

Transient Ischemic Attack in Cerebrovascular Accidents

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Summary: In Seventy Two patients admitted in Chengalpet Medical College & Hospital in General Medicine ward during the period January 2015 to October 2015 with acute Cerebrovascular accident, history of TIA was present in 27% of thrombotic stroke and 7% of cardio embolic strokes but was absent in all patients with ICH. 92% of the TIAs lasted less than an hour. Most of the patients developed stroke within two months of the first TIA.

Aim of the Study: To correlate Transient Ischemic Attack and Cerebrovascular accidents.

Keywords : Cerebrovascular accident – Transient Ischemic Attack.

I. Introduction

TIAs are episodes of temporary and focal cerebral dysfunction of vascular origin, rapid in onset, variable in duration, commonly lasting from 2 to 15 minutes but occasionally lasting as long as 24 hours (Milliken and Mc Dowell¹ 1978). It has been observed that about 25% to 40% of the patients with TIA will eventually develop cerebral infarction in the subsequent five years period (Milliken and Mc Dowell 1978). While TIAs are uncommon in ICH it was reported to be present in about 9% to 10% of ischemic infarction (Davies² et al 1987) Recently the arbitrary duration of TIA as 24 hours is questioned as most of the TIAs tend to last less than an hour (Levy³ 1988).

II. Material And Methods

In Seventy Two acute Cerebrovascular accident patients (stroke of less than one week) who were admitted in the General Medicine ward were studied. A detailed history of TIA including the time of occurrence, duration, clinical manifestation, recurrence and the latent period between the first TIA and a stroke were studied. A few patients who were unable to give history of loss of consciousness were included in the TIA absent group. CT scan of brain was done in all the 72 patients immediately after admission and the type of stroke (ischemic or hemorrhagic) was noted. Echocardiogram was done in all the ischemic infarction patients.

III. Results

The Total number of acute stroke patients studied was 72 which included thrombotic infarction (40) cerebral embolism of cardiac origin (14) and intracerebral haemorrhage (18). History of TIA was present in 27% of thrombotic infarction, 7% of cerebral embolism of cardiac origin. The number and duration of each TIA in thrombotic infarction is given in tables I and II. Single TIA was present in 4 and recurrent TIAs in 10 of 14 patients. Stereotypic recurrence was present in 5 of the patients with recurrent TIA. The clinical manifestation of each TIA in the thrombotic infarction is given in Table III. The latent period between the first TIA and the stroke is given in table IV. In the embolism group two patients (7.1%) had TIA. Both of them had single TIA, in the first, transient hemiparesis lasting for one hour occurring one week prior to stroke and in the second, transient unsteadiness and confusion for five minutes occurring four hours prior to the stroke was present.

Table I: Number Of Tias In Thrombotic Infarction Prior To Stroke

No of TIAs	No of Patients	
1	4	28.5%
2	3	21.42%
3	1	7.14%
4	2	14.28%
5	2	14.28%
6	0	-
10	1	7.14%
12	1	7.14%
	14	

Table II: Duration Of Tia In Thrombotic Infarction (Total No 53)

No of TIAs	No of TIA	
1-5 Min	25	47.2%

10 Min	9	17%
15 Min	11	20.7%
30 Min	3	5.7%
1Hours	2	3.8%
2Hours	1	1.9%
4Hours	1	1.9%
4Hours	1	1.9%

IV. Discussion

In this series of 72 patients with acute Cerebrovascular accident history of TIA was not present in any one of the 18 patients with intracerebral haemorrhage. Hence in a patient with acute Cerebrovascular accident if there is a history of TIA it strongly favors ischaemic infarction and almost rules out intracerebral haemorrhage. However it must be remembered that very rarely transient neurological deficit is known to occur in chronic subdural hygroma (Dhanaraj⁴ et al 1987). The incidence of TIA in all types of stroke is about 10% (wolf⁵ et al 1983) . However carotid strokes with extra-cranial carotid artery stenosis are known to have as high as 50% to 75% including of TIA (Mohr⁶ et al 1978). In the present series the incidence of TIA in thrombotic infarction alone was 27.5%. In cerebral embolism of carotid origin it was 7.1% . Both put together it was 24%. Hence even in the Indian population the incidence of TIA is high. Hence it should be possible to prevent stroke at the TIA level itself in a significant percentage of potential thrombotic stroke patients. In this series , when the patients had their first TIA most of them did not consult a physician as they were not aware of the seriousness of the transient symptoms. The public and the family physicians may be educated about the importance of these symptoms since major catastrophes may be avoided by appropriate therapeutic measures. Pr.Dhanraj and Pr. Velmurugendran⁷ et al Studied relation between Transient Ischemic Attack and Stroke.

Table III: Clinical Manifestation Of Tia

1	Weakness and numbness of one UL	17	32.1%
2	Weakness and numbness of one UL and LL	12	22.6%
3	Weakness of LL	7	13.2%
4	Numbness of one UL and LL	6	11.3%
5	Weakness of UL	5	9.4%
6	Speech Disturbance	2	3.8%
7	Numbness of One LL	2	3.8%
8	Weakness of one thumb and index finger	1	1.9%
9	Weakness of and numbness of one UL and LL UL – Upper Limb LL- Lower Limb	1	1.9%

Table IV: Latency Between The First Tia And Stroke

Latency	Number	Percentage
7 days	5	35.7%
8-14 days	2	14.3%
15-30 days	2	14.3%
1-2months	3	21.4%
2years	1	7.1%
5 years	1	7.1%

In general it is said that TIAs are known to last for upto 24 hours. Recently the validity of this duration is questioned by some authors Acheson and Hutchinson⁸ (1964 suggested once hour as the differentiating period between TIAs and stroke. In carotid artery disease, TIAs presenting as transient monocular blindness is known to last less than 15 minutes in most of the patients (Mohr et al 1986). Levy (1988) in his series observed that 60% of TIAs lasted less than 60 minutes. In the present series the duration of Tia was within 5 minutes in 46.8% , 10 minutes in 65.8% , 15 minutes in 73.4% , 30 minutes in 86% and one hour in 92.3%. Hence the authors also suggest that while defining the duration of TIA it may be changed to one hour rather than 24 hours.

In the Framingham study, following the first TIA, brain infarction occurred in two thirds of the patients in the first six months and in Rochester , Minnesota, the greatest risk of stroke was within the first month (whisant⁹ et al 1973 wolf et al 1983). In the present study 50% developed stroke within a week of first TIA (Which includes 27.3% who developed within 24 hours) 13.6% developed stroke between 1-2 weeks, 13.6% between 15-30 days and 13.6% between 1-2 months. The remaining 9% developed stroke after two years. This suggest that the potential risk period of developing stroke after the first TIA is two months. The maximal being within one week. Thus every patient who gives history of TIA must be managed carefully for a minimum period of two months as this periods seems to be a highly vulnerable period.

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