,05
SVI	34,24 ±	38,00 ±	36,24 ±	> 0,05	> 0,05	> 0,05

(ml/m <sup>2</sup> )	3,30	4,03	3,30			
VTI (mm)	167,21 ± 16,78	182,56 ± 18,26	179,41 ± 16,78	< 0,05	> 0,05	> 0,05
EDV (ml)	87,37 ± 8,70	92,37 ± 9,20	96,33 ± 9,63	< 0,05	< 0,05	> 0,05
ESV (ml)	26,97 ± 2,81	27,24 ± 2,87	31,33 ± 2,98	> 0,05	< 0,05	> 0,05
Vaomax(ms)	0,97 ± 0,09	1,09 ± 0,10	1,05 ± 0,09	> 0,05	> 0,05	> 0,05
Vaomean(ms)	0,68 ± 0,06	0,78 ± 0,07	0,72 ± 0,07	> 0,05	> 0,05	> 0,05

There was a statistically significant decrease with  $p < 0.05$  in the hypertensive group with left ventricular hypertrophy compared with the group evidence, but no difference with the group EXCUSE Are not Have thick lost left about stool rate send blood lost left (EF) and stool rate yes return lost left (FS).

## TABLE DISCUSSION

### Position power heart collect lost left

#### *The information number super minus heart fight price IT lost left*

Echocardiographic parameters to assess cardiac function left ventricular systolic function in the study of We include: ejection fraction (EF), Fractional shortening (FS), velocity shorten cycle medium microfilament fiber (MVCF), ejection time blood volume (ET), cardiac output (CO), cardiac output index cardiac output (COI), stroke volume (SV), index stroke volume (SVI), velocity integral time of flow through aortic valve owner (VTIAO), body product last heart Truong (EDV), end-systolic volume (ESV), the peak velocity of aortic valve flow (Vaomax) and the average velocity of flow through the valve dynamic circuit owner (Vaomean) (6,12,20).

Doppler echocardiography to assess cardiac function heart collect information via job fight price image form, luck heart rate as well as some indicators of Systolic time. Measurements of diameter left ventricle on echocardiography is still history use often rule to fight price function power heart heart rate despite great advances ranks in the field of technology with the advent of other techniques. The reason why it is still popular prefer there To be calculate easy real presently, section save time space and especially the price is low. The only limitation of this type of ultrasound is less accurate in assessment of systolic function in patients

myocardial ischemia due to cardiac contraction Are not copper form In those school fit This then super minus 2D and 3D sure sure advantage Vietnamese more than (8,20,1) . Our study was conducted on patients hypertensive patients and no other signs selected signs of myocardial ischemia select based on enter forest sieve, ECG and best To be super minus 2D. Thus, the parameters for assessing ventricular contractility left on echocardiography in the study also Okay watch To be standard information use

Carlos A. Roldan compares supply and demand Doppler cardiography as our method used with cardiac catheterization shows close correlation with  $r = 0.84$  ( $p < 0.0001$ ) (10) . Article there proof show that super minus Doppler also To be one direction France give degree believe rely Good to fight price bow quantity heart. Recent recommendations from the American Society of Ultrasound also advise use direction France like they I used to calculate stroke volume as well as bow amount heart and only number heart (15) .

***The information number super minus heart fight price IT lost left above the opposite to statue research rescue***

The data obtained through analysis shows that Are not Have the other special Have idea meaning system list with

$p > 0.05$  between control group and group Hypertension in general on ultrasound parameters left ventricular systolic function assessment such as: ejection fraction (EF) and contraction fraction lost left (FS).

In When there, When they I group sick increase blood pressure wall group EXCUSE Are not Have left ventricular hypertrophy and the hypertensive group with left ventricular hypertrophy echocardiographic parameters to assess function left ventricular systolic: ventricular ejection fraction left ventricular ejection fraction (EF) and left ventricular contraction fraction (FS) have statistically significant reduction with  $p < 0.05$  in the group Hypertensive patients had left ventricular hypertrophy compared with controls. But give see Not yet Have the other special worth tell so with the group of hypertensive patients without ventricular hypertrophy left. This shows that patients with hypertension When Satisfied Have thick lost left then catch head function power heart left ventricular systolic function begins to decline compared with normal subjects. often. Conclude fruit This also soy sauce on one's own like research rescue belong to Christian Wachtell, Jens Rokkedal (25) .

In addition, echocardiographic parameters Other left ventricular systolic function tests such as CO, WATCH, SV, SVI, VTI and EDV even Have the family increase Have Statistical significance ( $p < 0.05$ ) in the general hypertension group so with group proof. Above forest sieve job family increase parameters such as CO, COI, SV, SVI as well as EDV help the teacher medicine body determine Okay body product the patient's existing circulation, thereby can be treated more properly. This also by Richard B. Devereux, Jonathan N. Bella mentioned in the HyperGen study about left ventricular systolic function in hypertensive patients People big

(5).

In the THA group there is no thickening. lost left and group EXCUSE Have thick lost left live disease group EXCUSE, they I note that the statistically significant difference with  $p < 0.05$  about body product end systolic volume (ESV), which is there increase increase body product last Systolic in the hypertensive group has thick lost left. Article This help give they I realized that, for patients with hypertension When Have thick lost left then Satisfied Have the reduce ability power increased ejection fraction (ESV) of the myocardium, although Have the family increase bow quantity heart and only number heart.

One more observation is drawn from the results. collect Okay To be live group sick EXCUSE, umbrella Have good There was a significant increase in left ventricular hypertrophy. statistical significance of cardiac output and index number heart. This shows that when there is high blood pressure pressure that is not treated regularly The ultimate consequence will lead to heart failure in one time space early. Because So problem subject thing treat early, correct and regularly controlled blood pressure fit reason live those sick core increase blood pressure will help sick core avoid Okay those variable proof belong to disease (2.9).

## CONCLUDE DISCUSSION

By echocardiography evaluation left ventricular systolic function in 74 patients hypertensive patients, compared with 38 controls. group proof, they I receive see:

Manure rate send blood lost left ( $66.43 \pm 6.10\%$ ) and left ventricular contraction fraction ( $36.66 \pm 3.72\%$ ) in Hypertensive patients group Left ventricular hypertrophy was reduced compared with the control group. ( $69.16 \pm 6.42\%$  and  $38.33 \pm 3.96\%$ ) has meaning system list with  $p < 0.05$ .

Have the family increase Have idea meaning system list ( $p < 0.05$ ) on some echocardiographic parameters to evaluate cardiac function left ventricular systolic function such as cardiac output (from  $4.80 \pm 0.43$  liters/minute in the control group to  $5.32 \pm 0.51$  liters/minute live group sick Hypertension pressure), only number heart (from  $2.78 \pm 0.26$  liters/minute/m<sup>2</sup> live group proof go up  $3.07 \pm 0.30$  liters/minute/m<sup>2</sup> in the hypertensive group pressure) and body product last heart Truong lost left (from  $87.37 \pm 8.70$  ml live group proof go up  $94.30 \pm 9.53$  ml live group sick increase blood pressure).

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