

A STUDY OF RIGHT VENTRICULAR INFARCTION IN DIABETIC AND NON DIABETIC PATIENTS

A thesis

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By

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Abstract

Background: Interest in recognizing right ventricle infarction non invasively was grown because of therapeutic implication of distinguishing patient with right ventricle dysfunction from those with more usual clinical presentation of left ventricle dysfunction.

A patient with any type of myocardial infarction associated with right ventricle infarction had a higher rate of significant hypotension, bradycardia requiring pacing support and in hospital mortality than those without right ventricle infarction.

The aim of this study is to estimate the incidence of right ventricle infarction among patients with ST elevation myocardial infarction and whether it is differ in those who are diabetic from non diabetics.

Method: the study included 208 patients who attend the coronary care unit of three hospitals Basrah general hospital, Alfaihaa general hospital, Alsadir teaching hospital during one year from third of December 2008 to second of December 2009.

Patients who were admitted to cardiac care unit and diagnosed as having ST elevation myocardial infarction undergo right sided electrocardiography and were divided into two groups those with and without diabetes mellitus and each group were subdivided into three subgroups: anterior, inferior, lateral myocardial infarction.

Those with right ventricle infarction defined as those who showed an ST elevation of more than 1mm in V3R and/ or V4R as soon as possible after admission.

Results: from those who admitted to coronary care unit 78(37.5%) were diabetics and 130(62.5%) were non diabetics,155(74.5%) were males ,53(25.5%) were females , male to female ratio in non diabetic was (5.5:1) , while it is in diabetic (1.3: 1) , 68 (32.7%) of patients who were admitted to coronary care unit had right ventricle infarction.

The most common type of myocardial infarction was the anterior in studied patients , One third of them had right ventricle infarction in both diabetic and non diabetic and there was no significant increase in prevalence of right ventricle infarction in diabetes mellitus but diabetes was associated with significant increase prevalence of right ventricle infarction associated with anterior myocardial infarction and there was no difference in incidence of right ventricle infarction between the two sexes

Conclusion: Right ventricle infarction show no significant increase in diabetic patients, but right ventricle infarction is more frequent in diabetic with anterior myocardial infarction than in non diabetic patients (56.8% Vs43.2%) $P=0.034$.

Introduction:

Right ventricular infarction

Interest in recognizing right ventricular infarction (RVI) noninvasively has grown because of the therapeutic implications of distinguishing patients with right ventricular dysfunction from those with the more usual clinical presentation of left ventricular dysfunction. Patients with right ventricular infarctions associated with inferior infarctions have much higher rates of significant hypotension, bradycardia requiring pacing support, and in-hospital mortality than isolated inferior infarctions.¹

RVI accompany extensive inferiorposterior myocardial infarctions. The occurrence of an inferior left ventricular infarction involving the right ventricle ranges from 14% to 84%, but is typically thought to be about 50%.^{2,3,4}

Chronic lung disease and right ventricular hypertrophy are considered significant risk factors for RVI^{3,4}

Pathophysiology

Although the right and left ventricles differ markedly in size and energy consumption, their cardiac output is equivalent.⁴ The right ventricle functions with about one sixth of the muscle mass and performs one fourth of the work of the left ventricle.⁴

The ability of the right ventricle to pump an equivalent cardiac output by using a quarter of the energy required by the left ventricle is due to the low resistance in pulmonary vasculature. The pulmonary vascular resistance is 10% of the systemic resistance,⁵ The right ventricle is a thin walled structure with low oxygen demands, making extensive irreversible infarction unusual.⁵

The coronary circulation is made up of the right and left main trunk, the latter gives rise to the left anterior descending artery and the left circumflex artery.

The distribution pattern of the coronary arteries is right dominant in approximately 85% of the population. Dominance is defined by the artery that provides the posterior descending artery.⁵ Usually, the right coronary artery provides the posterior descending artery; in persons with this configuration, the system is considered right dominant. However, the left circumflex artery may provide the posterior descending artery (7.5%), in persons with this configuration, the system is considered left dominant.⁵ And the system is considered codominant if the circumflex and right coronary arteries provide the posterior descending artery; (7.5% of the population).⁵

In right-dominant coronary circulation, the right ventricle receives its blood supply from acute marginal and right ventricular branches originating from the right coronary artery. In a left-dominant system, the right ventricle receives its blood supply from the circumflex artery. In codominant circulation, the right coronary artery and the left circumflex artery supply the right ventricle. Occasionally, the left anterior descending artery may supply parts of the right ventricle.⁵

In most of cases the posterior descending branch of the right coronary artery usually supplies the inferior and posterior walls of the right ventricle. The marginal branches of the right coronary artery supply the lateral wall of the right ventricle; the anterior wall of the right ventricle has a dual blood supply: the conus branch of the right coronary artery and the moderator branch artery, which courses from the left anterior descending artery⁶ as shown in picture (1)

Unlike the left ventricle, the right ventricle receives its blood supply during systole and diastole via its rich network of collateral vessels. This physiological situation occurs because the right ventricle is a low pressure chamber.

