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Earnest request to all
DIAP Members
to become

CIAP Members
at the earliest, if not already done.

Dr Lalit Mendiratta
President, IAP Delhi

Dr Manish Gupta
Secretary IAP Delhi

Dr Pankaj Garg
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Treasurer, IAP Delhi

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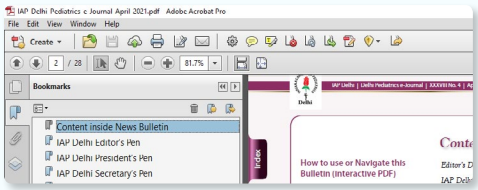

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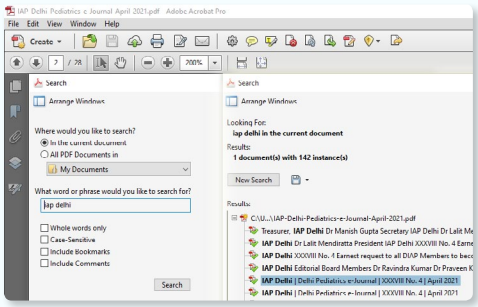

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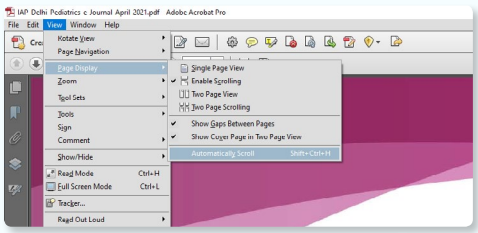

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IAP Delhi Editor's Pen

Dr Pankaj Garg

Treasurer cum Secretary Elect.
IAP Delhi

Dear Delhi **IAP** *Members,*

I am pleased to present before you the July issue of Delhi Pediatrics. The greatest sports event on the global front "Olympics" has just finished and the whole country is excited about the biggest medal tally achieved by our country so far. IAP Delhi and the editorial board of Delhi Pediatrics are equally excited about it and congratulate all the participants in the event. Let's all pledge to promote sports activities in the children and as pediatricians we are best suited for that action as well.

It is heartening to notice that the impact of second wave of COVID-19 seems to be getting lesser and lesser but we should continue to follow COVID appropriate behavior to avoid another wave of this deadly virus.

This month has seen some physical and a lot of online activities by IAP Delhi and I am sure the momentum is going to increase in next months.

Keeping the tradition of academic activities, this journal includes an Update on Neurodevelopmental follow up of preterm neonates and Autism. In the drug review, the interesting journey of ORS is being discussed in details as all of us celebrated the ORS day with lots of interest in the month of July. Rheumatic heart disease is highlighted in "Peeping into heart". Rotavirus infection and vaccine is being discussed in details. We have also included parents' oriented article on growth in children. We have kept the articles short and in crisp format for easy reading. We have also continued with journal clippings in this issue.

Keeping the tradition, we have shared one photo and Xray quiz in this issue. I request you to send the answers on the email of the Delhi secretariat and we will be publishing names of all sending the correct answers of the quiz in the next issue. We hope the readers find these features of interest.

I hereby request all of you to send your articles for publication as well.

Happy Reading,
Long Live **IAP**
Jai Hind.

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IAP Delhi President's Pen

Dr Lalit Mendiratta
President
IAP Delhi

Hello Friends,

It gives me immense pleasure to say that IAP Delhi has started academic physical activities after a long time, of course with all covid safety precautions.

*We had successful PULMOPEDIA this month. I am happy to say that ORS Day celebration event had a remarkable success this year and thanks to all the branches who participated with great enthusiasm. The World ORS Day was celebrated at UCMS and GTB hospital on 29th July and it was a privilege for all of us that Dr Piyush Gupta, CIAP President released the handbook **ORS & ORT** by me on the same day. Hopefully it will help all Medical Students, Nurses and all Pediatricians.*

The same enthusiasm and zeal was continued for Breast Feeding week celebration as well.

Thanks to Dr Pankaj Garg (Treasurer cum Secretary Elect. IAP Delhi), Dr Manish Gupta (Secretary IAP Delhi), Dr. Anil Vaishnavi (Vice President) and Dr Deepak Gautam (President, IAP Delhi) for continued support.

Dr Lalit Mendiratta
President
IAP Delhi

IAP Delhi Secretary's Pen

Dr Manish Gupta
Secretary
IAP Delhi

Dear Friends & IAP Delhi Members,

Hello everyone!!

