AJPS, 2013, Vol. 13, No.1

Assessment of the Common Risk Factors for re-Stenosis of Coronary Arteries in Women

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Abstract:

The study aims to identify the common risk factors for arterial re-stenosis in women, and to find out the correlation between restenosis and some risk factors. Descriptive analytical design of the study was conducting on 35 women, starting from January 4th 2010 to the March 4th 2010.

The questionnaire was composed of two parts and introductory page that invite the women who participate in the study, part one is demographic- characteristics sheet which consist of 7 items which included: age, social status, level of education, income levels, family members, and employments, Part two included risk factors which consist of 9 Items.

The researchers used the appropriate statistical methods in the data analysis which included descriptive data analysis and inferential data analysis.

Results of the present study revealed that 28.6% of restenosis women at 52-57 and 58-63 years old, majority of them were married, 28.6% of the study sample were illiterate, 97.1% of women were high cholesterol level, 51.4% of them were obese, and the results presented that there were correlation between coronary arterial restenosis and overweight and types of live event of the women.

Keyword: Stenosis, coronary artery disease, risk factors.

الخلاصـة:

تهدف الدراسة للتعرف على عوامل الخطورة الاكثر شيوعا" لعودة تضيق الشرايين عند النساء ولايجاد الفروقات المعنوية بين عودة تضيق الشرايين مع بعض عوامل الخطورة, دراسة وصفية تحليلية إجريت على 35 إمرأة وبدأت الدراسة في الثاني من كانون الثاني 2010 ولغاية الثاني من شباط 2011 وتكونت الاستبانة من جزئين مع صفحة الترحيب بالمشاركين بالدراسة وتضمن الجزء الاول من الاستبانة 26 فقرة تتعلق بالمعلومات الديموغرافية للمريضات وهي العمر والمستوى الاجتماعي والمستوى التعليمي ومعدل الدخل وعدد افراد العائلة والعمل والجزء الثاني تضمن 27 فقرة تتعلق بعوامل الخطورة واستعمل الباحثون الوسائل الاحصائية المناسبة في تحليل النتائج وهي الاحصاء الوصفي والتحليلي وأشارت نتائج الدراسة الحالية أن 9,28 % من النساء اللواتي يعانين من عودة تضييق الشرايين ضمن الفئة العمرية 55-63 سنة ومعظم النساء متزوجات و9,28 % من النساء غير متعلمات و1,97 % منهن يعانين من ارتفاع نسبة الكولسترول وأن 4, 51% من النساء بدينات وأشارت النتائج بوجود فروقات معنوية عالية بين عودة تضييق الشرايين ومعدل السمنة ونوع الاحداث الحياتية المؤثرة على النساء لذا أوصى الباحثون بتأهيل النساء اللواتي اجرين عملية القسطرة القلبية من خلال المحاضرات المبرمجة المتعلقة بعوامل الخطورة الاكثر شيوعا" والمؤدية الى عودة تضييق الشرايين وتشجيع النساء لأستعمال تمارين الاسترخاء من أجل تخفيف أعباء الاحداث اليومية.

Introduction:

Coronary arterial stenosis means constriction or narrowing. A coronary artery that's constricted or narrowed is called stenosis. Buildup of fat, cholesterol and other substances over time may clog the artery [1].

The introduction of percutaneous Trans luminal coronary angioplasty (PTCA) revolutionized the surgical treatment of coronary artery disease. However, despite increased surgical experience and technical breakthroughs, restenosis occurs in 30%-50% of patients undergoing simple balloon angioplasty and in 10%-30% of patients who receive an intravascular stent. Human data indicate that restenosis is a response to injury incurred during PTCA. The need for re-intervention in a high percentage of patients due to restenosis remains an important limitation to the long-term success of PTCA. Stenting reduces initial elastic recoil and limits negative arterial remodeling; however,

bare-metal stents may promote intimal hyperplasia by eliciting an immune and proliferative response [2].

