Gunn Intramuscular Stimulation (IMS)
-Beyond Neuropathic Pain

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Presented at Fourth Annual UBC – Chan Gunn Lecture

University of British Columbia, Vancouver

October 22nd, 2015

Gunn Intramuscular Stimulation (IMS) –- Beyond Neuropathic Pain

Gunn Intramuscular Stimulation (IMS), invented by Professor C. Chan Gunn of Vancouver, is a Systematic form of Acupuncture based on neurophysiology and anatomy.

The therapeutic success by applying Gunn IMS in the treatment of Neuropathic Pain is well established worldwide.

There is scientific evidence that Neuropathy causes Shorten Muscle Syndrome resulting in various musculoskeletal disorders. The nervous system has proven to modulate the immunological response by the Inflammatory Reflex via the Cholinergic Anti – Inflammatory Pathway.

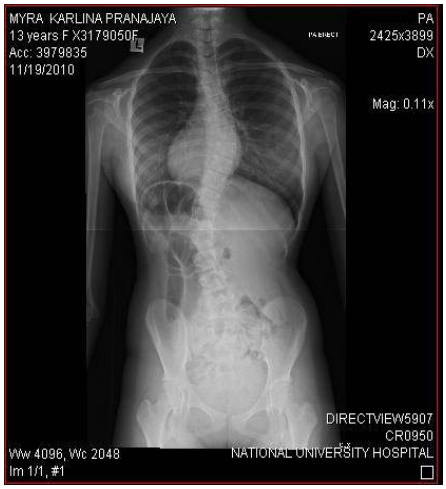
I report four cases of clinical conditions related to Neuropathy, Shorten Muscle Syndrome, Immunological Disorders and Neurodegenerative Disease responded to Gunn IMS.

Professor C. Chan Gunn

Case 1: Adolescent Idiopathic Scoliosis (AIS)

Patient:

Miss M was a 12 years old girl from Indonesia, noted to have worsening of scoliosis since the age of 11 years old. She was under the care of National University Hospital (NUH), Singapore.



In May 2008, the Cobb's Angle was 27°. By June 2009, the Cobb's Angle has increased to 39° within a year. Treatment was with braces only. She consulted me on June 26th, 2009 and had her 1st Gunn IMS treatment.

Method:

IMS of the paraspinal muscles from the lower cervical to lumbosacral region, rhomboids, quadratus lumborum, iliocostalis, longissimus and multifidus forthnightly or monthly whenever the patient could make it from indonesia.

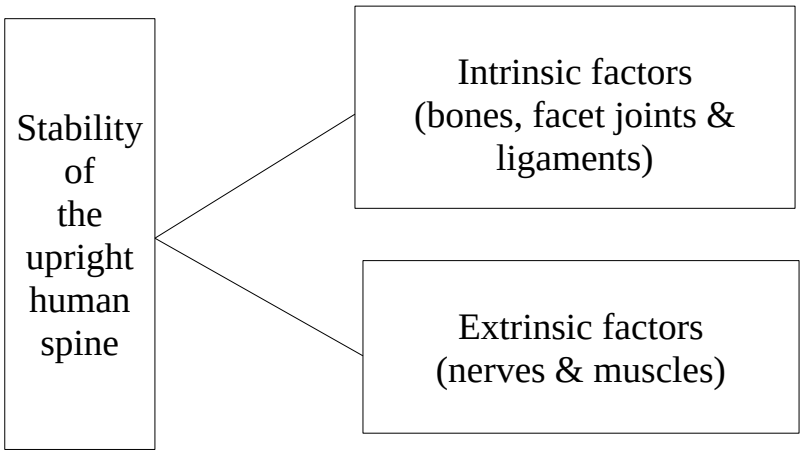
Result:

Date	Age	Height	Tx	Cobb Angle	Progress (Cobb's Angle)
May '08	11 yrs old		Bracing only	27°	(NUH Singapore)
27/6/09	12 yrs 2 months	150.5 cm	1st IMS + Bracing	39°	+ 12° within 1 year
12/05/10	13 yrs old	152.5 cm	11th IMS + Bracing	37°	- 2° in 10.5 months after 11x IMS.
14/06/11	14 yrs 2 months	154.5 cm	20th IMS + Bracing		Reduced further and no spinal surgery needed
No IMS treatment after 14/6/2011					
June '13	16 yrs 2 months	156cm	Bracing only	46°	Increased after stopping IMS treatment

