



# DPT

## DEVELOPMENTAL PEDIATRICS TODAY



November 2018

### Monthly e-Newsletter of IAP Chapter of Neurodevelopmental Pediatrics

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## Editorial

### Tracking Development

Hi all

November has not been kind to yours truly. I've had to do extensive travel supporting the Measles Rubella Vaccination campaign which rolls into the country's most populous state ,Uttar Pradesh this month . What energises me and others is the future of India devoid of the debilitating consequences of Congenital Rubella syndrome.



Indeed intra uterine infections including Rubella is one of those preventable causes of disability that's within our reach. The other well known risk factor is prematurity although our current understanding of its prevention is limited . In this edition Dr. Lata Bhatt looks at the neurodevelopmental health of pre term babies. It's just the first part and I can already see that it's a solid review.

Medicines are bit a small if important weapon in our armoury when it comes to Neurodevelopmental Disorders . And when it comes to drug use rationally ,who else but our Chairperson Dr Jeeson can put it across so clearly ? He's at his natural best in the article on drug treatment of spasticity .

In the journal scan section my friend Dr. Multani and Aparna have dissected a paper on visual deficits in Developmental Dyslexia (sic). Evidence counts and when it comes to evidence ,more the merrier ..

Merry Christmas in advance by the way,

**Dr. Santhosh Rajagopal**

Chief Editor



## Chairperson's Message

Dear colleagues,

The November issue of DPT is at hand. And this is an month important for IAP as we pediatricians celebrate Children's day (also known as Bal Divas) to increase the awareness of people towards the rights, care and education of children.



Major IAP week and day celebrations are due this Diwali month. You all would be in the midst of Child and Adolescent Health Care Week (CAHCW) – any week including Nov 14th - and are busy guiding the adolescent. The IAP Teenage day – 1st day of CAHCW; Daughter's day – Sunday during CAHCW; The healthy lifestyle day – any 1 day during CAHCW; and Child Rights Day (Nov 20th) will also keep us IAPians on our toes. Please conduct special programs for differently abled children on these days as part of our Chapter activity.

Our IAP NDD workshops are being conducted all over the country.

Our Guidelines Update needs to be conducted during PEDICON at Mumbai.

Our Pedicon Workshop and Symposia are being finalized.

Let us together work hand in hand for the betterment of the Children with special needs.

Warm regards,

**Dr. Jeelson C. Unni**

Chairperson

IAP Chapter of Neurodevelopmental Pediatrics



## Snippets from the Secretary

Greetings of the season and Happy Diwali to all!

The festival of lights brings with it a break from schedule for many of us with a surge of family and friends time.

The joy of giving and receiving is such a major part of festivals and culture has its own way of binding people together and bonding. Even in today's virtual world full of social media the atmosphere in this season of dressing up, family get togethers, gorging on food and sweetmeats with people around you and shopping for oneself and close ones brings with it the personal and real touch as part of our lives. It is these cultural values or rituals (whether you follow them traditionally or you go on a holiday out of town or decide to chill at a movie and dinner) that form the humane touch or connections that we grow up with and that make our memories.

The other side of course being the danger of people still indulging in non environment friendly fire crackers and worse still indulging in them without proper safety precautions.

Another sad story that troubles me is what we hear many times from parents of our children with special needs about them avoiding going out to family occasions as they feel their children and many times they as parents are judged because of these challenges. It is sad and let us make use of these occasions to make our parents strong enough to accept the weaknesses of their children themselves so that they can come out strong in society and stop being worried about being judged. The more families come out in the open the more will society learn to stop raising eyebrows and accept them as an integral part of society. Let us help and support them from shying away from socialisation. Awareness programs, education through media and talks in society will go a long way in bringing about this change.

“Let us remember-One book, one pen, one child and one teacher can change the world”-Malala

Bcoz I truly believe Nelson Mandela's words that –“Education is the most powerful weapon which you can use to change the world’

Happy Learning friends...

**Dr Leena Srivastava**

National Secretary

IAP Chapter of Neurodevelopmental Pediatrics

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## Journal Scan

### Frequency of Visual Deficits in Children With Developmental Dyslexia

Dr K.S.Multani, Aparna Raghuram

**IMPORTANCE:** Developmental dyslexia (DD) is a specific learning disability of neurobiological origin whose core cognitive deficit is widely believed to involve language (phonological) processing. Although reading is also a visual task, the potential role of vision in DD has been controversial, and little is known about the integrity of visual function in individuals with DD.