One way to widen a coronary artery is by using percutaneous coronary intervention (PCI, or balloon angioplasty).Some patients who undergo PCI have restenosis of the widened segment within about six months of the procedure. Rest nosed arteries may have to undergo another angioplasty. One way to help prevent restenosis is by using stents. A stent is a wire mesh tube used to prop open an artery after angioplasty. Restenosis is less common in stented arteries. Studies are under way using stents covered with drugs that show promise for improving the long-term success of this procedure [3].

Stenosis can also occur after a coronary artery bypass graft (CABG) operation. This type of heart surgery is done to reroute, or "bypass," blood around clogged arteries. This improves the supply of blood and oxygen to the heart. In this case, the stenosis may occur in the transplanted blood vessel segments and require angioplasty or atherectomy [4].

As a result of advances in scientific knowledge and technology, the number of people living with chronic conditions continues to rise.

Recurring symptoms of re-stenosis can disrupt personal and professional activities, upset emotional well-being and limit individual potential. It is imperative that the best ways to manage and treat the risk factors are made available to patients so they can enjoy a normal, healthy life [5]. The study aims to determine the risk factors of coronary artery re-stenosis in women, and to find-out the correlation between arterial re-stenosis and age, high level of cholesterol, levels of triglycerides, hypertension, high body weight, type of life events, and social status.

Materials and Methods:

Design of the Study:

Descriptive analytical design of the study was starting from January 2nd 2011 to the April 2nd 2010.

Setting of the Study:

The present study was carried out in Al-Shaheed Gaze and Ibn-Al-Bettar teaching hospitals in Baghdad

Sample of the Study:

A non- probability (purposive) sample of 35 women who have arterial re-stenosis were admitted to the hospitals.

Study Instrument:

Instruments were constructed through the review of available literature which composed of two parts and introductory page that invite the women, who participate in the study.

Part I: composed of demographic-characteristics sheet which consist of 7 items which included: age, social status, level of education, income levels, family members, and employments.

Part II: included risk factors which consist of 9 Items.

Statistical analysis:

The researchers used the appropriate statistical methods in the data analysis which included descriptive data analysis and inferential data analysis.

Results:

There were 28.6% of women at age 52-57 and 58-63 years, 77.1% of them were married, 28.6% of them were illiterate, 54.3% were barely sufficient as income level, and 85.7% of the study samples were housewife.

There were 68.6% of the study samples at normal levels of lipoprotein, 97.1% of them were high levels of cholesterol, 82.9% of women have hypertension, most of them were obese, and majority of the study samples were exposure to strong life event after first cardiac catheterization(40.9%).

There were highly correlation co efficient between coronary re-stenosis and overweight , and with type of live events and social status.

Table-1: Socio-Demographic Characteristics of the Study Sample.

	Variables	No.	%
1-	**Age:**		
	- 40 – 45 years	2	5.7
	- 46 – 51 years	5	14.3
	- 52 – 57 years	10	**28.6**
	- 58 – 63 years	10	**28.6**
	- 64 – 69 years	5	14.3
	- 70 – 75 years.	3	8.5
	Total	**35**	**100.0**
2-	**Social Status:**		
	- Married.	27	**77.1**
	- Single.	1	2.9
	- Widowed.	7	20.0
	Total	**35**	**100.0**
3-	**Level of Education:**		
	- Illiterate.	10	**28.6**
	- Read and Wright	6	17.1
	- Primary	8	22.9
	- Intermediate	7	20.0
	- Secondary.	1	2.9
	- College	3	8.5
	Total	**35**	**100.0**
4-	**Income Levels:**		
	- Sufficient	13	37.1
	- Barley Sufficient	19	**54.3**
	- Not Sufficient	3	8.6
	Total	**35**	**100.0**
5-	**Family Members:**		
	- 1-3 members.	1	2.9
	- 4 – 6 =	4	11.4
	- 7 – 9 =	23	**65.7**
	- 10 – 12 =	4	11.4
	- 13 – 15 =	3	8.6
	Total	**35**	**100.0**
6-	**Employment:**		
	- Government employ.	2	5.7
	- Sedentary	3	8.6
	- Housewife	30	**85.7**
	Total	**35**	**100.0**

