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Case Study

INTEGRATED TREATMENT APPROACH IN HEMIPLEGIC STROKE PATIENT: A CASE STUDY

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ABSTRACT

Hemiplegic stroke is one of the major prevalent mortality in many countries including India. In hemiplegic stroke spasticity, and muscle atrophy results in the inability to move certain muscles. Most post-stroke complications like inability and shoulder pain are a major concern for therapeutic interventions. Recent advances have been made in the interdisciplinary approach of rehabilitation, artificial intelligence, brain-computer interface, and much more mainly targeting post-stroke complications. In the present case report study 55-year-old male addicted to tobacco, altered HBA1c, elevated neutrophils, erythrocyte sedimentation rate, and C-reactive protein and CT scan report of mild cerebral atrophy suggestive of hemiplegic stroke. The patient was admitted on a stretcher with no sensation in his left hand and *Vaksanga* (impaired speech). After receiving the patient and family member's consent the integrated treatment was initiated. After 15 days of integrated treatment including T-AYU-HM Premium, significant improvement in the patient's condition was noticed. The patient recovered from the impaired mobility of the left hand and remarkable improvement in slurred speech. This confirms that the intervention of Ayurvedic medicine in post-stroke management and prevention of stroke might play a crucial role. More such kinds of interventional case studies or trials should be warranted to justify the same.

INTRODUCTION

Hemiplegic's clinical presentation is consistent with *Pakshaghata*, according to Ayurveda. Though the disease is classified as a *Vata Vyadhi* (set of disease caused by vitiated *Vata)*, the treatment protocol is framed on the basis of its associated *Dosha* (that which can cause problems) status, that is, in an acute phase it is considered as *Vata-Kaphaja* or *Vata-Pittaja*; whereas in chronic phase, it appears as a pure *Vataja* condition.[1-2] The name hemiplegia itself suggests its meaning in Greek i.e., 'hemi'- half and 'plegia'- loss of function. Stroke is considered the foremost cause of neural disabilities which may be hemorrhagic and infarction. Stroke is one of the reasons for mortality in India. The other factors which might be responsible for hemiplegia include tumor, thrombus, or lesion (space-occupying).[3] In hemiplegic stroke, there is destruction in the corticospinal tract of one hemisphere which leads to loss of motor, sensory, and brain cognitive function. The symptoms observed in the patient with hemiplegic stroke are diminished postural balance control, slurred speech, asymmetric weight distribution, and the patient might not be able to recognize own body part that is affected.[4,5] The hemiplegic shoulder pain induced after stroke in the patient is due to major dysfunctions which include shoulder subluxation, spasticity, contractures, and rotator cuff abnormalities.[6] To assess the brain motor activity of hemiplegic stroke patients neuroimaging tools i.e., functional Positron Emission Tomography (PET) and functional Magnetic Resonance Imaging (MRI) are utilized as standard.[7] Hemiplegia rehabilitation options include a wide range of intervention strategies. In addition to other methods,

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PNF, NDT, Roods approach, speech therapy, robotic devices, balancing training, and Kinesio taping are successful in improving the patient's condition.[7] Ayurvedic interventions are also considered useful if proper treatment is given at right time to the right patients.[7]

Ayurvedic medicine is frequently regarded as a potent means of patient revival and recovery, particularly in cases of chronic hemiplegia and stroke. As a result, the treatment strategy is planned based on the patient's current stage. Acute or chronic hemiplegia, contributes to a major portion of patients attending Ayurvedic outpatient departments and inpatient departments. An integrated treatment approach might be preferred based on disease severity, the cost-effectiveness, and effects of the treatment. It might be a comprehensive point of view to consider for the betterment of patients. [1, 2]

Case Report

Site of Study: The case of a patient with Hemiplegic stroke was reported at Clinic, on 17 December 2021 for treatment. Before proceeding with this case study report, consent from patient and his family members received to utilize the data for therapy and better well-being in the future.

Case Presentation: Mr. X age 55 years old is a diamond worker who has habituated to consuming tobacco and occasionally drinking alcoholic beverages. Mr. X was brought to the clinic on a stretcher with no sensation in his left hand, and impaired speech on 17th December 2021. Considering the patient's condition with the clinical investigation of CT scan and laboratory analysis as mentioned in Table 1, suggested the patient was suffering from hemiplegia. The Ayurvedic and Allopathic therapy initiated with the integrated approach described in Tables 2, 3, and 4.

