Mirror therapy; an effective rehabilitative approach for post stroke spasticity

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Madam, stroke is the third most common cause of mortality and the first leading cause of disability in the developing and developed world.[1] It is elucidated as brain dysfunction and death due to poor blood flow caused by focal ischaemia and haemorrhage. Although, no large-scale epidemiological studies have been conducted to state the true incidence of stroke in Pakistan, an estimated annual incidence comes out 350,000 new cases every year.[2]

Stroke can result in numerous complications such as spastic paralysis, deep vein thrombosis (DVT), epileptic seizures and chest infections. Spasticity is one of the most prevalent, upper motor neuron-related, post-stroke complications affecting 20-40 percent of stroke survivors.[3] Functional limitations due to ataxia, gait disturbances, joint contractures, weakness, and pain severely affect the quality of life. The management of post-stroke spasticity requires a combination of pharmacological and surgical interventions together with certain rehabilitative therapies. Early administration of rehabilitation techniques leads to a better outcome at discharge and a relatively shorter length of stay.

Some of the rehabilitation measures currently prevalent in Pakistan include early mobilization, virtual reality, non-invasive brain stimulation, movement therapy induced by force and gait training.[4] Despite positive outcomes reported, mirror therapy, also known as visual illusion therapy has not been introduced and established in Pakistan yet. Mirror therapy, simple, inexpensive and, most importantly, patient-directed treatment uses the interaction of visuomotor and proprioceptive inputs to the patients. The reflection of the normal moving arm in the mirror looks like that of the affected arm and makes the person feel that both of his arms are moving simultaneously and with symmetry. The activation of the visual illusions in the cerebral hemisphere of the brain functions as the basis of a neurological mechanism for inducing brain plasticity. Mirror therapy is proven to be the most effective in improving the quality of lifeon stroke patients when compared with other rehabilitation technique by Thieme H, et al in his systemic review.[5] Mirror therapy when conducted for four weeks on two patients with chronic stroke led to the improvement in upper-extremity function, movement accuracy, and velocity. When applied to subacute stroke patients for four weeks, mirror therapy improved the motor recovery of their arms and independent activity scores.[6]

Neuroscience has progressed dramatically in the last few decades with methods of rehabilitation being influenced by changes in scientific architype but sadly Pakistan has still many obstacles to surmount. In Pakistan, prevalence of risk factors for stroke including hypertension, diabetes, dyslipidemia and smoking are alarmingly high while stroke rehabilitation is poorly developed, with only a scarce number of certified rehabilitation physicians. We suggest an awareness of the merging techniques in stroke rehabilitation and close collaboration among the neurologists and rehabilitation physicians. Further, additional studies should be conducted to compare mirror therapy with other conventionally applied or newly developed and effective therapies.

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