The right ventricle functions as a thin-walled volume pump that is sensitive to alterations in preload and afterload, especially when contractile function is impaired. Most often, an RVI occurs in concert with an inferior wall myocardial infarction caused by a proximal occlusion of the right coronary artery.^{4,5}

When an occlusion of the right coronary artery occurs, blood flow to the acute marginal and right ventricular branches, which supply the right ventricular free wall, is blocked. If occlusion occurs distal to these marginal branches, RVI does not occur.⁶

Diagnosis

Clinical

Although right ventricular infarction occurs in more than 30% of patients with inferioposterior left ventricular myocardial infarction. Hemodynamically significant right ventricular infarction occurs in less than 10% of these patients.⁷

A right ventricular infarct should be considered in all following condition:

- Acute inferior wall myocardial infarction, especially in the setting of a low cardiac output.
- symptoms consistent with hypotension
- A subtle clue to the presence of hemodynamically significant right ventricular infarction is a marked sensitivity to preload-reducing agents such as nitrates, morphine, or diuretics.⁸

- Other presentations include high-grade atrioventricular block, tricuspid regurgitation, cardiogenic shock, right ventricular free wall rupture, and cardiac tamponade.
- patient with right ventricular infarction experience unexplained hypoxia despite administration of 100% oxygen, right-to-left shunting at the atrial level in the presence of right ventricular failure and increased right atrial pressure must be considered.^{9,10}

Examination

- The classic clinical triad of right ventricular infarction includes distended neck veins, clear lung fields, and hypotension However, this triad has a sensitivity of less than 25 percent.¹¹
- Infrequent clinical manifestations include right ventricular third and fourth heart sounds, which are typically audible at the left lower sternal border and increase with inspiration.
- Prominent y descent of the right atrial pressure
- Increase in venous or right atrial pressure with inspiration (ie, Kussmaul sign)
- Exaggeration of the normal inspiratory decline in systemic arterial pressure (ie, pulsus paradoxus)

Investigation

Electrocardiography

- All patients with inferior wall myocardial infarction should have a right-sided ECG. ST-segment elevation in lead V4R is the single most powerful predictor of right ventricular involvement, identifying a high-risk subset of patients in the setting of inferior

wall myocardial infarction. The ST-segment elevation is transient, disappearing in less than 10 hours following its onset in half of patients.¹²

- The following table demonstrates the sensitivity and specificity of more than 1 mm of ST-segment elevation in V₁, V₃ R, and V₄ R:¹¹

• Leads	• Sensitivity (%)	• Specificity (%)
• V ₁	• 28	• 92
• V ₃ R	• 69	• 97
• V ₄ R	• 93	• 95

Echocardiography

- Is useful as a modality to rule out pericardial disease and tamponade, which are the major differential diagnoses in the setting of a right ventricular infarction.
- Right ventricular dilatation, abnormal right ventricular wall motion, paradoxical motion of the interventricular septum and tricuspid regurgitation are echocardiographic features of right ventricular infarction.
- Echocardiogram has an 82% sensitivity and 93% specificity in detecting right ventricular infarction.¹³
- Another echocardiographically obtained value that can aid in diagnosis of right ventricular infarction is the myocardial performance index (MPI). MPI is derived from the sum of the isovolumic relaxation and contraction time (relaxation of left ventricle without any increase in left ventricle volume during the interval between closure of aortic valve (A₂) and opening of the

mitral valve and is usually 48-65ms) divided by the ejection fraction. An abnormally elevated MPI of ≥ 0.30 suggests the presence of a right ventricular infarction.¹⁴

DIABETES MELLITUS

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM exist and are caused by a complex interaction of genetics and environmental factors. Depending on the etiology of the DM, factors contributing to hyperglycemia include reduced insulin secretion, decreased glucose utilization, and increased glucose production.¹⁵

Diagnosis

The diagnosis of diabetes must always be established by a blood glucose measurement made in an accredited laboratory.