Table 1: Laboratory Investigation

Parameters	17/12/2021	23/12/2021	1/02/22
Hemoglogin (gm/dl)	14.6	15.6	11.62
RBC (million per cmm)	5.79	6.33	5.15
WBC (per cmm)	14,300	12,300	8410
Platelet (per cmm)	2,94,000	3,97,000	367000
MCHC (gm/dl)	32.9	32.3	32.54
MCH (pg/cell)	25.2	24.6	22.56
MCV (fl)	76.7	76.6	69.32
PCV (%)	44.4	48.5	35.7
Neutophils (%)	82	74	56
Eosinophils (%)	03	05	05
Basophils (%)	00	00	00
Lymphocytes (%)	15	21	37
Monocytes (%)	00	00	02
ESR (mm/hr)	46	16	14
Bleeding time (minutes)	1.49	-	
Clotting time (minutes)	3.54	-	
Prothrombin Count (seconds) Control Test	14 14.49	-	
HbA1c (%)	6.75	-	
Mean Blood Glucose (mg/dl)	147.1	-	
Random Blood Sugar (mg/dl)	119	74	72
CRP test (mg/dl)	10.7	10	0.5
S. Creatinine (mg/dl)	-	1.3	1.02
S. Uric acid (mg/dl)	-	4.1	
S. Na+ (mmol/L)	-	135	146
S. K+ (mmol/L)	-	4.86	4.23
S. Cl^- (mmol/L)	-	105.5	97

Table 2: Integrated Treatment approach on 17/12/2021

Allopathy (Modern Medicine) treatment	Ayurvedic treatment
Inj. Lasix	Acupen 300mg 2BD
Inj. Dexa 4mg	T-D-Neuro 2BD
Ecosprin-AV Capsule OD	T-AYU-HM Premium 600mg BD
Zifi-200 BD	
Rekool D Capsule BD	
Inj. Nimesulide	
Lasix (Furosemide), Dexa (dexamethasone), Ecosprin AV (Atorvastatin 10mg + Aspirin 75mg), Zifi (Cefixime), Rekool D (Domperidone 30mg + Rabeprazole 20mg).	

Table 3: Integrated Treatment approach on 23/12/2021

Allopathy(Modern Medicine) treatment	Ayurvedic treatment
Inj. Heparin 40	Acupen 300mg 2BD
Nervup-OD Capsule	T-D-Neuro 2BD
Ecosprin-AV Capsule OD	T-AYU-HM Premium 600mg BD
Azithral-500 OD	
Rekool D Capsule BD	
Levosiz 10	
Levosiz (Levocetrizine), Nerveup OD(Methylcobalamin 1500mcg + Alpha Lipoic Acid 100mg + Vitamin B6 3mg + Folic Acid 1.5mg), Ecosprin AV(Atorvastatin 10mg + Aspirin 75mg), Azithral (Azithromycin).	

Table 4: Integrated Treatment approach on 03/01/2022

Allopathy (Modern Medicine) treatment	Ayurvedic treatment
Nervup-OD Capsule	T-D-Neuro 2BD
Ecosprin-AV Capsule OD	T-AYU-HM Premium 600mg BD
	Acupen 300mg 2BD

DISCUSSION

Hemiplegia is one of most serious physical effects of stroke victims (paralysis of the arm and leg on one side of the body). The CT scan report proposed that there was a large ill-defined hypodense area in right parieto-temporal region which defines probable acute/subacute infarction than edema. Mild mass effect observed on the right lateral ventricle without significant midline shift. Posterior cranial fossa structures including the 4th ventricle and rest of the cerebral parenchyma were found normal and hence, show no evidence of intracerebral hemorrhage. The Supratentorial ventricular system, cortical sulci, and basal cisterns were prominent, suggestive of mild cerebral atrophy.

The usual hospital stay for people having a mild stroke is about 3-5 days defined as a Barthel Index [BI] greater than 85 out of a possible 100, and the majority (60 percent) of these patients receive regular discharge to their homes.[8]

On examination of the laboratory parameters on 17/12/2021, earlier studies observed that hemoglobin, RBC, and Platelet counts were normal. Earlier Studies have reported that in patients with ischemic stroke, characteristics such as red blood cell count, mean corpuscular volume, and low diastolic blood pressure at admission are linked to post-stroke mortality. Factors like white blood cell count, hyponatremia, hyperglycemia, and systolic pressure may affect post-stroke mortality in mixed ischemic and hemorrhagic stroke patient.[9] White blood cells and neutrophils elevated while lymphocytes, and monocytes decreased indicated patient might suffer have infection. Even the inflammatory mediator like Erythrocyte Sedimentation Rate (E.S.R) was also high indicated the possible infection or inflammatory response. Considering all the CT-scan and laboratory reports of Mr. X, the case was appeared to be of Hemiplegic Stroke. The probable cause for stroke is the elevated and uncontrolled glucose level, elevated white blood cell count and inflammatory mediators like ESR and CRP level. Elevated serum creatinine and stroke drag attention independent of blood pressure. The ayurvedic and allopathic therapy was initiated as

integrated treatment approach on the same day of admission.

