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## **Redesigning Spinal cord injury rehabilitation: State of the art , affordable & compassionate.**

***Dr Amit Ramesh Dhumale***

**Before I elaborate on SCI rehab at Jupiter , I would like to talk about how Rehab department came into existence at Jupiter hospital Thane.**

**This was made possible by Dr Ajay Thakker Chairman & Dr Ankit Thakker CEO , Jupiter hospitals. When I met Dr Ajay 4 years back (this was before setting up the service) I had expressed my concern to him that, in the present day state of the art neuro-rehabilitation services are limited , expensive& donot have easy access. There was a need of making Neuro-rehabilitation services accessible to the all sections of the society and not just the super rich.**

**For any healthcare service to be sustainable it has to affordable. With a visionary & perfectionist approach we have made this vision a reality by setting up a successful neuro-rehabilitation facility , state of the art and yet affordable.**

**We will be talking about components that make a comprehensive SCI Rehab center but, before that the most important ingredient that a Rehab physician and his team should have are Empathy & Compassion.**

**In my opinion below are three best practices that can be implemented to help establish a more empathetic approach to patients with paralysis.**

### **1.Giving a Personal touch**

**This can be controversial and many Rehab physicians may not agree with this but relationships matter. Take the time to get to know a**

few personal details about each patient, their hobbies / interests. Not only does it matter when considering treatment options, but it is also crucial for expressing compassion and empathy. This makes the patient & their family feel that Rehab team cares. This goes a long way.

## **2. Positive Gestures**

Expressing empathy and compassion include the use of nonverbal cues and positive gestures such as open body language, listening, making eye contact, taking notes, or repeating what a patient says to confirm understanding. Positive gestures demonstrate empathy and reaffirm that the patient is being listened too. Listening to what the patient has to say is extremely important instead of predominantly keeping them at the receiving end of a conversation.

## **3. Ask for Patients Feedback / Reviews**

Providing patients with the opportunity to share their thoughts is an important part of effective communication. Open-ended questions such as “What do you think?” or “How do you feel about that?” are effective ways to engage patients in an open discussion while demonstrating compassionate care.

Empathy and compassionate care is not only the responsibility of the Rehab physician , but is also the responsibility of every member of the rehab team. Patients spend a significant portion of their time interacting with the therapist ,nurses, medical assistants, and receptionists. These interactions can provide many opportunities for demonstrating compassion and empathy toward patients. Therefore, training, encouraging, and ensuring support staff engage in compassionate, empathetic patient care will significantly influence a **patient’s overall experience.**

## **SPINAL CORD INJURY**

**An injury to the spinal cord is a nightmare and the Spinal cord injury treatment process is even scarier and difficult to comprehend for a lay person. Paralysis is a lethal blow not just to the patient but the whole family particularly if an earning member is involved. It is a huge burden on the family & the healthcare system. Post the surgery, spinal cord injury rehabilitation process needs to be supported in the best possible way, with an active support from an expert team, during the recovery period. Rehabilitation after paralysis plays an important role in nursing the individual back to good health. We have some of the best neuro-rehab services for treating complications of spinal injury.**

**There are various types of spinal cord injury - Traumatic spinal cord injury, Ischemic spinal cord injury, Tumors of the spinal cord, Vascular malformations such as Arteriovenous malformation, aneurysm, Spinal cord infections, Auto-immune conditions such as multiple sclerosis, transverse myelitis, Spondylitic myelopathy (degeneration of the vertebral column), etc.**

### **SYMPTOMS**

**The commonly seen spinal injury symptoms in the individuals affected by these conditions are**

- ***Weakness of the arms and/or legs***
- ***Decrease or loss of sensation***
- ***Bladder and bowel dysfunction***
- ***Swallow dysfunction***
- ***Breathing difficulty***

## **MEDICAL COMPLICATIONS**

There are medical complications of spinal injury, that can be noted after a few weeks or months after the injury. Some common ones include

