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Original Research Paper

Clinical Study of Stroke in Young Patients

Medical Science

KEYWORDS : STROKE, YOUNG PATIENTS

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ABSTRACT

•Overall etiology is varied in cases of young stroke. The major causes do not differ from those in the older counterparts; it is only the relative frequency of causes, which is not same.

•Haemorhagic stroke is less prevalent in young patients & hypertension is the lead cause of the same.

•Our study increments known vascular factors in the pathogenesis of ischemic stroke in young patients, raising the possibilities that accelerated atherosclerosis is the underlying substrate, rather than rarer etiologies found in these patients.

•Our finding suggest that smoking cessation, identification and treatment of elevated blood pressure, diabetes and dyslipidemia are critical measures for preventing ischemic stroke in young.

INTRODUCTION

Stroke is a major public health problem. According to WHO, stroke has caused about 5.54 million deaths worldwide in 1999 with two-thirds of these deaths occurring in less developed countries. Stroke is also the most common neurological condition causing long-term disability and has enormous emotional and socioeconomic consequences in patients, their families and health services. The latest available estimates from Indian Council of Medical Research (ICMR) indicate that in 2004 there were 930,985 cases of stroke in India with 639,455 deaths and 6.4 million disability adjusted life years (DALY) lost. According to the estimates by the National Commission on Macroeconomics and Health, India, there will be 1.67 million stroke cases in India in 2015.

Age has the strongest association with the incidence of stroke. The age-specific incidence of stroke increases progressively in increasing age. In an editorial on the topic in 1997, Prasad had commented that Indians as a whole are probably more susceptible to stroke than people in industrialized countries and that the magnitude of increased susceptibility is probably similar for the young and older adults.

The prognosis for stroke in young is better than that for older adults with a comparable lesion. For patients who survive with venous sinus thrombosis, the prognosis is usually excellent with less risk of persistent neurological deficit than that of the patients with cerebral infarction from arterial lesions. Treatment of stroke in young depends on its cause. The general principle of treatment remains the same as in older adults outlined in the National Guidelines for Management of Stroke in India. Evidence for an ischemic penumbra in humans is emerging and a therapeutic window for treatment is being defined. Intravenous administration of recombinant tissue plasminogen activator (rtPA) remains a beneficial intervention for emergency treatment of stroke. Intra-arterial administration of thrombolytic agents and mechanical interventions show promise. Newer and better radiological investigations are now available which help the physician for early diagnosis and hence in early thrombolysis.

METHODS, MATERIALS AND PROTOCOLS OF THE STUDY

50 cases of young CV stroke between ages 15-45 years admitted to our hospital during year May 2014 to May 2016 were studied.

Each patient was interrogated in detail regarding the history including focal deficit, headache, vomiting, convulsion, fever, sensorium, speech and vision disturbances and that for risk factors like diabetes mellitus, hypertension, smoking, alcoholism, tobacco use, cardiac disease, oral contraceptive pills, and hyperlipidemias.

A thorough clinical examination starting with examination of habitus of the patient and then with particular attention to central nervous system including, focal neurological deficit, speech, cranial nerve involvement, motor system, sensory system, bowel-bladder involvement, neck rigidity, cerebellar signs and other systems was done. A provision diagnosis was suspected on history and clinical examination. Provisional clinical diagnosis was put and clinical distinction between thrombosis, embolism and hemorrhage was done.

Following investigation were carried out in all patients; complete blood count with platelet count, ESR, Prothrombin time, Blood glucose, S. electrolytes, Renal function test, Lipid profile, HIV, Electrocardiogram, Chest x ray, 2DEcho, Fundus, CT/MRI brain. Special investigations like Carotid doppler, S.homocysteine, S.VDRL, S.proteinC/S, S.ANA, S.antithrombin 3, MR/CT angio/venography and CSF were carried out in selected patients.

CT/MRI findings were correlated with clinical findings. Final diagnosis was put and etiology for the pathologic process was suspected using guidelines from standard textbooks. Patients were treated with best available therapy and outcome during hospital stay was noted.