Factors like white blood cell count, hyponatremia, hyperglycemia, and systolic pressure may affect post-stroke The Lasix Injection was administered as it inhibits the Na+/k+/cl- transporter on the thick ascending loop of Henle and inhibits sodium and water reabsorption which is considered to provide Cerebro-protective action in stroke.[10] A Dexamethasone injection was also administered as it is a corticosteroid and reduces the inflammation and improves the condition of the patient.[11] Ecosprin-AV Capsule was given once a day from 17 December 2021 and continued till 3 January 2021 due to its anti-platelet effect that reduces the risk of reoccurrence of stroke.[11,12] The neutrophils level were increased and the reduction in lymphocytes and monocytes indicated the infection was improvised with Zifi-200. It was given to the patient from the day of admission till one-week BD as it is an antibiotic that reduces the infection after stroke and acts by inhibiting the cell wall synthesis in bacteria.[13-15] Rekool D capsule was prescribed BD preventing acid reflux. Nimesulide drug was injected which is an inhibitor of the COX -2 receptor in the brain and kidney that, gives the neuroprotective action in the ischemic brain injury.[16,17]

The Integrated treatment includes Acupen 300mg twice a day, TD-neuro twice a day, and T- AYU-HM Premium 600mg twice a day. Acupen showed a beneficial effect on inflammation and was continued till 3 January 2022. T- AYU-HM Premium 600mg was given as it is an immunomodulator and showed effective anti-oxidant properties for Red blood cells.[18-20] On 23 December 2021 Laboratory tests were again conducted which suggest there was an improvement in the patient's condition as described in Table 2.

Administration of Injection Heparin 40 injection was initiated from 24 December 2021, on alternate days till 30 December 2021 to prevent the formation of blood clots in the veins.[21] Tablet Nervup-OD is a vitamin capsule prescribed after examining the blood reports on 23 December 2021. Zifi-200 was discontinued and Tablet Azithral was prescribed for improvising bacterial infection if any persist by inhibiting the translation of mRNA and as it is an immunomodulator it will prevent the stroke reoccurrence.[22,23] Rekool D was continued till 3 January 2022. The patient complained about skin irritancy therefore Tablet Levosiz 10 and dove soap was also prescribed on 23 December, 2021 for the purpose to treat itching and moisturizing the skin respectively.

After 15 days of integrated treatment, significant improvement in the patient's condition was noticed. The patient recovered from the impaired mobility of the left hand and remarkable improvement in slurred speech. The patient was advised to continue the therapy with Ecosprin-AV capsule, Nervup-OD, Acupen BD, T-D-neuro, and T-AYU-HM Premium 600 mg tablets for the betterment and to prevent the Stroke condition. Adhering a treatment for a month of patient's hematological and clinical profile improved remarkably mentioned in Table 1.

CONCLUSION

The patient with Hemiplegic stroke recovered remarkably well with integrated treatment. This confirms that the intervention of Ayurvedic medicine in post-stroke management and prevention of stroke is played a crucial role. More such kinds of interventional case studies or trials should be warranted to justify the same. Many times silent complications progress in a patient remain unchecked or undiagnosed until such massive complicated problems arise. Therefore health-related awareness and assessment are also equally important in an ongoing stressful lifestyle. This reported case study opens a possible approach to the prevention of mortality and disabilities in a stroke patient with integrated treatment.

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REFERENCES

1. Illiyakperuma A. Vatika Prakarana/Deshiya Beheth Guli Kalka Potha. Panadura, Sri-Lanka: Moden Press, 1879. p. 23
2. E. R. H. S. S. Ediriweera1, M. S. S. Perera. Clinical study on the efficacy of Chandra Kalka with Mahadalu Anupanaya in the management of Pakshaghata (Hemiplegia). AYU 2011; 32(1):25-29
3. Rais A, Tanwar SR, Prasher B, Thakar AB. Journal of Ayurveda Case Reports. Journal of Ayurveda Case Reports. 2019; 2(2):9.
4. Mihara M, Miyai I, Hattori N, Hatakenaka M, Yagura H, Kawano T, Kubota K. Cortical control of postural balance in patients with hemiplegic stroke. Neuroreport. 2012; 23(5):314-9.
5. Aldwell CB, Wilson DJ, Braun RM. Evaluation and treatment of the upper extremity in the hemiplegic stroke patient. Clin Orthop Relat Res. 1969; 63: 69-93.
6. Murie-Fernández M, Iragui MC, Gnanakumar V, Meyer M, Foley N, Teasell R. Painful hemiplegic shoulder in stroke patients: causes and management. Neurología (English Edition). 2012; 27(4): 234-44.
7. Yadav V, Gera C, Yadav R. Evolution in hemiplegic management: a review. Int J Health Sci Res. 2018; 8(5):360-369.