WHO criteria for the diagnosis of diabetes:

1. Symptoms of diabetes plus casual venous *plasma* glucose ≥ 11.1 mmol/l. Casual is defined as any time of day without regard to time since last meal. The classic symptoms of diabetes include polyuria, polydipsia, and unexplained weight loss.
2. Fasting *plasma* glucose ≥ 7.0 mmol/l or. Fasting is defined as no calorie intake for at least 8 hours.
3. 2 hour *plasma* glucose ≥ 11.1 mmol/l during oral glucose tolerance test using 75 g glucose load.

In the absence of symptoms, these criteria should be confirmed by repeat testing on a different day. If the fasting or random values are not diagnostic, the 2 hour value post-glucose load should be used.¹⁶

Prevalence of coronary heart diseases in diabetes mellitus

People with diabetes have an increased prevalence of atherosclerosis and coronary heart disease (CHD) (16% increased risk of MI for every 1% increase in HbA1c)¹⁶ and experience higher morbidity and mortality after acute coronary syndrome and myocardial infarction (MI) than people without diabetes.

Analysis of data collected for the Organization to Assess Strategies for Ischemic Syndromes (OASIS) Registry, showed that diabetes significantly increased all-cause death and the incidence of new MI, stroke, and heart failure during a 2-year mean follow-up in patients who were hospitalized for unstable angina or non-Q-wave MI.¹⁷

A similar study of patients hospitalized with a confirmed MI, found that diabetes was associated with an adjusted hazard ratio for mortality of 1.7 compared with patients without diabetes and no previous MI.¹⁸

Diabetes also appears to be a major cause of the higher rate of both short- and long-term mortality observed in women hospitalized with acute MI compared to men.

In the past, at least part of the increased cardiovascular risk associated with diabetes resulted from a failure to apply standard clinical measures known to improve outcome following cardiovascular events in patients without diabetes. For example, patients with diabetes were frequently denied beta blockers post-MI because of concern that use of these drugs could mask hypoglycemia and compromise glycemic control. Recent evidence suggests that MI patients with diabetes may actually have a better response to standard treatments than patients without diabetes.¹⁹

Traditional CHD risk factors such as hypertension, dyslipidemia, and excess weight and obesity cluster in patients with impaired glucose tolerance or diabetes, but this clustering cannot account for all of the increased risk in these patients.

In addition to the traditional risk factors associated with CHD and heart failure, a number of diabetes-specific risk factors contribute to the increased morbidity and mortality of CHD. For example, patients with diabetes have lipid-rich atherosclerotic plaque that is more vulnerable to rupture than plaque found in patients without diabetes.^{20, 21}

Analysis of carotid plaques taken from diabetic patients undergoing endarterectomy indicates that they contain more inflammatory cell types and inflammatory markers and have higher lipid content than plaques from nondiabetic patients.

This enhanced vascular inflammatory reaction may result from overexpression of receptor for advanced glycation end products (RAGE), which correlates linearly with hemoglobin A1c (HbA1c levels).²²

RAGE can enhance matrix metalloproteinase activity that can destabilize plaques.

Additionally, platelets obtained from patients with diabetes exhibit enhanced aggregation and increased expression of activation-dependent adhesion molecules, such as glycoprotein (GP) IIb/IIIa and CD40 ligand, factors which contribute to thrombus formation.^{23, 24}

Changes in vascular function may also contribute to the poorer outcomes in diabetes. No reflow following successful percutaneous recanalization of an infarct-related coronary artery occurs more commonly in the presence of diabetes and/or hyperglycemia and may contribute to left ventricular dysfunction. No reflow in this circumstance probably results from platelet-endothelial cell interactions that impair microvascular function and decrease myocardial blood flow. Patients with

diabetes have increased levels of plasminogen activator inhibitor type 1 (PAI-1) in plasma and in atheromas.^{25, 26} Elevated tissue PAI-1 could decrease fibrinolysis, increase thrombus formation, and accelerate plaque formation. Other vascular changes, including increased endothelin activity and reduced prostacyclin and nitric oxide activity, lead to abnormal control of blood flow.^{27, 28}

Aims of study:

1. The aim of study is to estimate the incidence of right ventricle infarction among patients with acute myocardial infarction.
2. To compare the incidence of right ventricle infarction in diabetic and non diabetic patients.
3. To compare the association of right ventricle infarction with different sites of myocardial infarction (anterior Vs inferior) in diabetic and non diabetic patients.

Patients and Method

A case control study to estimate the incidence of right ventricle infarction in diabetic and non diabetic patients.