July 2021 was a welcome month for all of us with COVID19 cases well in control and the unlock theme continued.

The IAP Delhi could conduct three ***Physical events - IAP Diarrhea awareness week, IAP Breastfeeding week and CPR Day****.*

It was a welcome change to be physically present at these events and meet our colleagues offline rather usual online way.

Our 5th subspeciality meet E-PULMOPEDIA was again a hit and was well attended and appreciated.

In August, we will be ***conducting HEMATOPEDIA in Hybrid mode at Kalawati Hospital****. We wish many of you do attend the conference.*

We are taking all due precautions in conducting these limited attendance physical events and do wish and hope everyone remains fine and healthy.

We are planning to conduct our annual mega conference ***PCNI2021*** *in* ***Hybrid mode on 2nd and 3rd October 2021. Please block your dates.*** *We will soon circulate the Brochure for same.*

We appeal to all members to be vigilant and keep promoting covid safe way of life and covid vaccinations.

Dr Manish Gupta
General Secretary

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Section I: Academic

Neurodevelopmental Follow-up of High risk preterm Neonates: An Update

Prof. (Dr). Neelam Kler
Chairperson

Dr Nidhi Gupta
Consultant for follow up of High-Risk Neonates

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Infants born extreme preterm are at greater risk of neurodevelopment impairment compared to their term counterparts and streamlining neonatal follow ups to include multidisciplinary clinics forms part of most healthcare systems worldwide (NICE Guideline (UK) - 2017, AAP, NNF guidelines 2011). NICE guidelines were published in 2017 and were based on best evidence to improve neonatal outcomes in this high-risk group.

Preterms are at greater risk of following problems:

1. **Motor**: especially if Grade III/IV Intraventricular Haemorrhage, Periventricular Leukomalacia, Necrotising Enterocolitis needing surgery and Sepsis.
2. **Cognition**: Executive function-Memory, Planning, Time management etc
3. **Speech**: Mainly expressive, mainly male neonates
4. **Hearing**: especially extreme preterm (<28 weeks gestation)
5. **Vision**: Retinopathy of prematurity, refractive errors, strabismus etc
6. Feeding difficulties: difficulties with chewing, suck and swallowing, fussy eating

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Whom to follow up?

Guidelines Differ slightly but mainly the following:

- All babies less than 32+6 weeks gestation
- 33 weeks gestation and one or more of the following with risk factors as entailed below:
  - Neurological-Stage II/III HIE, Meningitis, Seizures, Brain lesion on Neuroimaging
  - Respiratory-BPD, Mechanical ventilation more than 5 days
  - Cardiac-Complex Congenital Heart Disease, Shock
  - Metabolic-Severe Hyperbilirubinemia nearing Exchange
  - Infections- Probable or Definitive Sepsis, Congenital Infections
  - GI- NEC, Congenital anomaly needing Surgical repair
  - Small for gestational age – birth weight<10th centile
  - Any baby deemed at risk of developmental delay
  - at risk of developmental delay

Benefits: Neurodevelopmental surveillance by a multidisciplinary team (MDT) ensures

- Early identification of developmental delay
- Early intervention and timely referral where needed-Neurologist, Occupational/ Physiotherapist, Audiologist etc.
- Neuroplasticity of the brain is maximum in the first year of life
- Parental support and education
- Readiness for school
- Less

Goal: Intact survival (improving outcomes not just survival)

Proposed Discharge Pathway for High Risk Preterm neonates

Time points (Corrected age if preterm < 37+0 weeks)	Functional constipation	Hirschsprung disease
Nutrition, Growth, Immunizations, Medications reviewed at each visit		
1 month	Visual	ROP Screen *
	Auditory	BERA
	Tone / motor skills	Standardised Neurological Examination (HNNE) or other / Prechtl assessment of General Movement

3 months	Visual	ROP Screen* / Visual Evoked Potential (VEP) if poor visual tracking
	Auditory	BERA if concerns
	Tone / motor skills	Standardised Neurological Examination (HINE) or other & Prechtl assessment of General Movement
	Head circumference & weight	
6 months	Motor	Standardised Neurological Examination (HINE) or other & Prechtl assessment of general movement
	Vision	Assessment for refractive errors / persisting strabismus
12, 18 and 24 months	Motor	HINE
	Cognition & Language	GMFCS (Gross Motor Function Classification System) at 2 years if Cerebral Palsy
	Auditory	Formal Developmental test – BSID or Griffiths or DASII
	Vision	BERA / Formal hearing test
	Social communication	Assessment for refractive errors / persisting strabismus
		MCHAT (16-30months)
*ROP screen is done as per Chronological age and the first screen should be done by 4 weeks from birth.		