8. Brenner I (2017) Stroke-Induced Hemiplegia: A Case Report Promoting Physical Activity at Home. Ann Nurs Pract 4(3): 1088.
9. Chen, CM., Lee, M., Yang, YH. et al. Association between Clinical and Laboratory Markers and 5-year Mortality among Patients with Stroke. Sci Rep 9, 11521 (2019). https://doi.org/10.1038/s41598-019-47975-y
10. Messerli FH, Grossman E, Lever AF. Do thiazide diuretics confer specific protection against strokes? Archives of internal medicine. 2003; 163(21):2557-60.
11. Desai A, Desai K, Desai H, Desai R, Desai C, Prajapati N, Patel D, Champaneri N, Purohit P. Integrated Treatment Approach In Post Vaccination Covid-19 Infected Patients: Case Reports, international journal of research and analytical reviews, 2022; 9(2): 238-42.
12. Maier JD, Levine SN. Hypercalcemia in the intensive care unit: a review of pathophysiology, diagnosis, and modern therapy. Journal of intensive care medicine. 2015; 30(5): 235-52.
13. Teasell R, Foley N, Salter K, Bhogal S, Jutai J, Speechley M. Evidence-based review of stroke rehabilitation: executive summary. Topics in stroke rehabilitation. 2009; 16(6): 463-88.
14. Filippi A, Bignamini AA, Sessa E, Samani F, Mazzaglia G. Secondary prevention of stroke in Italy: a cross-sectional survey in family practice. Stroke. 2003 Apr 1; 34(4): 1010-4.
15. Zheng F, Spreckelsen NV, Zhang X, Stavrinou P, Timmer M, Dohmen C, Goldbrunner R, Cao F, Zhang Q, Ran Q, Li G. Should preventive antibiotics be used in patients with acute stroke? A systematic review and meta-analysis of randomized controlled trials. PLoS One. 2017; 12(10): e0186607.
16. Candelario-Jalil E, Mhadu NH, González-Falcón A, García-Cabrera M, Muñoz E, León OS, Fiebich BL. Effects of the cyclooxygenase Candelario-Jalil E. Nimesulide as a promising neuroprotectant in brain ischemia: new experimental evidences. Pharmacological research. 2008; 57(4): 266-73.
17. Cox-2 inhibitor nimesulide on cerebral infarction and neurological deficits induced by permanent middle cerebral artery occlusion in the rat. Journal of neuroinflammation. 2005; 2(1): 1-1.
18. Desai A, Desai K, Desai H, Desai R, Desai C, Prajapati N, Patel D, Champaneri N, Purohit P, Case report on effect of T-AYU-HM Premium on Post vaccination Covid-19 infected patient, International Journal of Scientific Development and Research, 2022; 7(3): 70-72.
19. Desai A., Desai H., Desai C. , Desai R., Possible Role of T-AYU-HM Premium and Other Herbal Drug Treatments In Covid19, International Journal of Science & Engineering Development Research, 2020; 5(4), 272 - 274, doi: http://www.ijsdr.org/papers/IJSDR2004047.pdf
20. Desai A, Desai K, Desai H, Desai C, Desai R. Treatment of T-AYU-HM Premium and Onion Steam Vaporization on Possible Reinfection or Reactivation Covid-19 Patient: A Case Study. Int. J. Pharm. Sci. Drug Res. 2021; 13(1): 103-106. Doi:10.25004/IJPSDR.2021.130116
21. Kay R, Wong KS, Yu YL, Chan YW, Tsoi TH, Ahuja AT, Chan FL, Fong KY, Law CB, Wong A, Woo J. Low-molecular-weight heparin for the treatment of acute ischemic stroke. New England Journal of Medicine. 1995; 333(24): 1588-94.
22. Wang CC, Chao JK, Wang ML, Yang YP, Chien CS, Lai WY, Yang YC, Chang YH, Chou CL, Kao CL. Care for patients with stroke during the COVID-19 pandemic: physical therapy and rehabilitation suggestions for preventing secondary stroke. Journal of Stroke and Cerebrovascular Diseases. 2020; 29(11): 105182.
23. Amantea D, Certo M, Petrelli F, Tassorelli C, Micieli G, Corasaniti MT, Puccetti P, Fallarino F, Bagetta G. Azithromycin protects mice against ischemic stroke injury by promoting macrophage transition towards M2 phenotype. Experimental neurology. 2016; 275: 116-25.

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