



# Cerebral Palsy

## Associated Medical Problems & Treatment

**Sarojini Budden, MD, FRCP (C), Oregon Health and Sciences University**

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Pediatric Development Program Neonatal Follow up Clinic

Legacy Emanuel Children Hospital Portland, Oregon

### Multi-handicapping Syndrome

- Neurological
- Sleep
- Sensory impairments
- Growth
- GI problems
- Respiratory problems
- GU problems
- Orthopedic
- Osteoporosis

### Treatment & Intervention for Neurological/Behavior problems

- Medical management of seizures with AED, Ketogenic diet, Vagal nerve stimulator, surgery.
- Early intervention and structured programs for cognitive deficits through educational systems
- Individualized Educational planning for Learning disabilities
- Combined behavioral and medical treatment for ADD

### Medical problems associated with Cerebral Palsy

#### Neurological problems

- Seizure disorders 33%-50%
- Mental retardation 50%-70%
- Learning disorders
- ADD / behavioral problems
- Speech difficulties/poor breath control (dysarthria) 50%
- Feeding difficulties /Swallowing problems

### Sleep Disturbances

- Assessment
- Is it seizure related?
- Is it due to GER?
- Is it secondary to spasms?
- Any other identifiable cause?

Treatment

Treat cause

Chloral Hydrate, Valium, Clonidine, Melatonin



### **Associated Medical Problems**

- Growth failure occurs frequently in CP
- 30 % due to poor nutrition
- Dysphagia, GER, chronic constipation need to be addressed
- If caloric intake adequate consider other etiological factors including hypothyroidism
- Consider influence of neurological integrity on growth
- Leptin disorders in those individuals who have adequate nutritional intake

### **Feeding Problems**

- Complete nutritional history; intake types/textures and consistencies of foods
- Determine oral motor and oral pharyngeal function
- Address involuntary tongue movements and chewing
- Assess position of neck posture and scoliosis and muscle tone
- GER and dysmotility

### **Feeding Evaluation**

- Investigations: X'ray chest (rule out aspiration) and spine (rule out cervical abnormalities /scoliosis)
- Cine-Video fluoroscopy and upper GI series
- Ph probe
- Scope esophagus and stomach
- Determine need for G - Tube

### **Indications for Gastrostomy feeds**

- Unable to maintain oral nutritive intake
- Significant weight loss
- Chronic dehydration
- Significant time it takes to feed child
- Increase fatigue with feeds
- Gagging, choking, vomiting and dysphagia
- Recurrent aspirations
- Severe GER not controlled with medications
- (Will need fundal- plication also)

### **Drooling**

- Oral motor treatments
- Medical treatment (1 % Atropine Ophthalmic drops used PO)
- Robinol or glycopyrrolate .01-.22mg /kg/day)
- Surgical approach (Tympanic plexus, Chordi tympani VII ; glands, ducts )

### **Dental Problems**

- Milk teeth and cavities
- Gingivitis
- GER
- Difficulty in providing oral care
- Malocclusion
- Teeth grinding
- TMJ problems
- Preventative, early dental care, treat GER



### Constipation

- Determine fluid and fibre intake
- Dietary changes
- Use caro syrup in infants
- Use milk of magnesia, stool softners
- Lactulose, Miralax etc
- Rarely suppositories or enemas
- Movement, weight bearing and exercise

### Associated Medical Problems Sensory Deficits

- Visual impairments 40%-50%
- Auditory impairments 25%-40%
- Sensori-motor difficulties
- Dyspraxias and agnosias
- Tactile defensiveness or hypersensitivity to touch
- High threshold for pain due to tactile hyposensitivity

### Management of Sensory Disorders

- Refer to ophthalmologist for treatment
- Refer to ENT and audiologist for evaluation and treatment
- Early intervention to provide vision therapy and auditory language training through early intervention programs.
- Therapies for speech language disorders also should include oral motor therapy
- Therapies for Sensory integration difficulties

### Associated Medical Problems Orthopedic problems

- Dislocated / subluxated hips
- Scoliosis
- Contractures of joints
- Discrepancy of skeletal growth
- Deformities of hands and feet
- Deformity of the pelvis

### Associated Medical Problems

- Osteopenia /Osteoporosis (Increased risk in severe CP)
- Best prevented through adequate nutrition, maintaining strength, facilitating weight bearing, and if possible ambulation
- If fractures occur consider treatment with low dose IV Pamidronate 0.75mg/kg/day x 2 days every 4 months for 1 year
- Fosomax use in older individuals Caution in bed ridden patients



### **Associated Medical Problems**

- Genito-urinary problems in 30-35% Due to urodynamic abnormalities (hypertonic bladder, detrusors sphincter dyssynergia)

Best treated with a combination of behavior therapy and medications:

Detrol 1 mg bid also used as long acting form 2-4 mg (LA);  
Ditropan.5mg/day ( Oxybutynin chloride)

Sanctura 20mg bid (Trospium Chloride)

### **Transition into adult services**

- Employment
- Maintenance therapy
- Living arrangements
- Leisure
- Self-Advocacy
- Transportation

### **Psycho-social**

- Identify strengths and needs of family & child
- Community services
- Recreational services
- Funding
- Respite care
- Parent support and counseling
- United Cerebral Palsy Association