**OBJECTIVE:** To assess the frequency of visual deficits (specifically vergence, accommodation, and ocular motor tracking) in children with DD compared with a control group of typically developing readers.

**DESIGN, SETTING, AND PARTICIPANTS:** A prospective, uncontrolled observational study was conducted from May 28 to October 17, 2016, in an outpatient ophthalmology ambulatory clinic among 29 children with DD and 33 typically developing (TD) children.

**MAIN OUTCOMES AND MEASURES:** Primary outcomes were frequencies of deficits in vergence (amplitude, fusional ranges, and facility), accommodation (amplitude, facility, and accuracy), and ocular motor tracking (Developmental Eye Movement test and Visagraph eye tracker).

**RESULTS:** Among the children with DD (10 girls and 19 boys; mean [SD] age, 10.3 [1.2] years) and the TD group (21 girls and 12 boys; mean [SD] age, 9.4 [1.4] years), accommodation deficits were more frequent in the DD group than the TD group (16 [55%] vs 3 [9%]; difference = 46%; 95% CI, 25%-67%;  $P < .001$ ). For ocular motor tracking, 18 children in the DD group (62%) had scores in the impaired range (in the Developmental Eye Movement test, Visagraph, or both) vs 5 children in the TD group (15%) (difference, 47%; 95% CI, 25%-69%;  $P < .001$ ). Vergence deficits occurred in 10 children in the DD group (34%) and 5 children in the TD group (15%) (difference, 19%; 95% CI, -2.2% to 41%;  $P = .08$ ). In all, 23 children in the DD group (79%) and 11 children in the TD group (33%) had deficits in 1 or more domain of visual function (difference, 46%; 95% CI, 23%-69%;  $P < .001$ ).

**CONCLUSIONS AND RELEVANCE:** These findings suggest that deficits in visual function are far more prevalent in school-aged children with DD than in TD readers, but the possible cause and clinical relevance of these deficits are uncertain. Further study is needed to determine the extent to which treating these deficits can improve visual symptoms and/or reading parameters.

Reviewer's comments: Dyslexia is one of the three learning disabilities encountered in young children with normal intelligence and vision testing is an important aspect of the evaluation process. The study adds additional information on the likely causes of dyslexia using advanced vision testing methods which may not be available to all but still highlights the importance of visual evaluation and vision therapy in treatment of this disorder.



## UN Convention on the Rights of Persons with Disabilities

### Preamble

Recognizing that children with disabilities should have full enjoyment of all human rights and fundamental freedoms on an equal basis with other children, and recalling obligations to that end undertaken by States Parties to the Convention on the Rights of the Child.

### Article 3, General Principles:

Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

### Article 4, General Obligations:

In the development and implementation of legislation and policies to implement the present Convention, and in other decision-making processes concerning issues relating to persons with disabilities, States Parties shall closely consult with and actively involve persons with disabilities, including children with disabilities, through their representative organizations.

### Article 7, Children with Disabilities:

1. States Parties shall take all necessary measures to ensure the full enjoyment by children with disabilities of all human rights and fundamental freedoms on an equal basis with other children.
2. In all actions concerning children with disabilities, the best interests of the child shall be a primary consideration.
3. States Parties shall ensure that children with disabilities have the right to express their views freely on all matters affecting them, their views being given due weight in accordance with their age and maturity, on an equal basis with other children, and to be provided with disability and age-appropriate assistance to realize that right.



## Pharmacotherapy of spasticity

**Dr Jeeson C Unni**

Editor-in-chief, IAP Drug Formulary

Sr Assc Consultant, Dept of Child Health and Adolescent Medicine, Aster Medcity, Kochi

### Drugs used in treating spasticity

- Skeletal muscle relaxants (dantrolene sodium, baclofen)
- Benzodiazepines (diazepam)
- Alpha2-adrenergic agonists (clonidine, tizanidine)
- Botulinum toxins (onabotulinumtoxinA, abobotulinumtoxinA, incobotulinumtoxinA, rimabotulinumtoxinB)

Because tolerance can occur with medications, drug dosages should regularly be reviewed and implantable devices (pumps, stimulators) should be checked

Gabapentin, clonazepam, progabide, piracetam, lamotrigine, and cyproheptadine may potentially affect spasticity. Not indicated for spasticity - currently are under investigation, have undergone little clinical evaluation

### Skeletal Muscle Relaxants

Dantrolene sodium -

- Peripherally acting - prevents calcium release from the sarcoplasmic reticulum
- Effective in cerebral-origin spasticity - traumatic brain injury (TBI), stroke, or cerebral palsy

Baclofen -

- Presynaptically inhibits the nerve terminal. It is centrally acting - administered intrathecally or orally.