Gunn IMS slowed down the increase of the Cobb's Angle in the initial treatments. After 11 Gunn IMS, the Cobb's Angle reduced from 39° to 37°. Patient continued to have another 9 Gunn IMS sessions. She was told by the Professor of NUH, Singapore that the Cobb's Angle had reduced significantly and no corrective spinal surgery was needed. She did not turn up for further treatment after 20 Gunn IMS sessions. The last Gunn IMS session was on June 14th, 2011, when she was 14 years and 2 months old.

Discussion:

AIS manifests during the stage of growing spine. The stability of the upright human spine depends on the intrinsic factors (bones, facet joints and ligaments) and extrinsic factors (nerves and muscles).



Neuropathy causes shorten Muscle Syndrome resulting in imbalance of paraspinal muscles. The shorten spinal muscle prevents the spine from growing longitudinally. It pulls the growing spine laterally and increases the curvature of the spine resulting in scoliosis. Gunn IMS lengthen the muscles and heals the nerve by various neurophysiological mechanisms. Gunn IMS is effective in treating neuromuscular scoliosis, but treatment has to be continued until the spine is fully mature to avoid relapse.

Neuropathy

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Shortened muscle syndrome

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Imbalance of the paraspinal muscles

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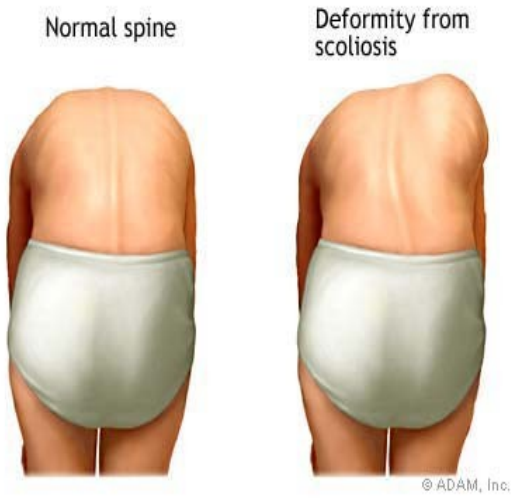
Scoliosis



Case 2: Thyroid Associated Orbitopathy (TAO)

Patient:

Mr. TL was a 53 years old gentleman presented with a swollen, bulging and inflammed left eye for almost 9 months. The range of movements of the left eye was very much restricted and he complained of double vision.