Table-2: Risk Factors of the Study Samples

	Variables	No.	%
1-	**Smoking:**		
	- Yes	6	17.2
	- No	29	**82.8**
	Total	**35**	**100.0**
2-	**Lipoprotein levels:**		
	- Normal level	24	**68.6**
	- Abnormal level	11	31.4
	Total	**35**	**100.0**
3-	**Cholesterol levels:**		
	- Normal level	1	2.9
	- Abnormal level	34	**97.1**
	Total	**35**	**100.0**
4-	**Do you have Hypertension:**		
	- Yes.	29	**82.9**
	- No	6	17.1
	Total	**35**	**100.0**
5-	**Do you have Diabetic:**		
	- Yes	16	45.7
	- No	19	**54.3**
	Total	**35**	**100.0**
6-	**Body Mass Index:**		
	- Normal Weight	8	22.9
	- Over weight.	9	25.7
	- Obese	18	**51.4**
	Total	**35**	**100.0**
7-	**Regular drug admission:**		
	- Yes	31	**88.6**
	- No	4	11.4
	Total	**35**	**100.0**
8-	**Restricted in Diet:**		
	- Yes	29	**82.9**
	- No	6	17.1
	Total	**35**	**100.0**
9-	**Types of Life Events:**		
	- Family problems	5	**22.7**
	- Loss of work	2	**9.0**
	- Mother dead	2	**9.0**
	- Parent dies	9	**40.9**
	- Anxiety about their children	4	**18.4**
	Total	**22**	**100**

Table-3: Statistical Differences between some Variables regarding to coronary arterial re-stenosis.

Variables	*Mean*	*SD*	*t*	*df*	*P≤0.05*	*C.S.*
Age	3.6	1.3	.123	32	.86	N.S
High Cholesterol levels	2.0	0.0	-.68	32	.49	N.S
level of Triglycerides	1.3	0.4	.42	32	.67	N.S
Hypertension	1.3	0.3	-1.0	32	.32	N.S
Over weight and obese	2.4	0.7	1.88	32	0.05	S.
Severity of Life Events	5.7	1.1	2.77	32	0.01	H.S.
Social Status	1.3	1.9	2.25	32	0.03	H.S.

Discussion:

The results of the present study revealed that 28.6% of women at age 52-57 and 58-63 years , 77.1% of them were married, 28.6% of them were illiterate, 54.3% were barely sufficient as income level, and 85.7% of the study samples were housewife (Table-1).

The findings of the present study was revealed that of 97.1% of them were high levels of cholesterol, 82.9% of women have hypertension, most of them were obese, and majority of the study samples were exposure to strong life event after first cardiac catheterization (40.9%) , 17.2% of the study sample were smoker (Table-2). The endogenous and exogenous risk factors, such as smoking, hyperlipidemia, diabetes mellitus (DM), and hypertension , significantly increase the individual risk for coronary re-stenosis and smoking indeed seems to influence vascular remodeling and neointimal hyperplasia after endovascular or angiographic treatment. This protective effect is mediated by an interaction with wound healing and vascular smooth muscle cell proliferation. Smokers are known to have an increased concentration of carboxyhemoglobin and increased blood CO concentrations. Increased blood CO concentrations may lessen vascular inflammation and could inhibit vascular smooth muscle cell proliferation in the treated segment [12, 13].

The study shows that there were highly correlation co efficient between coronary arterail re-stenosis and overweight, and with type of live events and social status. The patients should lead a heart-healthy lifestyle that includes a diet low in animal fat, regular exercise, blood pressure control, cessation of smoking, and minimal alcohol consumption. Regularly following-up with a cardiologist and taking medications as prescribed are also important preventive measures [8, 9].

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