- Spasticity related to spinal cord injury (SCI) or multiple sclerosis (MS) and in cerebral palsy
- Tolerance can occur
- Adverse effects are minimized if the drug is given intrathecally.

### Intrathecal Baclofen

Approved for the treatment of spasticity of cerebral origin in 1996

A surgically implanted system used to control spasticity by infusing baclofen directly into the spinal canal and around the spinal cord

Tip placed intrathecally between T10 and L1

Pump is implanted into a subcutaneous pocket in the abdomen

- Inhibits spasticity by blocking excitatory neurotransmitters in the spinal dorsal horn
- Maximizes the dose delivered to spinal receptors
- Minimizes the side effects associated with oral baclofen
- Severe multifocal and regional muscle overactivity
- Failed adequate trial of oral agents
- Minimum age 4 years (body-size dependent) and clinically stable clinically stable
- Patient/caregiver goals for treatment are realistic



## Pharmacotherapy of spasticity

- Family committed to intrathecal baclofen as a treatment option

### Benzodiazepines

- Skeletal muscle relaxants that can treat convulsive disorders
- Diazepam acts presynaptically and is a gamma-aminobutyric acid A (GABA-A) agonist.
- Centrally acting
- Particularly effective in patients with spinal cord injury (SCI) and multiple sclerosis (MS)
- Tolerance and addiction can occur.

Alpha2-adrenergic Agonists

Reduce sympathetic outflow from CNS

### Clonidine

- Stimulates alpha-2 adrenoreceptors in brainstem - activate an inhibitory neuron - results in reduced sympathetic outflow
- Decreases vasomotor tone and heart rate
- spinal cord injury (SCI) -associated spasticity and possibly in traumatic brain injury (TBI), -associated spasticity

### Tizanidine

- Centrally acting muscle relaxant
- For predominantly upper motor neuron involvement
- It has been reported to eliminate the unwanted side effect of muscle weakness

### Botulinum Toxins

- To reduce muscle tone and improve passive &/or active function
- Prevents acetylcholine from the presynaptic membrane, causing temporary calming of muscle contractions by blocking the transmission of nerve impulses

Muscles commonly treated with Botox include the

- Gastrocnemius-soleus complex
- Hamstrings
- Hip adductors
- Flexor synergy muscles of the upper extremity

### Botox IM

Localised by surface landmarks, EMG stimulation, and/or U/S

- Muscle relaxation is evident within 48 to 72 hours and persists for a period of 3 to 6 months
- Helps improve a child's ability to walk or use hands and allow for a better fitting orthotics by reducing spasticity
- Therapists can take advantage of the time when an overly powerful muscle is weakened to work on strengthening the muscle on the opposite side of the joint (antagonist)
- Sometimes, casting of the involved extremity is done after the injection to increase the stretch of the tight muscle



## Neuro-developmental Health of Preterm Babies – Part 1

**Dr. Lata Bhat**

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Globally, an estimated 15 million babies are born too soon, and almost a quarter of these are born in India. India contributes to 25% of the preterm births in the world. Of the 27 million babies born annually in India, 3.6 million are born prematurely, of which 3.03 lac don't survive due to complications. The survival of preterm babies has improved over past 2 decades. So we are now facing more and more concerns about their Neuro-developmental health. However, most premature babies have normal development. Extremely premature, low birth weight and sick babies have a higher risk of development problems – but even in these cases, many babies develop normally.

### Factors associated with risk of neuro-development

Most Neurodevelopmental concerns among very preterm babies are likely to be the consequence of brain damage of perinatal origin. Majority can be identified by Cranial USG. IVH, Periventricular hemorrhage and White matter damage are the best recognized Preterm brain injuries associated with adverse neurodevelopmental outcomes. Two major factors which contribute to the development of PVH-IVH are loss of cerebral auto regulation and abrupt alterations in cerebral blood flow and pressure.

