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ROLE OF PERIPHERAL PULSE MEASUREMENT IN DIAGNOSIS OF PAROXYSMAL ATRIAL FIBRILLATION AFTER ISCHEMIC STROKE

By

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ABSTRACT

Background: Ischemic stroke comprises 85% of all strokes**.** Atrial fibrillation (AF) is the most common cause of cardioembolism and a leading cause of ischemic stroke. The diagnosis of paroxysmal AF (PAF) after cerebral ischemia is often difficult to establish because paroxysmal episode may be short and may elude stroke unit monitoring in the acute phase.

Objectives: Detection of PAF after ischemic stroke and investigating feasibility and diagnostic accuracy of measurement of the peripheral pulse at the radial artery as a simple non-invasive screening tool for PAF in patients after acute ischemic stroke.

Patients and methods: This study was carried on 52 patients with acute ischemic stroke admitted at Neurology Department, Al-Azhar University Hospitals from 1st November 2014 till the 1st of June 2015. All patients were submitted to complete medical history, complete physical examination, full neurological examination, routine laboratory investigations, CT scan of the brain, conventional ECG registration and echocardiography. All patients and their relatives were undergoing on training program for peripheral pulse measurement and standardized introduction on the pathophysiology of cardioembolic stroke.

Results: Patients with PAF were 11 (21.2 %), patients with AF were 22 (42.3 %), mean age ± SD of patients with AF was 60.273 ± 10.743 years and that of patients with PAF was 59.682 ± 8.283 years. Patients had PAF were 18% males, 82% females, 90.9% had a history of hypertension, 91% had diabetes mellitus, 72.7% had hyperlipidemia, 9% were smokers, 72.7% had IHD (ischemic heart disease) and 81.8% had a history of previous stroke. Patients had AF were 22.7% males, 77.3% females, 90.9% had a history of hypertension, 72.7% had diabetes mellitus, 50% had hyperlipidemia, 13.7% were smokers, 86.4% had IHD and 90.9% had a history of previous stroke. AF or PAF related ischemic stroke was associated with older age, female gender, hypertension, diabetes mellitus, no smoking and history of previous stroke. Hypertension and diabetes mellitus were significant predictors of newly diagnosed (NDAF) AF or PAF in acute ischemic stroke. Measurements by health care professionals had sensitivity 81.82, specificity 95.12, positive predictive value 81.82, and negative predictive value 95.12 with accuracy 92.31. Measurements by patients themselves had sensitivity 42.86, specificity 53.57, positive predictive value 18.75, and negative predictive value 78.95 with accuracy 51.43. Measurements by the relatives of the patients had sensitivity 55.56, specificity 72.22, positive predictive value 33.33, and negative predictive value 86.67 with accuracy 68.89

Conclusion: Early diagnosis of AF facilitated the detection of patients who should receive oral anticoagulant treatment to decrease risk of stroke. Primary prevention of cardioembolic stroke can be achieved by early discovering AF patients. Patients with diabetes, hypertension, IHD or history of previous stroke are at

increased risk of AF or PAF. We suggest that all patients with AF were PAF at first and then converted to established AF. Early detection and management of PAF reduce the occurrence of established AF.

Key Words: stroke, atrial fibrillation**.**

INTRODUCTION

Stroke is defined as acute focal loss of perfusion to a vascular territory of the brain, resulting in ischemia with corresponding loss of neurologic function. Ischemic stroke comprises 85% of all strokes ***(Hill, 2005)***. Acute stroke is one of the leading factors of morbidity and mortality worldwide. Stroke ranks as third most common cause of death in industrialized countries ***(Hacke et al., 2003).***

Atrial fibrillation is the most common cause of cardioembolism and a leading cause of ischemic stroke. The diagnosis of PAF after cerebral ischemia is often difficult to establish because paroxysmal episode may be short and may elude stroke unit monitoring in the acute phase. However, the diagnosis of AF is of particular clinical relevance because antithrombotic treatment significantly reduces the risk of recurrent embolism and death ***(Kallmünzer et al., 2014).***

