CIRCADIAN RHYTHM DISRUPTION IN ISCHEMIC STROKE: CHRONOTYPE PATTERNS COMPARED TO AGE-MATCHED HEALTHY VOLUNTEERS

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BACKGROUND

Stroke remains one of the leading cause of mortality and long-term and permanent disability world wide. Studies have shown that stroke destabilizes the diurnal rhythm. Whether these disruptions are a cause or consequence of stroke is not yet fully understood . On the other hand, the stroke itself can affect the circadian system. hence the bidirectional impact of circadian rhythm dysfunction in ischemic stroke remains unknown

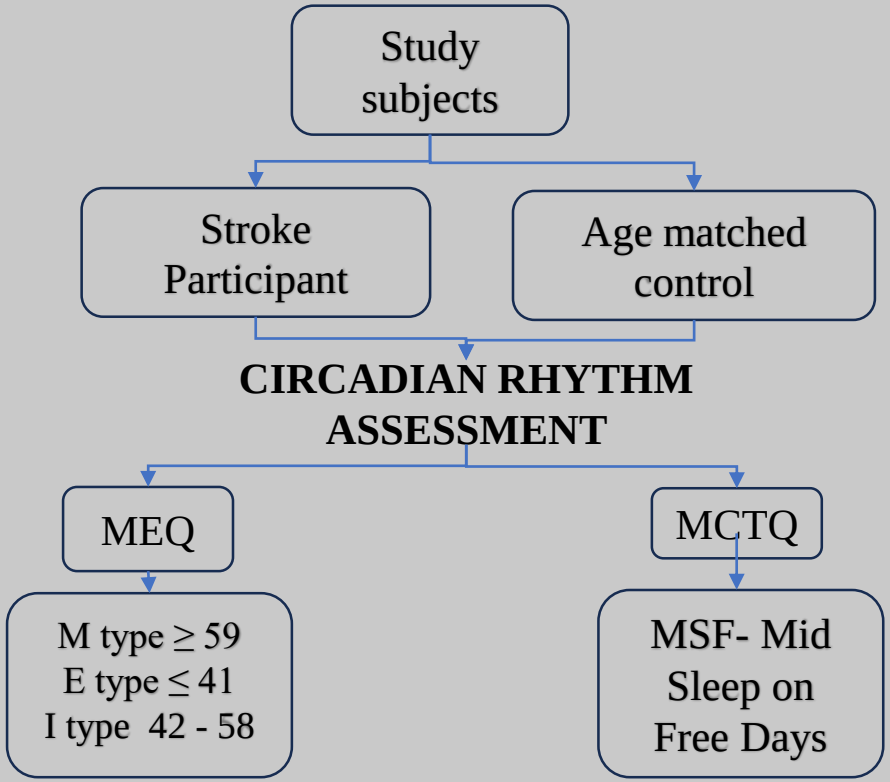
AIM

To assess circadian rhythm disturbances in ischemic stroke patients.

METHODOLOGY

- ✓ 51 ischemic stroke patients & 51 controls (Nov 2023–Aug 2025).
- ✓ Written consent, inclusion/exclusion applied.
- ✓ Chronotype via MCTQ & MEQ (pre-stroke, 2wk, 6wk).