#### ASSESSING THE BABY FOR RISK OF NEURODEVELOPMENTAL DELAY

MILD RISK FOR NDD	MODERATE RISK FOR NDD	HIGH RISK FOR NDD
PRENATAL RISK FACTORS	ABNORMAL FETAL GROWTH	FETAL DISTRESS
> 37 WEEKS	33-36	<33
>2.5 KG	1.5-2.5 KG	< 1.5 KG
BOOKED PREGNANCY	SUBOPTIMAL PERINATAL CARE	SUBOPTIMAL TRANSPORT EXTRAMURAL
COMPLETED COURSE OF ANS	INCOMPLETE COURSE OF ANS	NO COURSE
NO NEED FOR RESUSCITATION	NEEDFOR RESUSCITATOIN	APGAR < 3 AT 5 MIN ENCEPHALOPATHY MULTI ORGAN INJURY
LEVENE GRADE 1	LEVENE GRADE 2	LEVENE GRADE 3
NOT REQUIRED VENTILATION	UNCOMPLICATED COURSE OF	VENTILATION MORE THAN 7



NO SHOCK	SHOCK	REFRACTORY SHOCK HAEMODYNAMICALLY STABLE PDA
TRANSIENT HYPOGLYCAEMIA	HYPOGLYCAEMIA <25 MG/DL > 3 DAYS	SYMPTOMATIC HYPOGLYCAEMIA SEIZURE
SUSPECT SEPSIS	SEPSIS(CULTURE POSITIVE CLINICAL AND SCREEN POSITIVE)	MENINGITIS
NEONATAL JAUNDICE LEADING TO PHOTOTHERAPY	NEONATAL JAUNDICE LEADING TO EXCHANGE	NEONATAL JAUNDICE LEADING TO KERNICTERUS
NICU ADMISSION	COMPLEX COURSE   NEC AND PDA NEEDING SURGERY	CLD
PRETERM IVH GRADE 1 OR 2 ,NO ABNORMALITY AT 40 WEEKS	IVH > GRADE 2	VENTRICULOMEGALY OR CYSTIC PVL ,HYDROCEPHALUS AT 40 WEEKS
NORMAL NEUROLOGICAL EXAMINATION AT DISCHARGE	SEVERE PROLONGED ENCEPHALOPATHY	ABNORMAL NEUROLOGICAL EXAMINATION AT DISCHARGE

## Corrected age and concerns about development

It's always important to keep a careful eye on the premature child's development. But it's also worth remembering that there's a big range of 'normal' when it comes to development. Also, **corrected age** can be very useful if one is worried about preterm child's development. For example, if a child is one year old but was born three months early, her corrected age is only nine months. That means you're best to compare her to babies aged nine months, rather than one year.

Some data regarding Neuro-Development in Preterm babies:-

### NICHD data

- There has been Improvement in overall survival of VLBW infants from 77% in 1987-88 to 86% in 1999-2000 in a multicentric data network.
- Early 2000 data show survival rates 70% and 85% respectively for ELBW and VLBW babies.
- Cognitive impairment was found to be 23 to 30 % in 27 to 32 weeks and 34% to 37% in < 1000 gm.

### Indian Data



## Prevalence of developmental disability in preterm infants (Honeycutt et al. 2003 )

DEVELOPMENTAL DISABILITY	PREVALENCE /1000
CEREBRAL PALSY	8.5
MENTAL SUBNORMALITY	18.6
HEARING LOSS	1.6
VISION IMPAIRMENT	2.3

- 84% of Preterm births occur from 32 to 36 weeks.
- At 2 years of age 8-10 % of VLBW babies and about 23 to 30 % of ELBW babies (varies from 5 to 30%) have CP.
- Average Motor and Mental score of ELBW at 18 to 22 months corrected age by Bayley scale of infant development II is 76 (70 - 83 in different centres)

### **KEM Pune Study (1987-1989)**

Neurodevelopmental follow up of preterm babies (<37 weeks) was done for 18 to 24 months using DASSI. At 18 months there was statistically significant difference in motor and mental quotient in Preterm group compared to term babies. At 24 months the diff was not statistically significant. That means Preterm infants had caught up with term peers at 18-24mths. Preterm AGA and without any risk factor, caught up earlier 12 -18 months. Preterm AGA with risk factors caught up at 18- 24 months, establishing the impact of birth wt. and risk factors on infant development. The rate of gross developmental delay (DQ < 70) was 6.4 % and CP was 4%.