The detection rate of AF after stroke has progressively increased by extending the duration and intensity of cardiac monitoring for this purpose, innovative medical devices and implantable event recorder have been suggested as long term diagnostic tools after cryptogenic stroke. However, high socioeconomic expense , malcompliance and the invasiveness of some of these approaches currently limit their use to a minority of affected patient , while the growing number of stroke survival is lacking access to diagnostic screening tools ***(Cotter et al ., 2013).*** For primary prevention , the measurement of peripheral pulse is currently the evidence based method of choice for screening among individuals aged 65 years or older and the only diagnostic tool recommended by international guidelines ***(Kamel et al ., 2013).***

The cause of ischemic stroke remains unknown in approximately one third of patients. Some proportion of these cryptogenic strokes may be caused by undetected AF. Because asymptomatic and paroxysmal AF is common and increases the risk of stroke as much as chronic AF. As a result, clinical guidelines recommend at least 24 hours of cardiac monitoring after stroke as an opportunity to make a delayed diagnosis of PAF and in practice, patients are commonly admitted to telemetry beds for 24 to 48 hours of continuous ECG. However, there is no agreement on the optimum type and duration of monitoring. Despite this uncertainty, detection of AF is important, because treatment with anticoagulation decreases the annual risk of recurrent stroke by two thirds ***(Kamel et al., 2009)***. The present study was a trial to detect PAF after ischemic stroke using peripheral radial pulse.

PATIENTS AND METHODS

This study was carried on 52 patients with acute ischemic stroke admitted at the Neurology Department in Al-Azhar University Hospitals from 1st November 2014 till the 1st of June 2015. All patients were submitted to the following:

Complete medical history, complete physical examination, full neurological examination, routine laboratory investigations including; complete blood count, blood urea, creatine, lipid profile, random blood sugar, AST, ALT, albumin, bilirubin (direct, indirect), PT, PTT and INR , ESR, CRP, uric acid, CT scan of the brain, connection to multimodal monitoring system including 6 leads continuous ECG registration and echocardiography.

All patients or their legal representatives gave written informed consent before inclusion in our study. All patients and their relatives were undergoing on training program for peripheral pulse measurement and standardized introduction on the pathophysiology of cardioembolic stroke. We guided them to standardized pulse measurement at the left radial artery 3cm proximal to the wrist. In addition to personal training, the patients and relatives received schematic instruction materials and stopwatch.

The training had two educational objectives:

- Learning to distinguish between rhythmic pulse sensations (normal or absolute arrhythmic sensation, suspected AF).
- Performing a measurement of the pulse rate using stopwatch.

- The training was considered successful if 2 subsequent measurements were accomplished reliably. In case of tiring or insufficient learning success after 30 minutes, the tutorial was interrupted and continued by the next day. Tutorial without success on the second day were considered as a failure and led to cessation of further measurements.
- Three different modalities of measurements of peripheral pulse were investigated: 1-measurement by health care professional with positive experience on cardiovascular assessment of patients. 2- Measurement by a relative of the patient after successful completion of the tutorial. 3- Self measurement by the patient after successful completion of the tutorial. Measurements of participants as well as our measurements were then compared with simultaneous blinded ECG to evaluate diagnostic accuracy parameters.

Inclusion criteria: All patients with acute ischemic stroke.

Exclusion criteria: Patients with cardiac pacemaker were excluded from our study.

STATISTICAL ANALYSIS: The collected data were tabulated and analyzed using SPSS version 21 software (Spss Inc, Chicago, ILL Company). Categorical data were presented as number and percentages while quantitative data were expressed as mean and standard deviation. Chi square test (X^2), "Z" test and student "t" tests were used as tests of significance, Odds ratio (OR) and the corresponding 95% CI were calculated when applicable. Logisitic regression analysis was done to determine the significant predictors (independents) of stroke with AF. The accepted level of significance in this work was stated at 0.05. Sensitivity, Specificity, PPV, NPV and accuracy were used.