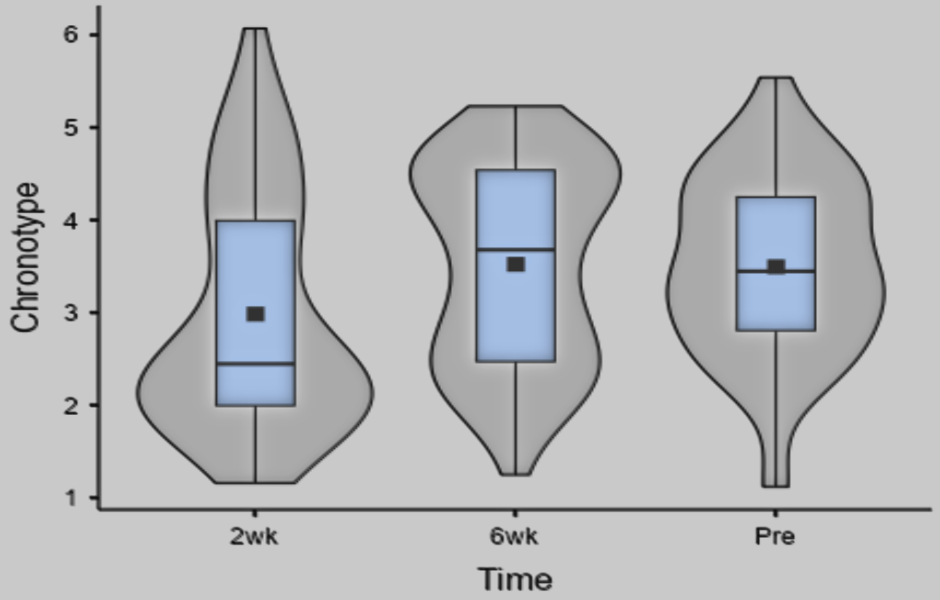
CLINICAL DETAILS	
Symptom onset (Mean ± SD)	10 am (5.28 hrs)
NIHSS AT PRESENTATION (MEDIAN , IQR)	5(4,7)
NIHSS AT RECRUITMENT (MEDIAN)	4(3,5)
mRS AT PRESENTATION (MEDIAN)	2(1.5,2)
mRS AT RECRUITMENT (MEDIAN)	2(1,2)
TOAST(%)	5(35.3%)
	3(31.4%)
	1 (23.5%)



VARIABLES	Ischemic Stroke patients (n =51)	Healthy controls(n= 51)
AGE (Mean ± SD)	53.1(10.6)	51.1(11.2)
Sex (males %)	72%(n =51)	39 %(n =51)
SOCIOECONOMIC CLASS(%)	Lower middle class(41.2 %)	Lower middle class (41.2 %)
	Upper middle class (37.3%)	Upper middle class (37.3%)
	Upper lower class(21.6%)	Upper lower class(21.6%)
OCCUPATION(%)	Skilled workers / market sales(33.3%) Elementary occupations(25.5%) Craft & related trade workers(17.6%) Agricultural & fishery workers(17.6%)	Elementary occupations(41.2%) Agricultural & fishery workers(25.5%) Skilled workers / market sales(11.8%)
RISK FACTORS (%)		
Diabetes Mellitus	47.1	13.7
Hypertension	72.5	31.4
Dyslipidemia	35.3	15.7
Smoking	Current- 47.1% Past - 23.5% Never - 29.4%	Current- 27.5% Past - 7.8% Never - 64.7%
Alcohol	Current- 39.2% Past - 35.3% Never - 25.5%	Current- 19.6% Past - 7.8% Never - 72.5%

RESULTS

- ✓ Demographics: Male 72% (stroke), Female 61% (controls).
- ✓ Pre-stroke: Stroke = Intermediate (3.5±0.97), Controls = Morning (2.9±0.94), Significant difference p=0.003.
- ✓ Post-stroke shift: Significant change between 2 & 6 weeks (p=0.017).
- ✓ At 6 weeks: 25.5% (n=13) advanced, 17.6% (n=9) delayed.
- ✓ Light exposure ≤1h in 76.5% at 2 weeks, partial recovery at 6 weeks
- ✓ Contributing factors -Age, gender, occupation ,Lesion site ,Light exposure, diet, addictions, intrinsic factors.



CONCLUSION

- ✓ Stroke significantly impacts circadian rhythm
- ✓ Monitoring chronotype may help in predicting recovery and guiding interventions.
- ✓ Future studies should integrate **site of lesion** with circadian changes for deeper insights