### **At Gangaram Hospital, Delhi a study was done on growth and neurodevelopment outcome of VLBW infants at 1 yr. corrected age. The results were:**

Mean DQ at 1 year was 6 points lower than term. This study had taken into account nutritional status and postnatal head growth on neurodevelopment. Their observation was Low DQ in babies with poor head growth at 12 months

**A study done was at PGIMER Chandigarh to find out Neurodevelopmental and behavioral outcome of VLBW (< 1.5 kg BW) babies at corrected age of 2 years (DASSI was done at 18 months). The results were as follows:**

- CP in 3%



- Gross motor abnormality in 11%
- Language abnormality 8%
- The mean Motor DQ at 18 months 77.2 +/- 13.3 (>85 is normal)
- The mean Mental DQ at 18 months 80.4 +/- 10.7 (>85 is normal)
- Delay in Motor DQ (<70): 25.7%
- Delay in Mental DQ (< 70): 17%
- Motor delay in < 1200 gm. was 32 % and in 1201 -1500 gm. it was 21 %
- Mental Delay in < 1200 gm. 17.8% and in 1201 – 1500 gm. it was 16.2 %

### **In babies < 1000gm**

- Motor Delay was 42 %
- Mental Delay was 25 %
- CP 6.6 %

**Data at IPGME&R Kolkata:** Neurodevelopmental outcome of preterm was assessed over 1 year in 2012. 148 babies were assessed by DASSI. They found Motor Delay in 9.46 % and Cognitive Delay in 12.84% of babies.

**Note :** *Both the studies PGIMER Chandigarh and IPGME&R Kolkata are done 20 years apart still CP is more or less same 3% Vs. 4% despite having more no of ELBW and high risk babies in the second group.*

This explains improvement in perinatal and neonatal care in India over the last few years.

European Database study also shows declining trend of CP in VLBW babies.

### **Changing trend in neurodisabilities:**

The newer concept of Dev. supportive care and intervention in NICU decreased the severe disability from 25 % to 5% from 1981 to 1994.

Later there was a small rise 8-10% (probably due to increased survival of very preterm )

The studies for 2 year follow up have now been extended to school age to include the educational, psychological and behavioral problems.

Evidence from various studies in India and abroad show that despite the lack of major neurodevelopmental problems, the preterm babies are failing to match the performance of their term peers in a number of areas in school.

These include educational achievement especially reading, mathematical skills, social integration, motor and visual spatial skills.

Cognitive Development:



Bhutta and colleagues did a systematic review of 16 studies of ex-preterm children in terms of cognitive development at 5-14 years age. Mean difference in scores was 10.85 (95% CI 9.23 – 12.47) irrespective of age and country of origin.

Two European Studies used similar definitions of school failure at 8-9 years of age,

- 19-22% of VLBW children were in special education,
- 12-16% had been held back one year
- 11-15% received special help in regular school
- The specific learning problems are very common in ex-preterm children.

### **Keeping the educational performance in mind KEM Pune did an extended study:**

Cognitive abilities and educational performance of LBW baby has been longitudinally followed up at KEM Pune for 12 years from birth and further extended to 18 years. The results were as follows :

The **mean IQ** of the entire LBW group was **much lower** (89.5 +/- 16.9) than the control group (97.2 +/- 14.1), **though it was within normal limits.**

VLBW children had a mean IQ of 86.1 +/- 14.5, just within normal limits but much lower than controls and that of BW 1500 – 1999gm.

Preterm SGA children had the worst performance with a mean IQ of 85.4 +/- 17.7, which was much lower than that of preterm AGA and full term SGA group.

The double biological risk factors of prematurity and IUGR seemed to have the worst effect on intelligence.

Visuo - motor perception was poor in the study group. This skill is very important in reading and writing .The **writing skills** of VLBW children and preterm children with gestation <32 weeks were particularly poor and the **mathematical skill** was also poor when compared with controls.

## **Other Studies**

**School Performance:** Studies which compare VLBW with same age controls consistently show significantly poorer school performance, even children with no neurological impairments have significantly lower scores on cognitive and achievement measures.

The ELBW adolescent experienced worst performances on all measures particularly in Maths.

15-20% of VLBW adolescents and 30-50% of ELBW Adolescents are receiving remedial assistance and/or have failed in school.

**The behavioral problem:** don't ameliorate with age and most studies show that at adolescence the problems are still significantly greater in the VLBW cohort than in their term peers.

**Functional limitation:** In a study on functional limitation in US, 86% of <750 gm. were found to have some functional limitation, 75% used aids and 66% had to avail non routine services.

**Neurosensory outcome:** U/L and B/L visual impairment occurs in 1-10% of ELBW babies and



refractive error and strabismus occurs in 9% to 25% cases.