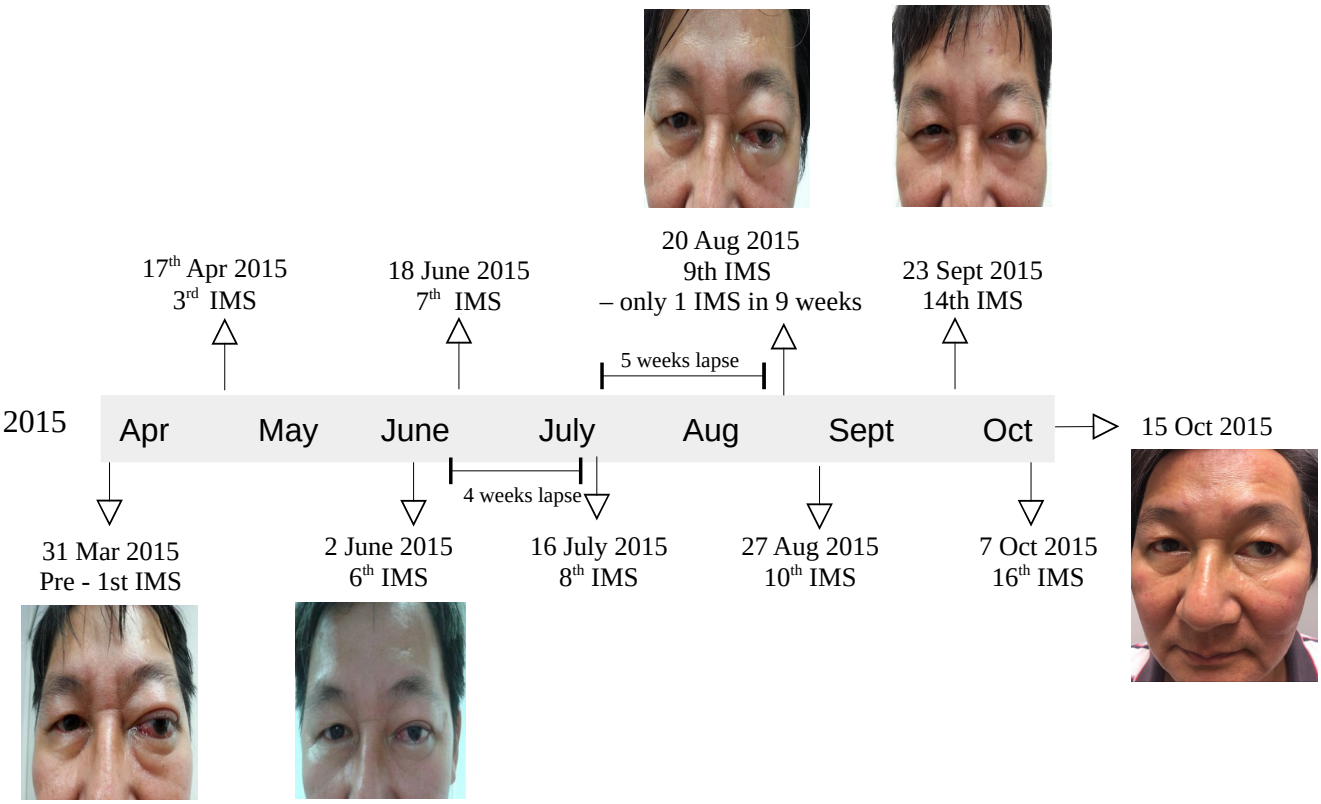
He had consulted Endocrinologist and Eye Surgeon previously. Blood test for thyroid profile was done on September 8th, 2014. The Antithyroglobulin (Anti – TG) was raised to 544 IU/ml (<115). The diagnosis of Thyroid Associated Orbitopathy was confirmed.

Patient refused systemic steroid therapy for fear of steroid side effects and was left untreated for 8 months. He consulted me on March 31st, 2015 and was treated with Gunn IMS.

Method:

Needling of cervical paraspinals muscles, trapezius, supraorbital, infraorbital, nasociliary and orbicularis.

Result:



The left eye orbitopathy improved markedly after 6 weekly Gunn IMS sessions. For next 9 weeks, patient had only 1 Gunn IMS session as he was out stationed. The condition relapsed. Subsequently, he continued to have weekly Gunn IMS treatment again. The orbitopathy is well controlled and there is no relapse till today.

Discussion:

TAO is a self – limiting autoimmune process affecting the orbital and periorbital soft tissues and mainly associated with dysthyroid state.

Systemic steroid is indicated for TAO patients with severe inflammation or compression optical neuropathy. Radiotherapy or Orbital Decompression may be performed if medical treatment is ineffective.

Gunn IMS had successfully cured this patient with severe TAO. However, weekly Gunn IMS treatment is essential to confrol the disease process till fully recovered.

Case 3: Mononeuritis Multiplex

Patient:

Miss L was a 42 years old electronic factory worker since 1996 (19 years). She was having severe pain, wasting and numbness of both hands. She also had severe numbness and weakness of right leg and foot, disabled her from driving for last 4 to 5 years. She had consulted Consultant Spinal Surgeon and Neurologist without any improvement on her condition. Nerve conduction test was done on Febuary 25th, 2008, reported as “mixed motor sensory peripheral neuropathy of demyelinating type with secondary axonal degeneration”. Diagnosis was Mononeuritis Multiplex of unknown cause. Prednisolone of 45mg daily was prescribed for 13 days only. She was not on any follow up since 2009. She consulted me on April 22nd, 2015 and had her first Gunn IMS treatment.

