Intrathecal delivery of baclofen by a programmable pump for the treatment of severe spasticity of cerebral origin

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The authors present a patient with severe spasticity of cerebral origin treated with implantation of an intrathecal drug delivery system (baclofen).

A 53-year-old male patient presented with severe spastic quadriparesis of cerebral origin. Three and half year prior to admission, he suffered a fall down accident. Traumatic cerebellar hemorrhage and multiple brain contusions associated with fracture of the occipital bone developed. He had been cared conservatively in the ICU for 3 months. As a sequel of traumatic brain injury, spastic quadriparesis with aphasia sustained thereafter. He has been cared in bed-ridden state with L-tube, indwelling urinary catheter, and tracheostomy. Passive movements of all extremities, including stretching exercise and sitting were not possible due to severe hypertonia with spasms in all his extremity and neck. He was consulted for management of spasticity of cerebral origin.

After assessment of his spasticity, a trial, intrathecal injection of baclofen (50 ucg and 100 ucg) was quite effective in relieving hypertonia and spasticity of cerebral origin. Implantation of intrathecal drug delivery system (Synchromed II, Medtronic, MN, USA) was performed with the tip of catheter placed at the level of T11. The dose of intrathecal baclofen was slowly escalated according to the reduction of spasticity and side effect (60 ucg/day). The Asworth score for rigidity decreased from 5 to 3 (UEx) and 5 to 4 (LEx). The spasm frequency score decreased from 4.6 to 0.5. The response to verbal command became more brisk. Resistance to passive stretch in his extremities decreased markedly. Passive ROM exercise could be started after 1 week after implantation of intrathecal baclofen delivery system. Caregiver burden decreased significantly by allowing easy transfers and provision of care, decreasing assistance.

Intrathecal drug delivery of baclofen is effective treatment of severe rigidity of cerebral origin in selected patient following traumatic brain injury.