A total of 208 patients 155 (74.5%) males with age range 24-90 years with mean (57.08±12.9), and 53 (25.5%) females with age range 40-90 years with mean (65.69±9.85) were included in one year study conducted from 3rd of December 2008 to 2nd December 2009 in Basrah general hospital, Alfaihaa general hospital and Alsadir teaching hospital.

Inclusion criteria:

Patients who were included in this study those who admitted to the cardiac care unit of Basrah general hospital , Alfaihaa general hospital

and Alsadir teaching hospital and diagnosed as ST segment elevation infarction according to European Society of Cardiology and American college of cardiology which include any of the following criteria that satisfy diagnosis of acute , evolving or recent myocardial infarction:

Typical raise and gradual fall (troponin) or more rapid raise and rapid fall (creatine kinase –MB) of biochemical marker of myocardial necrosis , with at least one of the following :

- 1 – Ischemic symptoms
- 2 – Development of pathological Q wave on electrocardiogram
- 3 – Electrocardiogram changes indicative of myocardial ischemia (ST – segment elevation) .²⁹

A Patient diagnosed as having diabetes mellitus if he was known to be diabetic previously and he is on anti-diabetic drug or newly diagnosed diabetic according to WHO criteria for the diagnosis of diabetes mellitus.¹⁶

Any patient who was admitted to CCU with anterior or inferior STEMI was submitted to 15 leads ECG [The stander 12 leads ECG and three right sided ECG (V1, V3R, V4R)] even without clinical evidence of right ventricle infarction after admission as soon as possible as in picture (2).

And any patient had ST elevation more than (1 mm) in lead V3R and or lead V4R labeled as having right ventricle infarction (picture -3).¹¹

While patients with ST segment elevation in V1 – V6 had Anterior AMI, And patients with ST segment elevation in I, aVL, V5, V6 had Lateral AMI, and patients with ST segment elevation in II, III, aVF had Inferior AMI.

Statistics:

All data were analyzed by SPSS 15.0 version for window (SPSS Inc.Chicago,Illinois) .

P value < 0.05 was considered as significant.

Results:

From the total of 208 patients 78 (37.5%) were diabetic , 33(42.3%) of them were females and 45 (57.7%) were males with male to female ratio in diabetic group equal to (1.3: 1) and 130 (62.5%) were non diabetic 20 (15.4%) of them were females and 110(84.6%) were males with male to female ratio in non diabetic group equal to(5.5:1), and 68(32.7%) patients had right ventricle infarction and 140(67.3%) patients had no right ventricle infarction, 31(45.5%) and 37(27.8%) of patients with inferior myocardial infarction and anterior myocardial infarction had right ventricle infarction respectively .

This study shows that the anterior myocardial infarction is more frequent than inferior myocardial infarction in both diabetic 56 (71.8%) Vs 19 (24.4%) and non diabetic patients 77(59.2%) Vs 49(37.7%), and there is no statistically significant difference in sites of myocardial infarction in diabetic and non diabetic patients (table-1).

Although right ventricle infarction was recognized more frequently in diabetic 27 (34.6%) than in non diabetic 41 (31.5%) patients (table-2) this difference is not statistically significant ($P=0.64$).

This study revealed no significant difference in frequency of right ventricle infarction among males and females (table-3) in both diabetic (33.3% Vs36.4%) and non diabetic patients (30.9% Vs 30.0%).

An interesting observations in this study (table-4) was that right ventricle infarction associated with anterior myocardial infarction recognized more

frequently in diabetic patients than in non diabetic patients 21(56.8) % Vs 16 (43.2%) and this was statistically significant ($P=0.034$).

While its association with inferior myocardial infarction is less in diabetic than in non diabetic patients but this was not statistically significant ($P= 0.149$).

Discussion

In this study 78 (37.5%) of patients with STEMI were diabetic and this is consistent with study from Karachi.³⁰

This study revealed that male to female ratio (2.9:1) and that was consistent with other studies.^{30, 31}

The male to female ratio in non diabetic patients was (5.5:1) while it is (1.3: 1) in diabetic this show that despite the incidence of coronary events is considerably lower among women, but this gender gap is abolished by the presence of diabetes .This is consistent with other study.³²

In this study right ventricle infarction was most commonly associated with inferior myocardial infarction (45.5%) which is consistence with other studies.^{2, 3, 4}

While it occurs in (27.8%) of anterior myocardial infarction in our study again this might be explained by performing right sided ECG to all patients with anterior myocardial infarction as soon as possible.^{11,12}