RESULTS

Fifty two patients with acute ischemic stroke were included in this study. 50 % of the sample were males and 50 % were females, with mean age of 57.3 years ranging from 34 – 85 years. Prevalence of PAF among the study group was 21.2% while 78.8% of patients were negative for PAF. Mean age of patients with PAF wass 59.68 with SD ± 8.28, and the mean age of patients without PAF was 55.47 with SD ± 7.5. 81.82 % of the females were stroke patients with PAF, while 18.18 % of the males were stroke patient with PAF, and this difference was statistically significant. Percentage of occurrence of PAF in nonsmoker patient was 90.91%, while in smoker patients was 9.09 %, and this difference was statistically significant. Percentage of occurrence of PAF in diabetic patient was 90.91%, while in non-diabetic patients was 9.09 % and this difference was statistically significant. Percentage of occurrence of PAF in patient with old stroke was 81.82%, while in patients with no history of old stroke was 18.18% and this difference was statistically significant. Percentage of occurrence of PAF in patient with hypertension was 90.91%, while in patients with no hypertension was 9.09% and this difference was statistically significant. Percentage of occurrence of PAF in patient with history of IHD was 72.73 %, while in patients with no history of IHD was 27.27%, and this difference was statistically significant ***(table 1).***

Prevalence of AF among the study group was 42.3%, while 57.7 % of patients were negative for AF. Mean age of patients with AF was 60.273 with SD ± 10.743, and the mean age of patients without AF was 56.439 with SD ± 7.068 and this was statistically insignicant. 77.27% of the females were stroke patients with AF while 22.73% of the males were stroke patient with AF, and this difference was statistically significant. Percentage of occurrence of AF in non-smoking patient was 86.36 %, while in smoking patients was13.64% and this difference was statistically significant. Percentage of occurrence of AF in diabetic patient was 72.73 %, while in non-diabetic patients was 27.27 % and this difference was statistically significant ***(table 2).***

Measurement of PAF by health care professional was with sensitivity 81.82, specificity 95.12, positive predictive value 81.82, and negative predictive value 95.12 with accuracy 92.31. Measurement of PAF by the patients themselves was with sensitivity 42.86, specificity 53.57, positive predictive value 18.75, and negative predictive value 78.95 with accuracy 51.43. Measurement of PAF by the patients themselves was with sensitivity 55.56, specificity 72.22, positive predictive value 33.33, and negative predictive value 86.67 with accuracy 68.89 ***(table 3).***

Table (1): Demographic data of the studied sample and other variables:

Patients / Variables		With PAF	With PAF	Total
Sex	**Male**	24 (46.1 %)	2 (3.9 %)	26 (50%)
	Female	17 (32.7 %)	9 (17.3 %)	26 (50%)
	Total	41 (78.8 %)	11 (21.2%)	52 (100%)
	Chi-square (X^2)	6.019		
	P-value	0.014		
	Odd (CI 95%)	0.157(0.030:0.822)		
Age (years)	**Mean ± SD**	55.47±7.5	59.68±8.3	
	Range (Min-Max)	45-80	34-72	34-80
	t test	-1.92		
	P value	0.06		
Smoking	**Non smoker**	22 (53.66 %)	10 (90.91 %)	32 (61.54%)
	Smoker	19 (46.34 %)	1 (9.09)	20 (38.46%)
	Total	41 (100 %)	11 (100%)	52 (100%)
	Chi-square (X^2)	5.973		
	P-value	0.015		
	Odd (CI 95%)	0.116(0.014: 0.989)		
Diabetes	**Negative**	23 (56.1 %)	1 (9.1 %)	24 (46.15%)
	Positive	18 (43.9 %)	10 (90.1%)	28 (53.85%)
	Total	41 (100%)	11 (100 %)	52 (100%)
	Chi-square (X^2)	8.851		
	P-value	0.003		
	Odd (CI 95%)	12.778(1.494:109.276)		
Old stroke	**Negative**	41 (100%)	2 (18.18 %)	43 (82.69 %)
	Positive	0 (0 %)	9 (81.81 %)	9 (17.31 %)
	Total	41 (100 %)	11 (100 %)	52 (100%)
	Chi-square (X^2)	37.485		
	P-value	0.000		
	Odd (CI 95%)	0.047(0.012:0.180)		
Hypertension	**Negative**	11 (26.83 %)	1 (9.09 %	12 (23.08 %)
	Positive	30 (73.17 %)	10 (90.91 %)	40 (76.92 %)
	Total	41 (100 %)	11 (100 %)	52 9 100 %)
	Chi-square (X^2)	1.792		
	P-value	0.181		
	Odd (CI 95%)	3.667(0.419:32.069)		
IHD disease	**Negative**	27 (65.85%)	3 (27.27%)	30 (57.69%)
	Positive	14(34.15%)	8(72.73%)	22(42.31%)
	Total	41 (100 %)	11 (100%)	52 (100%)
	Chi-square (X^2)	5.317		
	P-value	0.021		
	Odd (CI 95%)	5.143(1.176:22.493)		

Table (2): Relationship between AF and other parameters.

Variables \ AF		Negative	Positive	Total
Patients Number		30 (57.7 %)	22 (42.3%)	52 (100%)
Age (years)	**Range**	45-80	34-72	34-80
	Mean±SD	56.439±7.068	60.273±10.743	57.25±8
	t test	-1.422		
	p-value	0.161		
Sex	**Female**	9 (30%)	17 (77.27%)	26 (50%)
	Male	21 (70%)	5 (22.73%)	26 (50%)
	Total	30 (100%)	22 (100%)	52 (100%)
	Chi-square (X^2)	11.853		
	P-value	0.001		
	Odd (CI 95%)	0.126 (0.036 : 0.447)		
Smoking	**Non smoker**	13(43.33%)	19(86.35%)	32(61.54%)
	Smoker	17(56.67%)	3(13.64%)	20(38.46%)
	Total	30(100%)	22(100%)	52(100%)
	Chi-square (X^2)	10.714		
	P-value	0.001		
	Odd (CI 95%)	0.121(0.029: 0.497)		
Diabetes	**Non diabetic**	18(60%)	6(27.27%)	24(46.15%)
	diabetic	12(40%)	16(72.73%)	28(53.85%)
	Total	30(100%)	22(100%)	52(100%)
	Chi-square (X^2)	5.617		
	P-value	0.018		
	Odd (CI 95%)	4 (1.218:13.136)		
Old stroke	**Negative**	14(46.67%)	2(9.09%)	16(30.77%)
	positive	16(53.33%)	20(90.91%)	36(69.23%)
	Total	30(100%)	22(100%)	52(100%)
	Chi-square (X^2)	9.334		
	P-value	0.002		
	Odd (CI 95%)	8.750(1.730: 44.254)		
hypertension	**Negative**	10(33.33%)	2(9.09%)	12(23.08%)
	positive	20(66.67%)	20(90.91%)	40(76.92%)
	Total	30(100%)	22(100%)	52(100%)
	Chi-square (X^2)	4.586		
	P-value	0.032		
	Odd (CI 95%)	5(0.970: 25.771)		
IHD	**Negative**	17(56.67%)	3(13.64%)	20(38.46%)
	positive	13(43.33%)	19(86.35%)	32(61.54%)
	Total	30(100%)	22(100%)	52(100%)
	Chi-square (X^2)	10.714		
	P-value	0.001		
	Odd (CI 95%)	0.121(0.029: 0.497)		

Table (3): Measurements of PAF by different subjects.