Vision Assessment

ROP (Retinopathy of Prematurity) screen till 44 weeks PMA or till retina fully vascularised

- **(NNF)** -<=34 weeks GA and/or <1750 grams birth weight OR 34-36+6 weeks with risk factors
- **RBSK** - recommends in all preterms less than or equal to 2000 grams at birth and if sepsis/supplemental oxygen if weighing more than 2000 grams or in case of concerns.

Hearing assessment

IAP recommends Hearing screen Oto Acoustic Emission (OAE) to be done before one month of age, if fail rescreening should be done with appropriate assessment at 6 weeks of age or 1st immunization visit. Aim is to diagnose before 3 months and start intervention before 6 months of age. BERA (Brainstem Evoked Response Audiometry) is recommended in high risk neonates.

BERA(Brainstem Evoked Response Audiometry)/Automated Auditory Brainstem Response (AABR)

This is a useful non-invasive objective assessment of hearing and must be done before the age of 3 months. Whilst the OAE indicates function of Cochlea, this tests beyond the level of Cochlea providing information on auditory pathway including the brainstem. A click stimulus is provided through the earphones inserted in baby's ear and the electric potentials generated by the auditory pathway are measured by electrodes placed on scalp with the help of a computer. Seven waveforms are produced I-VII and Wave V is the most commonly analysed.

General Movement Assessment Prechtl Assessment of General movements- needs formal training. It is a Qualitative video based assessment of spontaneously generated movements. Systematic reviews have shown it to be 98% sensitivity of detecting Cerebral Palsy before age of 5 months and more cost effective than MRI Brain.

Hammersmith Neonatal Neurological Examination (HNNE)

1. Abridged (screener form)-12 items-If more than two fall in the grey area, complete assessment to be done
2. Full assessment-4 items-6 Categories (Gives Optimality score & hence more objective)
    - Tone and Tone pattern
    - Reflex items
    - Movement
    - Abnormal signs
    - Behaviour/Auditory & Vision

Hammersmith Infant Neurological Examination (HINE) -2 to 24 months of age.

Includes-Cranial Nerves, Reflexes, Movements, Tone, Posture and Reflexes with 26 items in total. It has a high predictive value for later development of Cerebral Palsy in at risk infants.

Bayley Scales of Infancy and Toddler Development (BSID) - is one of the gold standard formal developmental test for use between the age of 16 days to 3 years 6 months. It includes Cognitive, Language (Receptive and Expressive), Motor (Gross and Fine), Social-emotional and adaptive skills. BSID III (2006) is now being replaced by the 4th edition-(released 2019) and is being validated worldwide currently. This needs formal training to administer and, on an average, takes 45-60 minutes to administer.

The Developmental Assessment Scale for Indian Infants (DASII)

The Developmental Assessment Scale for Indian Infants (DASII) is an Indian adaptation of Bayley Scales of Infancy and Toddler Development. It is used to test motor (gross and fine) and mental development (cognition, personal and social skills) from birth to 30 months of age.

Screening Tools for Development

1. ASQ Questionnaires

   Due to recent COVID times, in person appointment has been difficult. In such cases the good old ASQ (Ages and Stages Questionnaire) (ASQ III) is easily used between the ages of 2-66 months and can be supplemented by a video based assessment. They are easy to score and have cut offs for each domain to identify areas of concern.

2 Denver Development Screening Tool (DDST)

   easy to perform till the age of 6 years, any deviation from normal warrants a formal developmental test like Bayley Scales of Infancy Toddler and Development.

3 Trivandrum Development Screening Chart-(TDSC)

   is another simple tool easily used up to 6 years of age.

Behavioural (Autism)

- **Screening**

  MCHAT (Modified Checklist for Autism in toddlers) at 16-30 months.