OBSERVATION AND DISCUSSION

GENDER DISTRIBUTION

Gender	Number of patients	Percentage of patients
Male	30	60
Female	20	40

AGE DISTRIBUTION

Age group in years	Males (n=30)	Females (n=20)	Total number of patients (n=50)	Percentage of patients
<=20	3	3	6	12
21-30	3	10	13	26
31-40	19	4	23	46
41-45	5	3	8	16

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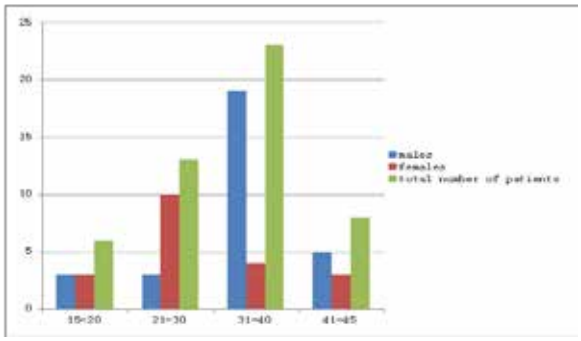
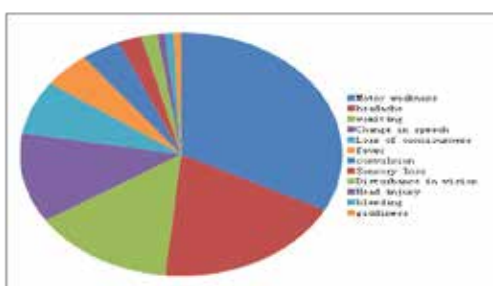


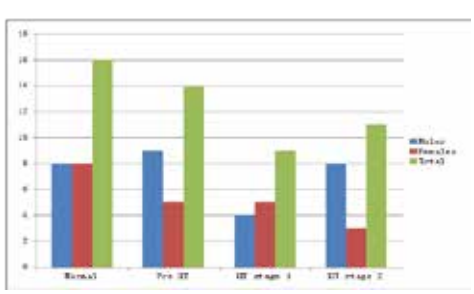
CLINICAL FEATURES

Clinical features	Number of patients	Percentage of patients
Motor weakness	41	82
headache	24	48
vomiting	18	36
Change in speech	15	30
Loss of conciousness	9	18
fever	6	12
convulsion	5	10
Sensory loss	3	6
Disturbance in vision	2	4
Head injury	1	2
bleeding	1	2
giddiness	1	2



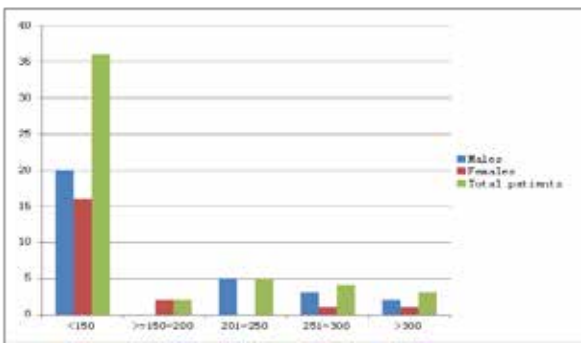
BLOOD PRESSURE

hypertension	gender	Total patients	% of patients
Normal (<=120/<=80)	Males (n=30)	8	32
	Females (n=20)	8	
Prehypertensive (>120-139/80-89)	Males (n=30)	9	28
	Females (n=20)	5	
HT stage 1 (140-159/90-99)	Males (n=30)	4	18
	Females (n=20)	5	
HT stage 2 (>=160/>=100)	Males (n=30)	8	22
	Females (n=20)	9	
Total		50	100



TRIGLYCERIDE LEVEL

Triglyceride level (in mg/dl)	Males (n=30)	Females (n=20)	Number of patients	Percentage of patients
<150	20	16	36	72
>=150-200	0	2	2	4
201-250	5	0	5	10
251-300	3	1	4	8
>300	2	1	3	6



FREQUENCY OF VARIOUS RISK FACTORS IN STROKE

Risk factor	Total patients (n=50)	% of patients
Hypertension	20	40 %
smoking	16	32 %
hypertriglyceridemia	14	28 %
Pre hypertension	14	28 %
Tobacco chewing	13	26 %
TG/HDL	13	26 %
obesity	10	20 %
Alcohol addiction	8	16 %
Diabetes	7	14 %
RHD	7	14 %
Homocysteinemia	7	14 %
Atrial fibrillation	5	10 %
Drugs	2	4 %

Hypertension (40%) was the most common risk factor, followed by smoking (32%), Hypertriglyceridemia (28%), Prehypertension (28%) and tobacco addiction (26%) with TG/HDL ratio (26%) forming the most common risk factor associated with young stroke.

CONCLUSION

- Overall etiology is varied in cases of young stroke. Of course, the major causes do not differ from those in the older counterparts; it is only the relative frequency of causes, which is not same.
- Hemorrhagic stroke is less prevalent in young patients and hypertension is the lead cause of the same.
- Our study increments known vascular factors in the pathogenesis of ischemic stroke in young patients, raising the possibilities that accelerated atherosclerosis is the underlying substrate, rather than rarer etiologies found in these pts.
- Our findings suggest that smoking cessation, identification and treatment of elevated blood pressure, diabetes and dyslipidemia are critical measures for preventing ischemic stroke in young.

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