Subjects \ PAF		Negative	Positive	Total	ROC curve	
Health care professional	Negative	39(75%)	2(3.85%)	41(78.85%)	Sens.	81.82
					Spec.	95.12
	Positive	2(3.85%)	9(17.31%)	11(21.15%)	PPV	81.82
					NPV	95.12
	Total	41(78.85%)	11(21.15%)	52(100%)	Accuracy	92.31
Self-measurement	Negative	15(42.86%)	4(11.43%)	19(54.29%)	Sens.	42.86
					Spec.	53.57
	Positive	13(37.14%)	3(8.75%)	16(45.71%)	PPV	18.75
					NPV	78.95
	Total	28(80%)	7(20%)	35(100%)	Accuracy	51.43
Relatives	Negative	26(57.78%)	4(8.89%)	30(66.67%)	Sens.	55.56
					Spec.	72.22
	Positive	10(22.22%)	5(11.11%)	15(33.33%)	PPV	33.33
					NPV	86.67
	Total	36(80%)	9(20%)	45(100%)	Accuracy	68.89

DISCUSSION

In our study, the percentage of paroxysmal AF detected by health care professional measurements using peripheral pulse measurement and continuous ECG monitoring was 21.2%. This was in agreement with ***Tayal et al. (2008)*** with 23%***, Elijovich et al. (2011)*** with 20% and ***Miller et al. (2013)*** with 17.3%. However, our results disagreed with ***Guanalp et al. (2006)*** with 34.8 %, ***Higgins et al. (2013)*** with 42 %, and ***Merce et al. (2013)*** with 35.7%. This disagreement came due to the difference in the advanced techniques for detection of paroxysmal AF as ambulatory holter monitoring, mobile cardiac outpatient telemetry, external loop recording and implantable loop recording were used.

In our study, the mean age of stroke patients with PAF and AF was the higher than patients without PAF or AF. These results were in agreement with ***Alberts and Eikelboom (2012)*** who stated that patients with atrial fibrillation-related stroke tend to be older than other patients with stroke and ***Amin (2013)*** who found that the risk of AF or PAF related stroke increase with aging.

The present study showed that AF related stroke tends to be more in females than males, and it showed significant difference between the two groups. These results were in agreement with ***Kamel et al. (2009)*** who said that there are increased risks of PAF and AF related strokes in females.

In our study concerning the history of hypertension, it was found in significant high percent in stroke patients with and without AF. These results were in agreement with ***Di Legge et al. (2012)*** who stated that hypertension (HTN) is the single most important modifiable risk factor for stroke. HTN contributes to 60% of all strokes. Also in agreement with ***Alberts and Eikelboom (2012)*** who stated that the major risk factors for stroke in individuals with atrial fibrillation is history of hypertension. On the other hand, ***Kamel et al. (2009)*** found that Detection of AF was more associated with the absence of hypertension in stroke patients as hypertension is strongly associated with lacunar and atherothrombotic strokes. This difference may be explained by difference in genetic and ethnic state between studied subjects.

In our study, diabetes mellitus was detected in 73% of stroke patients with AF compared to 40% of stroke patients without AF, and this difference was statistically significant. Also, diabetes mellitus was detected in 91% of stroke patients with PAF compared to 44% of stroke patients without PAF, and this difference was statistically significant. Our results were in agreement with ***Alberts and Eikelboom (2012)*** who found that the diabetes is one of the major risk factors for stroke in individuals with atrial fibrillation and in concordance with findings of ***Kallmünzer et al.(2014)*** who reported that diabetes was found more frequently among stroke patients with cardiac arrhythmias mainly AF. These results also agreed with ***Sposato et al.(2012)*** who stated that diabetes mellitus is independent predictors of newly diagnosed AF (NDAF) in stroke patients as diabetes mellitus might contribute to the impaired cardiovascular autonomic function seen in stroke survivors and diabetic dysautonomy could explain this finding by the parasympathetic and sympathetic phenomena are possible mechanisms of paroxysmal AF.