- **Diagnostic**

  ISAA (Indian Standard Assessment for Autism), INDT-ASD (INCLEN Diagnostic Tool for Autism Spectrum Disorder) and others

  ADOS (Autism Diagnostic Observation Schedule) is considered the gold standard

Red Flags (prompting a referral to a Developmental Specialist Team) International consensus on early diagnostic features of Cerebral Palsy 2020
Persistent head lag beyond 4 months
Fisting of hands beyond 4 months
Consistent asymmetry of posture and movements beyond 4 months
Tightness legs between 6-12 months (does not bring toes to mouth during changing of diaper)
Inability to sit without support beyond 9 months
Hand preference before the age of 12 months

Simple Early Intervention Strategies that may be useful in Neonates

Have to be customized to each baby's needs)	
Skin to skin contact	Benefits cannot be underestimated and range from thermal and cardiorespiratory stability, increased breastfeeding rates, better bonding, and reduced parental anxiety
Posture support	Nesting, frequent change of positions in sick neonate,
Feeding- Make it a positive experience for the babies	Encouraging Non Nutritive suck for babies prior to tube feeds when suck/swallow is not fully established
	Singing during feeding, tube feeding whilst parent holds baby.
	Feeding difficulties: Cochrane (2016) - oro motor stimulation exercises reduce transition time to exclusive oral feeds and overall hospital stay (the number of participants were small). However, not all babies need oro motor stimulation exercises - individualized approach is the key.
	Gastrostomy should be considered where there is risk of aspiration.
Auditory stimulation	Talk to the baby as you would to an adult explaining all that you do
Face time / Visual stimulation	Face of the parent is probably the best toy for the baby. High contrast targets (black and white) are recommended.

Conclusion

1. A robust multidisciplinary follow up programme is needed for all neonatal units to help maximize the developmental potential given neuroplasticity of the brain.
2. Whilst stimulation is important, overstimulation should be avoided- know when to stop- signs like sneezing, crying, falling to sleep.
3. Government of India has set up several District Early Intervention Centers (DEICs) under the Rashtriya Bal Swasthya Karyakram (RBSK). These provide facilities for medical and neurodevelopmental follow up under one roof.

References

1 National Institute of Health Care and Excellence. Developmental follow-up of children and young people born preterm (NICE Guideline NG72). 2017 Online at: www.nice.org.uk/guidance/ng72

2 Greene Z, O'Donnell CPF, Walshe M. Oral stimulation for promoting oral feeding in preterm infants. Cochrane Database Syst Rev 2016: CD009720.

3 Morgan C, Fetters L, Adde L, et al. Early Intervention for Children Aged 0 to 2 Years With or at High Risk of Cerebral Palsy: International Clinical Practice Guideline Based on Systematic Reviews [published online ahead of print, 2021 May 17]. JAMA Pediatr. 2021;10.1001/jamapediatrics.2021.0878. doi:10.1001/jamapediatrics.2021.0878

4 Boychuck Z, Andersen J, Bussières A, et al. International expert recommendations of clinical features to prompt referral for diagnostic assessment of cerebral palsy. Dev Med Child Neurol. 2020;62(1):89-96

Rota Virus Vaccines

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Diarrhoeal diseases globally make a major cause for hospitalizations and deaths of under five-year children. In the spectrum of these diseases Rotavirus is a leading cause of severe life-threatening diarrhoea [1]. Symptoms of Rotavirus diarrhoea include watery stools, vomiting and fever. It spreads through feco-oral route. In developing countries year-round transmission of the disease is seen while developed countries incidence is prominent in winter months. With introduction of vaccines annual rotavirus detection rate has shown a falling trend. WHO in 2008 estimated 453,000 Rotavirus gastroenteritis related child deaths worldwide which constituted 5 percent of all child deaths under five years of age [2].

Rotavirus Virology and Pathogenesis

It is an RNA virus with segmented genome surrounded by a triple layer capsid [3-4]. Human infections are primarily by group A; which has outer layer two structural protein -VP7 (G protein) and VP4 (P protein).Two thirds of rotavirus infections are caused by G1P[8] strain. Other human virulent strains include G2P[4], G3P[8] and G4P[8][5].

Rotavirus mainly presents as diarrhoea but can be asymptomatic also. Some inflammation is found in intestine [6]. Both host and viral factors determine the clinical presentation. There is reduced absorption of sodium, water, and mucosal disaccharidases during

infection [7,8]. Colon cannot absorb water as malabsorption leads to osmotically active monosaccharides, disaccharides, undigested carbohydrates, fat, protein transport into colon [9,10]. NSP4 non -structural protein of virus causes toxic diarrhoea which is demonstrated in animal models [11-13].