- *Infections such as Pneumonia and Urinary tract infection*
- *Venous thromboembolism such as Deep vein thrombosis (blood clot in the veins of your arms and/or legs) or Pulmonary embolus (blood clot in your lungs)*
- *Pressure ulcers*
- *Heterotopic ossification – a condition which causes stiffness of your joints*
- *Nerve pain, as well as muscle, tendon and joint pain*
- *Spasticity – muscle tightness*
- *Autonomic dysreflexia – a condition which causes headache, increased flushing and sweating, changes in your blood pressure and heart rate*
- *Orthostatic hypotension – a condition which causes a decrease in blood pressure with change in position*
- *Sexual dysfunction*
- *Fracture*
- *Osteoporosis – a condition which causes thinning of bones*
- *Changes in the mood such as depression and anxiety*

## **HOW JUPITER HOSPITAL REHABILITATION CAN HELP**

Jupiter Hospitals SCI Rehab program is in the true sense interdisciplinary. Rehabilitation is an integral part of the hospital services in line with evidenced based medicine & best practice guidelines. The coordinated, structured & integrated team approach

**makes it truly interdisciplinary with weekly case conferences by the rehab team keeping the patients needs at the centre.**

**Convenient one stop access to all multiple therapy services , all under one roof that caters to all the rehabilitation needs of the patient .The SCI Rehab program provides customized & tailor made programs suited to the needs of the individual. Regular interdisciplinary case conferences to monitor the progress of the program towards achieving measurable functional goals & endpoints.**

**Rehabilitation is an integral part of the hospital services at Jupiter hospital, thane - 2000 squarefeet advanced rehab lab with dedicated rooms for inpatient SCI rehab program & advanced rehab technology ( Robotic rehab, sensor based rehab, computer assisted rehab & virtual reality), all in the same vicinity for easy / safe patient transfer & maximise sessions as per need of the patient.**

**Spectrum of care: SCI rehabilitation\_\_:** Integrating rehabilitation services to the main stream healthcare is the need of the hour. At Jupiter hospital the rehab starts from the intensive care units followed through the impatient ward journey till they are discharged & continue their rehab as needed on outpatient basis.

- ***ICU based Early mobilization protocol***
- ***Comprehensive Inpatient Inter-diciplinary rehabilitation program***
- ***Out-patient rehabilitation program***
- ***Daycare rehabilitation program***
- ***Rehab OPD Clinic***

## **Interdisciplinary Core team – SCI Rehab**

### **REHAB PHYSICIAN (PHYSIATRIST)**

Patients are evaluated by the Rehab physician first to determine the nature and severity of the medical condition and then come up with a treatment plan that best suits them. Depending on the patient's symptoms and medical complications, the treatment plan will include recommending therapy services, prescribing medications and performing injections as needed. Medications are commonly prescribed for medical complications as well as to reduce symptoms directly related to spinal cord injury such as pain, tightness of muscles of arms and legs and bowel and bladder dysfunction. The physician performs injections such as tendon injections, joint injections for joint or muscle pain as well as Botulinum toxin (commonly referred as Botox injections) and nerve block injections to help relieve muscle and tendon tightness.

### **PHYSIOTHERAPIST**

Physiotherapist will focus on various physical exercises to improve weakness in legs, improve their bedmobility, static / dynamic sitting balance, walking and reduce muscle tightness. They can also use physical modalities to reduce pain and inflammation, muscle and tendon tightness, and prevent muscle atrophy.

### **OCCUPATIONAL THERAPIST**

The Occupational Therapist will focus on various physical activities required for daily living for patients with severe physical and/or cognitive impairment and also teach cognitive exercises thereby compensating the cognitive deficits in any. Occupational therapists also focus on various physical exercises to improve weakness in the upper limbs & transfer training. The final phase of

treatment involves patient training for successful community integration (education, employment etc).

## **ORTHOTIST**

They can fit you with an orthosis to reduce muscle tightness as well as improve your walking and arm function.