We found in our study that percentage of occurrence of PAF and AF in non-smoking patients was higher than smoking patients, and this difference was statistically significant. This was supported by the study of ***Bansil and Karim (2004)*** who found that stroke patients with AF were less likely to be smokers and may be related to smokers having diffuse atherosclerotic disease and developing strokes earlier because of other causes. Also, ***Ruig?mez et al. (2009)*** stated that there is a relative risk in non-smokers. ***Bugnicourt et al. (2013)*** also reported that stroke patients with NDAF were less likely to be active smokers.

In our study, concerning the history of previous stroke, it was found in 90.91% and 53.33% of stroke patients with and without AF respectively, and the difference was statistically significant. Also, it was found in 81.82% and 0% of stroke patients with and without PAF respectively, and the difference was statistically significant. This was supported by the study of ***Alberts and Eikelboom (2012)*** who found that the major risk factors for stroke in individuals with atrial fibrillation are previous stroke. In concordance with our study, ***Bugnicourt et al. (2013)*** reported that history of previous stroke was associated with NDAF in ischemic stroke patients.

Furthermore, there was a significant relation between the IHD in stroke

patients with and without AF. In our study, IHD was detected in 86.36 % and 43.33% of stroke patients with and without AF respectively. Also, we found that there is a significant relation between IHD in stroke patients with and without PAF. IHD was detected in 72.73 % and 14 34.15% of stroke patients with and without PAF respectively.

These results were in agreement with ***Bugnicourt et al. (2013)*** who mentioned that previous coronary artery disease was associated with NDAF in stroke patients. Also, ***Kallmünzer et al. (2014)*** revealed that structural heart disease (IHD) were occurred more frequently among stroke patients with cardiac arrhythmias mainly AF.

Throughout our study, we got three measurements:

- Measurements by health care professionals were with sensitivity 81.82, specificity 95.12, positive predictive value 81.82, and negative predictive value 95.12 with accuracy 92.31. This agreed with ***Kallmünzer et al. (2014)*** who found that sensitivity was 96.5, specificity 94, positive predictive value 82.1 and negative predictive value 98.9 with accuracy 88.7.
- Measurements by patients themselves were with sensitivity 42.86, specificity 53.57, positive predictive value 18.75, and negative predictive value 78.95 with accuracy 51.43. Number of participating patients was only 35 because the rest of patients failed to continue in our tutorial. This agreed with ***Kallmünzer et al. (2014)*** who found that sensitivity was 54.1, specificity 96.2, positive predictive value 76.9 and negative predictive value 90 with accuracy 63.5.
- Measurements by the relatives of the patients were with sensitivity 55.56, specificity 72.22, positive predictive value 33.33, and negative predictive value 86.67 with accuracy 68.89. Number of patients was 45 because the rest of realtives failed to continue in our tutorial. This agreed with ***Kallmünzer et al. (2014)*** who stated that sensitivity was 76.5, specificity 92.9, positive predictive value 78.8 and negative predictive value 91.9 with accuracy 77.6.

CONCLUSION

- Early diagnosis of AF facilitates the detection of patients who should receive oral anticoagulant treatment so decrease risk of stroke.
- The low educational level of the patients and their relatives made their training difficult and their peripheral pulse measurements were less accurate than that of health care professionals.
- Patients with diabetes, hypertension, IHD or history of previous stroke are at increased risk of AF or PAF.
- All patients with AF were PAF at first and then converted to established AF. So, early detection and management of PAF reduces the occurrence of established AF.

RECOMMENDATIONS

- Prolonged continuous cardiac monitoring after acute ischemic stroke are recommended at least for 7-10 days for diagnosis of silent AF or PAF.