Natural infection of rotavirus including asymptomatic neonatal one has shown reduced frequency and severity of later childhood infections [14 - 17].This has efficacy of 56-77 percent later rotavirus infections and increases with every subsequent infection. The infection with one strain also develops protection from other strains. This formed the basis of development of vaccines [14,15].

Vaccines

Two oral vaccines are licensed and marketed worldwide; human monovalent live vaccines and human bovine pentavalent live vaccines. In addition to these two, two more live oral vaccines are marketed in India.

Human Monovalent Live Vaccine (RV1) (Rotarix)

It has one live attenuated human strain 89-12 [G1P1A(8)]. It comes in form of lyophilized powder which is reconstituted before administration. One dose of 1 ml of vaccine contains 106 medium culture infective units of virus. It contains amino acids, dextran, Dulbecco's modified eagle medium, sorbitol and sucrose. Diluents of this vaccine are CaCO3, sterile water, and xanthan. The vaccine and diluents should be stored at 2–8-degree Celsius. Vaccines should be administered promptly after reconstitution, and the dose is 1 ml orally.

Human Bovine Pentavalent Live Vaccine (RV5) (RotaTeq)

It is Human Bovine reassortant vaccine. It is made up of five reassortants between bovine WC23 strain and human G1, G2, G3, G4 and P1A [8] rotavirus strain. One dose (2 ml) of the vaccine contains (2 X106) infectious units of 5 reassortant strains. The vaccine is suspended in buffer solution containing sucrose, sodium citrate, sodium phosphate monobasic monohydrate, sodium hydroxide, polysorbate 80 and tissue culture media. It is available as liquid virus mixed with buffer and no reconstitution is needed. It is stored at 2–8-degree Celsius.

Indian Neonatal Rotavirus Live Vaccine 116 E (ROTAVAC/ROTASURE)

It is a monovalent, bovine-human reassortant strain of G9P[11] with VP4 of bovine rotavirus origin. It is available as liquid vaccine, and 0.5 ml of vaccine contains not less than (NLT) 105FFU (focus forming Unit) of Live rotavirus 116E. It contains potassium phosphate, sucrose, potassium L-glutamate monohydrate, neomycin sulphate, Kanamycin sulphate and Dulbecco's modified eagle medium. It doesn't have any buffer. It was found to be quite immunogenic [18]. It can be stored at -20 degree Celsius up till its expiry date and up to 6 months at 3-8 degree Celsius.

Bovine Pentavalent Vaccine (BRV-PV) (ROTASIIL)

It is developed from 5 bovine (UK) and Human Rotavirus Reassortant strains (G1, G2, G3, G4 and G9). It comes in freeze dried form with each dose of 2.5 ml containing NLT 10 5.6 FFU per serotype. The diluent is citrate bicarbonate buffer solution containing Eagle medium, glutamate, sucrose, and glycine. It is a thermostable vaccine which can be stored for 30 months below 24-degree Celsius [19].

VACCINE EFFICACY AND EFFECTIVENESS

RV1 and RV5

Efficacy and mechanism of action of both the vaccines are similar. Both prevent severe rotavirus gastroenteritis and are less efficacious against mild rotavirus infection. Vaccine efficacy in Europe and USA is more than 90 percent and in Latin America more than 80 percent. African trials show efficacy between 50-80 percent. Lower efficacy in infants could be attributed to high levels of rotavirus neutralizing antibodies in breastmilk, interference of maternal antibody or co-administration of oral polio virus vaccine and poor nutritional status of infants [20].

Systemic review of 48 peer reviewed articles with post licensure data of 24 countries between years (2006-2016) found that the effectiveness of RV1 and RV5 was greater in low mortality countries and lower in high mortality countries for both RV1 and RV5 [21]. Cochrane review showed that vaccine effectiveness declined in 2nd year of life in medium and high mortality settings and tended greater against severe rotavirus disease [22].

R0TAVAC/ROTASURE

Phase three randomized double blinded trials were carried out in three Indian cities of Delhi, Pune and Vellore in Infants 6-7 weeks of age. 3 doses of vaccine or placebo (2:1) were given at four weeks interval. Vaccine efficacy against severe rotavirus gastroenteritis was overall 53.6% and 56.4% in first year of life and 48.9 % in 2nd year of life [23]

ROTASIL

Phase three randomized double blinded trials in India was done in 3,749 infants at 6-8 weeks of age and the vaccine or placebo was administered at 6 ,10 ,14 (1:1). The vaccine efficacy against severe rotavirus gastroenteritis was 36 percent at end point analysis and 39.5 percent at end of second year of life [24].