In this study the most common type of myocardial infarction was the anterior in both diabetic and non diabetic patients and there is increase in incidence of anterior myocardial infarction in diabetic (71.8%) than non diabetic (59.2%) patients but this was non significant ($P=0.139$),this study in agreement with Tiboo et al and Culic et al studies.^{30,33}

In this study the least common site of infarction was the lateral infarction in both diabetic (3.8%) and non diabetic (3.1%), and this is consistence with that of Culic et al.³³

It has been reported that diabetic exert a potent multifactorial atherosclerotic effect, especially with increasing age. And left anterior descending artery that supplied the anterior of the heart seems to be more susceptible to development of atherosclerosis in compare with right

coronary artery or circumflex artery. Left anterior descending artery are expose to more powerful biochemical and hemodynamic stress resulting from contraction of the heart which may related to greater endothelial and arterial wall damage favor development of atherosclerotic process which responsible for high prevalence of anterior myocardial infarction in diabetic patients .^{34, 35}

The low number of inferior myocardial infarction in diabetic patient may be related to small number of diabetic patients.

We think that high prevalence of right ventricle infarction in both diabetic and non diabetic in our study because we perform right side ECG for all patients with inferior and anterior myocardial infarction at time of admission or as soon as possible (usually less than 10 hours) even without clinical evidence of right ventricle infarction so we pick up most of cases with ST segment elevation in V3R and V4R.By this way we overcome the low sensitivity of the classic clinical triad of right ventricular infarction includes distended neck veins, clear lung fields, and hypotension¹¹, and the transient nature of electrocardiographic changes of right ventricle infarction.¹²

In this study females whether they are diabetic or non diabetic had slight higher prevalence of right ventricle infarction than male ,

nevertheless this increase is not significant and this might be explained by small sample size further study with large sample size is recommended .

An interesting observation in this study is that the occurrence of right ventricle infarction which was associated with anterior myocardial infarction is significantly higher in diabetic patients than non diabetic patients, and to our knowledge this was the firstly reported by this study .

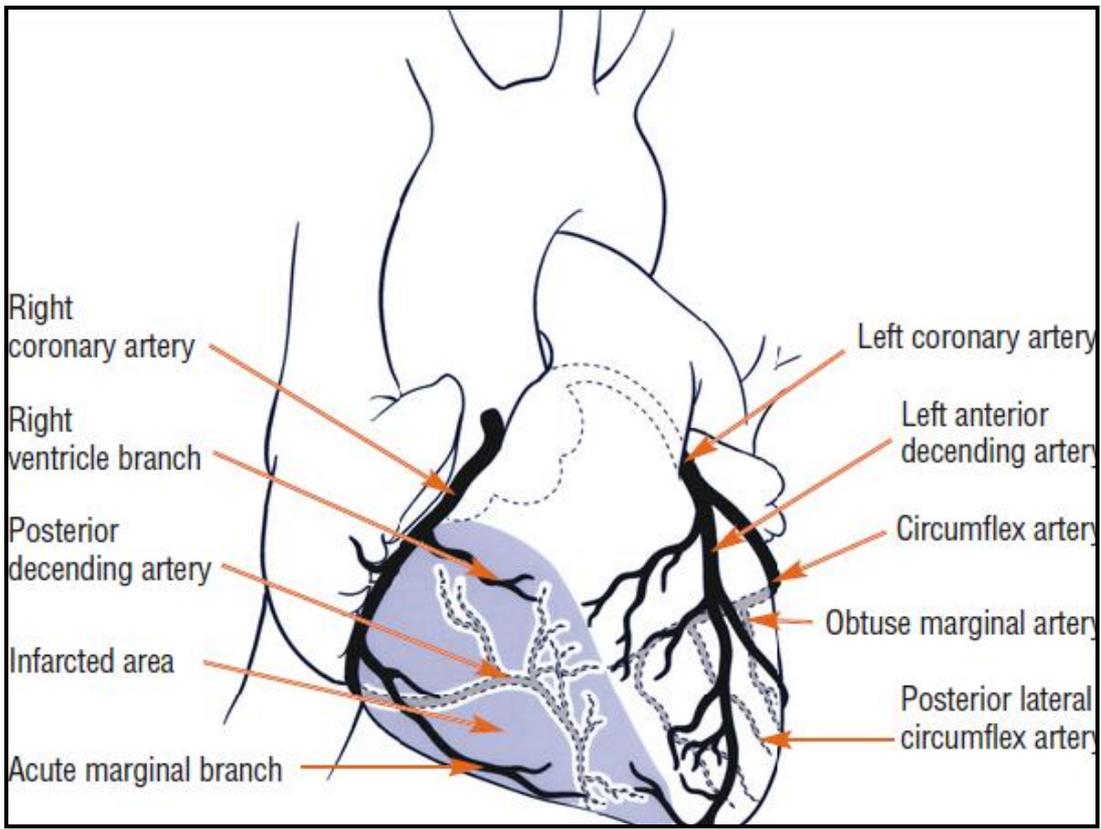
Anterior myocardial infarction caused by occlusion of left anterior descending and occlusion of left anterior descending can result in right ventricle infarction in (13%) because the anterior wall of right ventricle had dual supply (conus branch of right coronary artery and modurator branch of left anterior descending).⁶