- Good training of patients or their relatives to measure peripheral pulse make their measurements more accurate and can be used as a powerful tool to select the patients in need for further cardiological monitoring.
- We recommend the use of ambulatory holter monitoring, mobile cardiac outpatient telemetry, external loop recording or implantable loop recording to get results that are more accurate.
- More studies should be done with large numbers of patients.

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فتحى محمود عفيفى- خالد محمد صبح -محمدعبد الهادى مرسى* - حسين عوض الغريب - محروس إبراهيم صديق - أحمد أشرف أحمد عبد الرحيم

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خلفية البحث: تشكل الجلطة الدماغية الإحتشائية حوالى **85%** من السكتات الدماغية وتكون نتيجة الإنسداد الحاد لإحدى الأوعية الدموية الدماغية. تعتبر الذبذبة الأذينية من أشهر أسباب إضطراب ضربات القلب التي تصيب **1%** من العالم ، وتعد من أهم أسباب الجلطة الدماغية خاصة في كبارالسن . تشكل السدادة الوعائية ثلثى أسباب الجلطة المعروفة ولكن فشلت الفحوصات فى معرفة مصدرها, ومن أهم أسبابها الذبذبة الأذينية الغير مشخصة وذلك لأن الذبذبة الأذينية الإنتيابية من أهم العوامل الخطيرة لحدوث الجلطة الدماغية.

الهدف من البحث:تحديد الإرتجاف الأذينى المؤقت بعد حدوث السكتة الدماغية وبالتالي محاولة منع حدوث سكتة دماغية أخرى , ومعرفة مدى دقة تحديد الإرتجاف الأذينى المؤقت عن طريق قياس النبض بواسطة الإحساس بشريا ن الرسغ كطريقة بسيبطة و سهلة.

المرضى وطرق البحث:أجريت هذه الدراسة على 52 مريضا من المرضى ذوي الجلطات المخية المحجوزين فى قسم الأمراض العصبية بكلية طب الأزهر خلال الفترة ما بين نوفمبر 2014 ويونيو 2015، وتم إستبعاد المرضى ذوى منظم ضربات القلب الصناعى. وقد تم لكل المرضى أخذ التاريخ المرضى بالتفصيل و فحص اكلينيكى شامل,وصورة دم كاملة،و نسبة الدهون بالدم,وأشعة مقطعية على المخ ورسم قلب وأشعة تليفزيونية على القلب.وقد أخضع جميع المرضى وأقاربهم لبرنامج تدريبى من أجل قياس النبض عن طريق الشريان الرسغى بهدف رفع قدرتهم على تحديد عدم إنتظام ضربات القلب فى الإرتجاف الأذينى وتحديد معدل نبضات القلب.

النتائج :

- إرتفاع ضغط الدم ومرض البول السكري يعدان من أهم الدلائل لتشخيص الذبذبة الأذينية الحديثة في مرضى الجلطات الدماغية.
- حدوث الإرتجاف الأذيني أو الإرتجاف الأذيني المؤقت بعد السكتة الدماغية أكثر حدوثا لدى المرضى ذوى إرتفاع ضغط الدم ومرضى السكري وغير المدخنين و كبار السن والإناث.
- إنخفاض مستوى التعليم للمرضى وأقاربهم كان سببا في صعوبة تعلم الفحص والحصول على نتائج دقيقة وإن كانت نسبة دقة النتائج تعتبر مقبولة.

<u>التوصيات</u>:

- إطالة مدة جهاز متابعة ضربات القلب لمدة 7 -10 أيام بعد حدوث الجلطة لأنها تزيد من تشخيص الذبذبة الأذينبة الغير مكتشفه.
- التعليم المستمر للمرضي و الأقارب لإمكانية تحديد عدم إنتظام ضربات القلب ولفترات أطول قد يأتي بنتائج أكثر دقة.
- إجراء دراسات أخرى علي عدد أكبر من المرضى قد يأتي بنتائج أفضل.