Method:

Needling the paraspinal muscles from the cervical to sacral level, trapezius, shoulder muscles and affected muscles of the extremities.

Result:

Date	Number of IMS	Progress
	Before IMS	Severe pain (day and night), numbness UL & LL (R>L) Wasting, weakness Unable to drive car
22 April 2015	1st	Pain reduced from 10 to 4 (VAS) Sleeps and walks better
11 June 2015	7th	Pain reduced from 10 to 1 (VAS) Able to walk up and down stairs with ease Weight gained 1.5kg Rt. thigh muscle girth increased by 1cm
2 August 2015	11th	Able to drive her car

She responded dramatically immediately after the first Gunn IMS treatment. The pain score reduced significantly, VAS 10 to 4. The motor function of the hands and legs also improved. After 11 Gunn IMS treatments, she was well and was able to drive her car and return to work normally.

Discussion:

Mononeuritis Multiplex is a painful, mixed motor sensory neuropathy involving at least two separate nerve areas. It is commonly caused by vasculitis, but in one third of patients, there is no identifiable cause. The necrotising vasculitis causes neuropathy through ischaemic injury to the blood vessels supplying the nerves.

The conventional treatment for Mononeuritis Multiplex is by giving systemic steroids with/ without immunosuppresant or intravenous immunoglobulin. Recently, Monoclonal Antibody has been used for this condition.

Gunn IMS had relieved her intractable pain and suffering. The motor functions of her extremities had also improved so much that allow her to lead a normal life again.

Case 4: Motor Neuron Disease (MND) - Amyotrophic Lateral Sclerosis

Patient:

Miss C is a 51 year old woman who developed bilateral wasting and weakness of her hands and slight difficulty walking four years ago. Nerve conduction studies showed reduced compound muscle action potential amplitude in the upper limb nerves and normal sensory studies. Needle electromyography showed chronic denervation changes in the upper limb and to a lesser extent, in the lower limb muscles, in keeping with motor neurone disease.

At presentation, she had been wheelchair-bound for approximately two and a half years, and had two full-time carers assisting with all activities of daily living. She could eat only pureed food, taking an average of two hours to finish each meal. Sensation and oculomotor muscle function were preserved and she was able to use a computer using the PC Tobii Eye SensorTM eye movement tracking device. She was still working as a company director.

On examination, she was cachectic, with widespread muscle wasting and weakness. There was atrophy and fibrillation of the tongue, dysarthria and drooling. Lower motor neurone signs were more prominent in the upper limbs, with severe muscle atrophy and power of 0/5 on the Medical Research Council scale. In the lower limbs, power was again 0/5 but she was hyperreflexic.

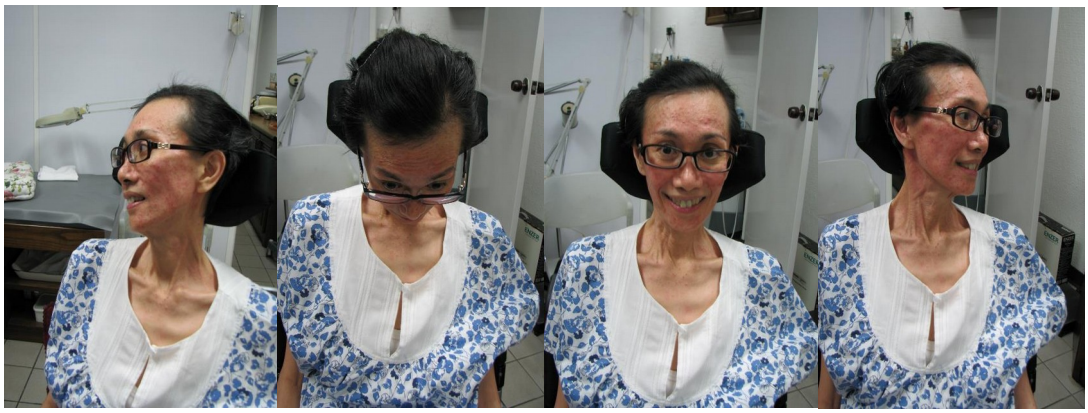
Method:

Intramuscular stimulation of the paraspinal muscles, major muscle groups of extremities, facial muscles and low-level laser of the tongue was performed every one to three weeks over a period of 5 months.