But in presence of diabetes mellitus, almost three-fourths had high-grade coronary atherosclerosis and more than half had multivessel disease.³⁶

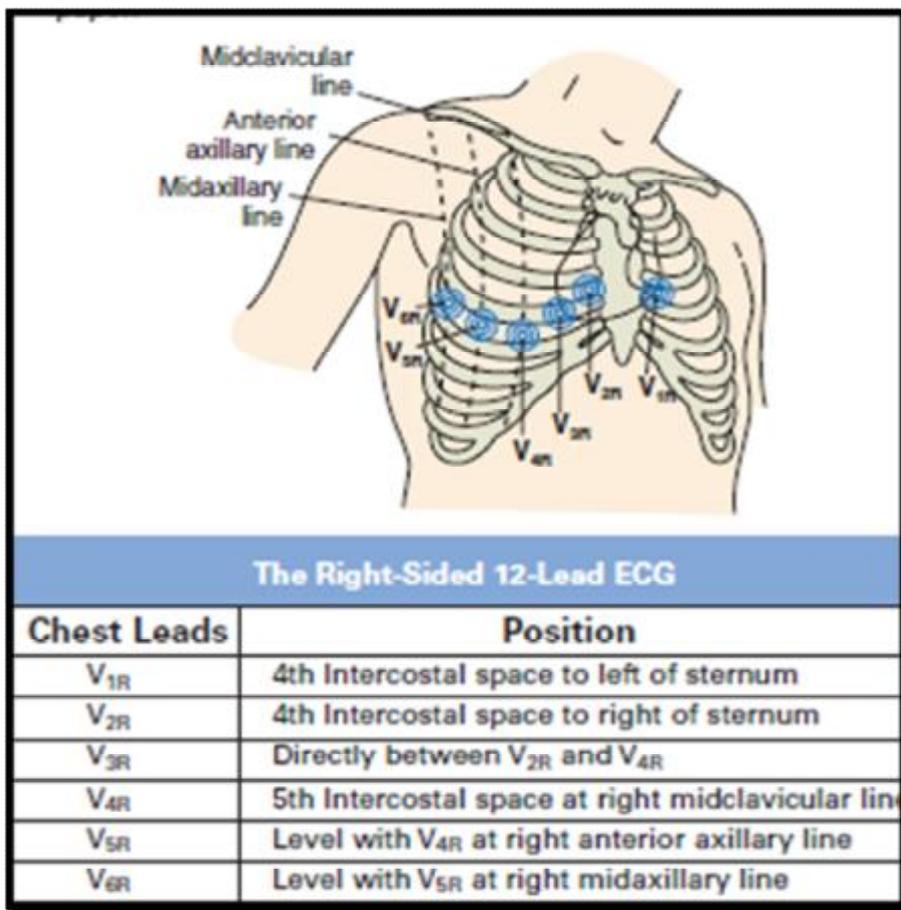
So that the anterior wall of right ventricle had more jeopardized blood supply and any occlusion of left anterior descending usually result in some degree of necrosis or stunning of right ventricle which reflected in ECG as ST segment elevation in V3R and V4R.