SAFETY AND RISK OF ACUTE INTUSSUSCEPTIONS

The newer vaccines are quite safe as compared to previous ones. Surveillance data suggest risk of intussusceptions to be 1-2/100,000 infants vaccinated which is 5-10 times lower

with previously licensed vaccine [2]. Meta-analysis done in six countries for Rotarix in Australia, Brazil, England, Mexico , Singapore , US in 2015 showed risk of intussusceptions with first dose (1.9/100,000) and (1.5/100,000) with second dose [25]. A similar study with RotaTeq in Australia and US showed comparable results with first and second dose [26]. Another major study done to detect the risk of intussusceptions with Rotavac found six cases of Intussusceptions in vaccine group and two cases in placebo group. The time interval between the vaccine dose and occurrence of disease was 112 days and with placebo was 36 days. There was no death which occurred due to study product. In an Indian study conducted to study safety of Rotasiil, 6 cases of intussusceptions occurred in study arm and seven in placebo arm. All the cases occurred after 28 days of receiving vaccine or placebo. In a report by Global Advisory Committee on Vaccine Safety (GACVS) of WHO states that there is a small risk of acute intussusceptions with use of newer generation of vaccines [27]. The benefits surely outweigh the risks.

DOSAGE RECOMMENDATION

Minimum age at which the all vaccines to be administered is 6 weeks. Schedule in UIP is three doses of Rotavac vaccine at 6, 10, 14 weeks of age along with other UIP vaccines. The maximum upper age limit for first dose is 1 year. If first dose is given at one year, next two doses will be given at 4 weeks interval to complete three doses [28]. Two doses of RV-1 is recommended, first dose administered at 6 weeks of age and second dose administered at 4 weeks later. Three doses are recommended for RV5 at 6, 10, 14 weeks schedule [29].

According to IAP ACVIP, the maximum age for first dose is 14 weeks, 6 days. The maximum age for the final dose is 8 months, 0 days. In case of regurgitation of vaccine, re-administration of vaccine should not be done. If doses are missed in between for an infant, it is not required to restart or add doses. If in between of vaccine schedule previous vaccine product is not available, vaccine dose should not be withheld and vaccination should be given with the product available. Ideally same vaccine product should be used to complete the schedule [28].

CONTRAINDICATIONS AND PRECAUTIONS

Vaccines should not be administered to infants having severe allergic reactions to a previous dose. History of intussusception in the past is an absolute contradiction. Latex rubber is present in oral applicator of RV1, so in infants with latex allergy RV5 can be given instead of RV1. Severe combined immunodeficiency (SCID) is a contraindication to vaccine administration. Precautions should be taken in case of moderate to severe illness and other chronic diseases.

NEWER VACCINES

Many newer vaccines are in pipeline of development. Lanzhou Institute in China has developed a trivalent Lamb reassortant rotavirus vaccine which has completed phase three trials [30, 31]. Another vaccine developed by Murdoch Children's Research Institute,

Australia and Biofarma, Indonesia currently in phase IIb trial is being considered to be scheduled for neonatal administration like for BCG [30]. Another set of parenteral subunit intramuscular and intradermal vaccines are being developed by PATH (USA) and CDC respectively, to reduce the risk of intussusceptions and to improve vaccine efficacy. Currently these vaccine are in Phase I/II trials [32,33].

CONCLUSION

Over past decade rotavirus vaccines have been given worldwide which has drastically reduced the incidence, mortality and morbidity associated with rotavirus associated diarrhoea. Newer Vaccines in development show immense potential to overcome the limitations of present vaccines and being cost effective to meet the demand of vaccine for poor strata of society globally.