Results:

After her first IMS treatment, the patient was very pleased and reported via email, “The hairdresser commented that I could hold my head upright now. That’s a nice feeling as I no longer fear that I cannot lift up my head to catch my breath when I bend down for too long. “

The patient continued to make good progress, and after her third IMS treatment emailed again to convey more positive feedback, “Spine stronger. Left wrist and left thumb gained a little strength. Right wrist remains weak. Jaw stronger. When yawning, able to close mouth more easily. Able to open mouth more widely. Tongue softer. Could roll tongue a little and lick food from side of mouth”.



After 1st IMS, patient is able to lift up the head and perform lateral rotations.

Following her fifth IMS treatment, she described further progress, “Swallowing improves every day. Able to finish my meal in half the time I usually take. Could swallow saliva even when the neck is flexed. Able to chew on rice for the first time in a long time. Able to blow water out of mouth. Breathing is easier.”

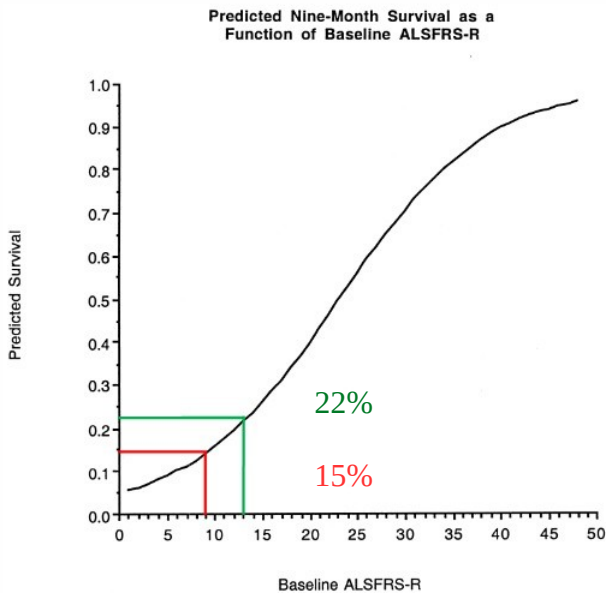
Discussion:

To date, there is no treatment that improves muscle function and quality of life in motor neurone disease. Motor Neuron Disease is unrelentingly progressive, and most patients survive for only two to three years from diagnosis, usually from respiratory insufficiency. Riluzole prolongs median survival by two to three months in patients below 75 years of age with Motor Neuron Disease with symptoms of under 5 years duration, and forced vital capacity above 60% predicted. However, riluzole does not significantly improve muscle function or disability.

The mechanism of action for IMS in MND has not been elucidated, but may be due to the current of injury during IMS which heal the nerves, neuro-immunological modulation and an anti-inflammatory effect. Stimulation of the vagus nerve inhibits excessive cytokine production leading to an anti-inflammatory effect. The improvement in muscle control and function has been sustained for 5 months and she is continuing with IMS treatments every 2-3 weeks. Physiotherapy and nutrition remain critical in improving her muscle strength and bulk.

Function was assessed using the Amyotrophic Lateral Sclerosis Functional Rating Scale – Revised (ALSFRS-R) at baseline and at 5 months. The probability of survival at nine months was plotted on the survival curve published by Cedarbaum et al (1999).

Treatment	ALS Functional Rating Scale
1st IMS - 1 Nov 2013	9/48
13th IMS – 27 Mar 2014	13/48



A trial of IMS in this patient has increased her function and from the patient's perspective, has definitely improved her quality of life. The improvement in her ALSFRS-R scores potentially translates to an increased probability of survival at 9 months, from 15% to 22% following 5 months of treatment. In conclusion, Gunn's intramuscular stimulation may slow progression of motor neuron disease and is a treatment modality worth exploring in this fatal neurodegenerative disease.

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