## **NEUROPSYCHOLOGIST**

A Neuropsychologist evaluates patients with depression and anxiety, that is commonly seen after any major life-changing illness or injury and guides them through the process of rehabilitation thereby improving their quality of life through motivation and counselling.

## **NUTRITIONIST**

Malnutrition or undernourishment is a common problem in this population. For optimal recovery, a Nutritionist recommends an appropriate intake of nutrition.

## **REHABILITATION NURSE**

Our inpatient rehab program is strengthened by dedicated Rehabilitation Nurses. They train patients with central nervous system injury to manage their bowel and bladder with guidelines laid down by Rehab physician as part of bowel & bladder training. Performing and training wound care management for patients with pressure ulcers are also handled by a Rehabilitation Nurse.

Goals of SCI Rehab program should be Specific, measurable, achievable, relevant & time bound.

Aims of SCI Rehab program should be ,to promote maximal restoration of function , to facilitate early / smooth reintegration of the patient into the community .

## **EXPECTATIONS OF RECOVERY**

Depending on the severity and chronicity (time duration since injury/illness) of the injury/illness, recovery duration may differ.

Complete neurological recovery is often possible if the injury is mild and incomplete. In the case of a moderate to severe incomplete injury or a complete injury, full neurological recovery may not be possible; therefore SCI Rehab will help you to optimize your independence and integrate you into the community despite your physical limitation. If the injury is too severe, then the goal would be to improve your quality of life by helping you be as independent as possible with your day to day living, decrease pain and prevent complications. Rehab counselling plays a huge role. Indeed at times it is a tight rope walk as we donot want to push a patient with complete SCI into depression but at the same time at all costs avoid making promises we cannot keep. This is why making realistic goals is so important. At times , this can also be very stress-full for the Rehab team as along with the patient we too have to face the harsh realities of life at times.

### **Specialized SCI Rehab services provided –**

- ***Robotic Rehabilitation***
- ***Motor Re-learning program***
- ***Balance & coordination training***
- ***Gait training***
- ***Hand Rehabilitation***
- ***Facial Rehabilitation***
- ***Sensory integration therapy***
- ***Constraint induced motion therapy (CIMT)***
- ***Proprioceptive neuromuscular facilitation (PNF)***
- ***Neuro-developmental therapy for adult & children (NDT)***
- ***Geriatric Rehabilitation***
- ***Spasticity management***
- ***Bladder & Bowel retraining***

- **Activity of daily living Training**
- **Splinting / Orthotic management**
- **Assistive devices (Assessment & training)**
- **Wheel chair training**
- **Transfer training (Surface to surface transfer)**
- **Sexual Rehabilitation**
- **Job evaluation& modifications**
- **Home modification for architectural barriers**
- **Fall prevention**
- **Patient & family counselling& education**

### **Advanced Rehab technologies**

- **Robotic & computer assisted rehabilitation for Wrist , hand & fingers**
- **Robotic & computer assisted rehabilitation for arm & shoulder for task oriented training**
- **Interactive therapy surface for motor training**
- **Sensor based rehabilitation device for static & dynamic balance assessment & training with seating & standing features**
- **Computerized work station for continuous record of all patients**
- **Myofeedback using surface & cavity electrodes which gives visual biofeedback on a LCD screen.**
- **EMG biofeedback & Functional electrical stimulation**
- **Virtual Reality treadmill with unweighing system**
- **Antigravity treadmill**
- **Dynamic stair trainer**
- **Lokostation (USA) – Advanced Robotic Gait rehabilitation tool which comfortably redistributes the patients weight with offloading system to reduce the risk of falls**

- **Mechanised devices for early mobilisation (Sit to stand) - Sara Plus & Sara steady**
- **Over-head rail system connecting patient room to any part of the Rehab lab for gait training & patient transport.**

**The SCI rehab program at Jupiter hospital, thane is state of the art yet affordable with a personal touch of empathy & compassion.**