The low prevalence of right ventricle infarction that is associated with inferior myocardial infarction is that left anterior descending is the most common artery which affected by atherosclerosis in diabetes mellitus than right coronary artery or circumflex artery .³⁴

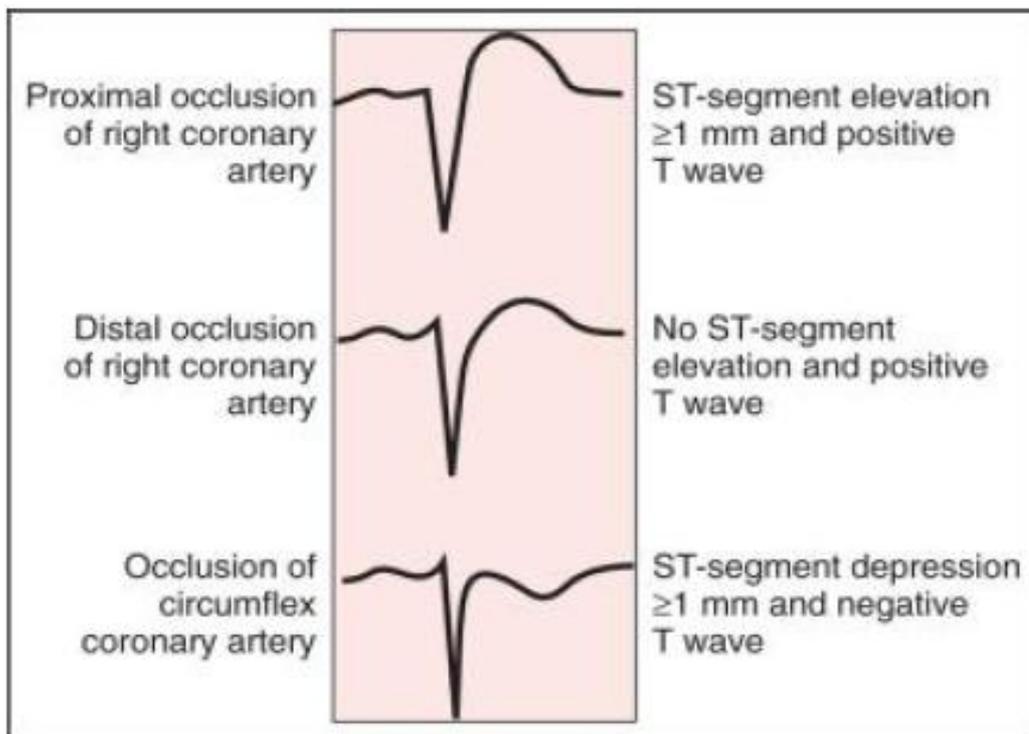
Conclusion Right ventricle infarction is not significantly increase in diabetic patients, but right ventricle infarction is more frequent in diabetic with anterior myocardial infarction than in non diabetic patients.



Picture-1- Shows anatomy of coronary circulation.



Picture -2- Shows Right sided chest leads connection ECG



Picture-3- ST elevation in right sided ECG which indicative of right ventricle infarction.

Table -1- Shows the ditribution of sites of myocardial infarction between diabetic and non diabetic patients :

Site of MI	Diabetic		Nondiabetic		Total	
	NO.	Percentage	NO.	percentage	NO.	Percentage
Anterior	56	71.8%	77	59.2% _b	133	63.9%
Inferior	19	24.4%	49	37.7%	68	32.7%
Lateral	3	3.8%	4	3.1%	7	3.4%
Total	78	100%	130	100%	208	100%

Table-2-Demonstrates the distribution of right ventricle infarction among diabetic and non diabetic patients :

	Diabetic		Nondiabetic		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
RVI +ve	27	34.6%	41	31.5% _b	68	32.7%
RVI – ve	51	65.4%	89	68.5%	140	67.3%
Total	78	100%	130	100%	208	100%

Table -3- Demonstrates the distribution of right ventricle infarction among diabetics and non diabetics patients in different sexes :

		Female		Male		Total	
		No.	Percentage	No.	Percentage	No.	Percentage
DM	RVI+ve	12	36.4%	15	33.3%	27	34.6%
	RVI-ve	21	63.6%	30	66.7%	51	65.4%
	Total	33	100%	45	100%	78	100%
Non diabetic	RVI+ve	7	35.0%	34	30.9%	41	31.5%
	RVI-ve	13	65.0%	76	69.1%	89	68.5
	Total	20	100%	110	100%	130	100%

Table-4-Shows distribution of right ventricle infarction among different sites of myocardial infarction in diabetic and non diabetic patients :

		RVI +ve		RVI -ve		Total	
		No.	percentage	No.	percentage	No.	Percentage
Anterior	DM	21	56.8%	35	36.5%	56	42.1%
	No DM	16	43.2%	61	63.5%	77	57.9%
	Total	37	100%	96	100%	133	100%
Inferior	DM	6	19.4% _b	13	35.1%	19	27.9%
	No DM	25	80.6%	24	64.9%	49	72.1%
	Total	31	100%	37	100%	68	100%

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أولئك المصابين بإحتشاء العضلة القلبية للبطين الأيمن يعرفون بأنهم المرضى الذين يظهرون ارتفاع بقطعة الأس تي أكثر من 1ملم في تخطيط القلب للجهة اليمنى بعد الدخول إلى ردهة إنعاش القلب بأسرع ما يمكن .