**Infants born at 34 -36 weeks are** - 3.39 times as likely as term infants to develop cerebral palsy. 1.25 times more chances of cognitive impairment so more likely need special education.

**ASD:** may be higher in ELBW babies.

Indredavik and colleagues demonstrated higher trend of ASD while screening 14 year old who were born VLBW compared to term control.

**Hyperactivity and Inattention** : 33% in VLBW and 37% in ELBW at school age

### **Retinopathy of Prematurity:**

Study in west Bengal district level SCNU: 25/ 76(32.8%) Preterm babies had ROP of which 10 (13.15%) had to be treated by laser.

Significant risk of ROP was 28 – 32 weeks and requirement for Laser was highest in this group (8 /10)

6 babies with ROP were 33-36 weeks but not a single baby needed Laser.

ROP if not detected and treated will be major cause of Visual impairment and subsequent delay in overall development and poor academic achievement.

For ROP screening at district level, there is lack of infrastructure and trained professionals.

There are limited referral centers for ROP screening and Laser and they are mostly centered on the new tertiary care hospitals.

In Part 2 I am further going to discuss neuro- development in preterm babies under the following headings:

[Language development in premature babies](#)

[Physical development in premature babies](#)

[Sensory development in premature babies](#)

[Thinking and learning development in premature babies](#)

[Social and emotional development in premature babies](#)



## The Right(s) Choice

### Mandating Care

Dr Santhosh Rajagopal

The Rights of Persons with Disabilities act 2016 as it stands today is remarkable in many respects. Especially commendable is the inclusion of Specific Learning Disability. However there has been some thoughtlessness in drafting and lack of due diligence in whetting. The experts who have drafted this cannot escape responsibility for hoisting an incomplete and erroneous piece of legislation. I intend to discuss this in the coming months.

This time I want to focus on an important omission in the act. That is mandating of multi disciplinary care for at risk children. The act calls for screening of children annually to detect developmental delays and defects but is silent on what to do next. The sections dealing with health and education all talk about inclusion and medical care and so on. There is no mention of early intervention. On the other hand the US IDEA law mandates multidisciplinary care for children with developmental challenges.

Many specialists have raised apprehensions about the self appointed therapy experts in the field. The beginning of addressing such concerns should be mandating multidisciplinary care. Once the specialists are named their qualifications and nature of interventions can be codified.

Any act of parliament can be read down on read up by courts. It's also open to government to frame relevant rules, in this case under Sec 100 of the act. The advantage of such a move is that it need not go back to Parliament. Let's look at the Act and which sections can be used to frame rules beneficial to the society. However it needs to be noted that there are glaring errors which require legislative action in the form of an amendment.

Here's what Section 4 states :

4. (1) The appropriate Government and the local authorities shall take measures to ensure that the women and children with disabilities enjoy their rights equally with others.

The next section is more useful :

Section 5:

(1) The persons with disabilities shall have the right to live in the community.

(2) The appropriate Government shall endeavour that the persons with disabilities

are,—

(a) not obliged to live in any particular living arrangement; and

(b) given access to a range of in-house, residential and other community support services, including personal assistance necessary to support living with due regard to age and gender. ( Emphasis added).

All acts give the executive the power to frame rules within the meaning of the law.

The IAP should push for framing of a rule that would mandate services of a multidisciplinary nature under section 5 1b and under the Section 4.1. which generally mandates equal rights. It goes without saying that equality does not mean same kind of support to all but rather the inclusive support that would put the differently abled on equal footing.

Having come so far and having proven that at risk children benefit from multidisciplinary care we should walk the long distance.



## CME on Neurodevelopmental Disorders at Aster Medcity, Kochi



## Autism and Neurodevelopment Disorder Workshop 11th, November 2018, Jalandhar



Jalandhar Academy of Paediatrics organised Neurodevelopment workshop under Presidential Action Plan CIAP-2018.



**Dr Chhaya Prasad at North Zone Pedicon, Amritsar spoke on 'Adolescent Mental Health- Role of Pediatricians'**



**Two workshops conducted in association with**  
**1) IAP Faridabad on 12 Oct 2018 At Hotel Delite**

**2) IAP Noida on 14 OCT 2018**  
**At Raddison Blue**

**IAP guidelines on Autism spectrum disorders covered in the workshops**  
**by Dr Himani Khanna.**

**Each workshop was attended by 35-40 Pediatricians and was followed**  
**by good interactive session.**