النتيجة : من أولئك الذين ادخلوا إلى ردهة إنعاش القلب حوالي (37.5%) مصابين بداء السكر و(62.5%) غير مصابين بداء السكر ومنهم (74.5%) رجالاً و(25.5%) نساءً نسبة الرجال إلى النساء غير المصابين بداء السكر هي (5.5:1) بينما كانت النسبة في المصابين بداء السكر (1.3:1).

وحوالي 32.7% من المرضى المصابين بإحتشاء العضلة القلبية يعانون من احتشاء العضلة القلبية للبطين الأيمن.

المكان الأكثر شيوعاً لإحتشاء العضلة القلبية هو العضلة القلبية الأمامية في المرضى الذين خضعوا إلى الدراسة ، ثلث المرضى الذين خضعوا للدراسة يعانون من احتشاء العضلة القلبية للبطين الأيمن في المرضى المصابين بداء السكر والغير مصابين به ، ولا توجد زيادة ملحوظة في نسبة احتشاء العضلة القلبية للبطين الأيمن في المرضى المصابين بداء السكر ولكن داء السكر يرتبط بزيادة ملحوظة في نسبة احتشاء العضلة القلبية للبطين الأيمن المصاحب لإحتشاء العضلة القلبية الأمامية ولا يوجد اختلاف في نسبة احتشاء العضلة القلبية للبطين الأيمن بين الجنسين.

الاستنتاج: احتشاء العضلة القلبية للبطين الأيمن لم يزداد زيادة ملحوظة عند المرضى المصابين بداء السكر ولكنها أكثر شيوعاً في داء السكر مصحبةً احتشاء العضلة القلبية الأمامية مقارنةً بغير المصابين بداء السكر.

الخلاصة

المقدمة: تطور الاهتمام في تشخيص إحتشاء العضلة القلبية للبطين الأيمن بطرق غير تداخلية تطور بسبب النتائج العلاجية الناتجة من تميز المرضى المصابين بالاختلال الوظيفي للبطين الأيمن وبين أولئك الذين يعانون من العوارض السريرية الأكثر شيوعاً للاختلال الوظيفي للبطين الأيسر.

المريض الذي يعاني من اي نوع من أنواع إحتشاء العضلة القلبية المصاحب لإحتشاء العضلة القلبية للبطين الأيمن لديه نسبة عالية ملحوظة من انخفاض الضغط الشرياني وتباطئ نبضات القلب الذي يحتاج إلى زرع منظم لضربات القلب ونسبة وفيات داخل المستشفى أعلى من أولئك الذين لا يعانون من لإحتشاء العضلة القلبية للبطين الأيمن.

أهداف الدراسة: لحساب نسبة احتشاء العضلة القلبية للبطين الأيمن بين المرضى المصابين باحتشاء العضلة القلبية وفي ما إذا كانت مختلفة في أولئك المصابين بداء السكر أو الغير مصابين

طريقة العمل: الدراسة شملت (208) مريض ادخل والى ردهة إنعاش القلب لثلاث

مستشفيات هي: مستشفى البصرة العام، مستشفى الفيحاء العام ومستشفى الصدر التعليمي خلال سنة واحدة من الثالث من كانون الأول 2008 إلى الثاني من كانون الأول 2009.

المرضى الذين ادخل والى ردهة إنعاش القلب وشخصوا بأنهم مصابون بإحتشاء العضلة القلبية اخضعوا الى تخطيط القلب الكهربائي للجهة اليمنى ، وقسم المرضى إلى مجموعتين :

الأولى: المرضى المصابين بداء السكر.

الثانية: المرضى غير المصابين بداء السكر.

وتم تقسيم كل مجموعة إلى ثلاثة مجاميع ثانوية : مرضى مصابين بإحتشاء العضلة القلبية الأمامية ، السفلى و الجانبية

دراسة احتشاء العضلة القلبية للبطين الأيمن في المرضى المصابين وغير المصابين بداء السكر

دراسة مقدمة إلى اللجنة العلمية المشرفة على دراسة الطب الباطني
كجزء من متطلبات نيل شهادة زمالة المجلس العراقي
للاختصاصات الطبية في الطب الباطني

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