REFERENCES

1. Kotloff KL, Nataro JP, Blackwelder WC, et al. Burden and aetiology of diarrhoeal disease in infants and young children in developing countries (the Global Enteric Multicenter Study, GEMS): a prospective, casecontrol study. Lancet 2013; 382: 209–22.
2. Rotavirus vaccine. WHO Position Paper 2013. Weekly epidemiological record. 2013; 88: 49–64.
3. Estes MK, Cohen J. Rotavirus gene structure and function. Microbiol Rev. 1989;53(4):410–49.
4. Greenberg HB, Estes MK. Rotaviruses: from pathogenesis to vaccination. Gastroenterology. 2009;136(6):1939–51.
5. Santos N, Hoshino Y. Global distribution of rotavirus serotypes/ genotypes and its implication for the development and implementation of an effective rotavirus vaccine. Rev Med Virol. 2005;15(1):29–56.
6. Greenberg HB, Estes MK. Rotaviruses: from pathogenesis to vaccination. Gastroenterology. 2009;136:1939–51.
7. Ciarlet M, Conner ME, Finegold MJ, Estes MK. Group A rotavirus infection and age-dependent diarrheal disease in rats: a new animal model to study the pathophysiology of rotavirus infection. J Virol. 2002;76:41–57.
8. Ramig RF. Pathogenesis of intestinal and systemic rotavirus infection. J Virol. 2004;78:10213–20
9. Davidson GP, Gall DG, Petric M, Butler DG, Hamilton JR. Human rotavirus enteritis induced in conventional piglets. Intestinal structure and transport. J Clin Investig. 1977;60:1402–9.
10. Graham DYMKE. Viral infections of the intestine. In: Gitnick G, editor. Gastroenterology. New Hyde Park: Medical Examination Publishing Company; 1988. p. 566–78.

11. Ball JM, Tian P, Zeng CQ, Morris AP, Estes MK. Age-dependentdiarrhea induced by a rotaviral nonstructural glycoprotein. Science. 1996;272:101–4.

12. Estes MK, Morris AP. A viral enterotoxin. A new mechanism of virus-induced pathogenesis. Adv Exp Med Biol. 1999;473:73–82.

13. Zhang M, Zeng CQ-Y, Morris AP, Estes MK. A functional NSP4 enterotoxin peptide secreted from rotavirus-infected cells. J Virol. 2000;74:11663–70.

14. Bishop RF, Barnes GL, Cipriani E, Lund JS. Clinical immunity after neonatal rotavirus infection. A prospective longitudinal study in young children. N Engl J Med. 1983;309(2):72–6.

15. Fischer TK, Valentiner-Branth P, Steinsland H, Perch M, Santos G, Aaby P, et al. Protective immunity after natural rotavirus infection: a community cohort study of newborn children in Guinea-Bissau, west Africa. J Infect Dis. 2002;186(5):593–7.

16. Velazquez FR, Matson DO, Calva JJ, Guerrero L, Morrow AL, Carter-Campbell S, et al. Rotavirus infection in infants as protection against subsequent infections. N Engl J Med. 1996;335(14):1022–8.

17. Bhan MK, Lew JF, Sazawal S, Das BK, Gentsch JR, Glass RI. Protection conferred by neonatal rotavirus infection against subsequent rotavirus diarrhea. J Infect Dis. 1993;168(2):282–7

18. Ella R, Bobba R, Muralidhar S, et al. A Phase 4, multicentre, randomized, single-blind clinical trial to evaluate the immunogenicity of the live, attenuated, oral rotavirus vaccine (116E), ROTAVAC®, administered simultaneously with or without the buffering agent in healthy infants in India, Hum VaccinImmunother. 2018;14(7): 1791-9. DOI: 10.1080/21645515.2018.1450709.

19. Zade JK, Kulkarni PS, Desai SA, et al. Bovine rotavirus pentavalent vaccine development in India Vaccine 32S (2014) A124–A128. 15. Vesikari T. Rotavirus vaccination: a concise review. Clin Microbiol Infect. 2012;18 (Suppl. 5): 57–63.

20. Vesikari T. Rotavirus vaccination: a concise review. Clin Microbiol Infect. 2012;18 (Suppl. 5): 57–63.

21. Jonesteller CL, Burnett E, Yen C. Effectiveness of Rotavirus Vaccination: A Systematic. Review of the First Decade of Global Postlicensure Data, 2006–2016. Clin Infect Dis. 2017;65(5):840–50.

22. Soares-Weiser K, Maclehose H, Bergman H, et al. Vaccines for preventing rotavirus diarrhoea: vaccines in use. Cochrane Database Systematic Review, 2012, 11: CD008521. doi: 10.1002/14651858.CD008521.pub3. Review

23. 16. Bhandari N, Rongsen-Chandola T, Bavdekar A, et al. Efficacy of a monovalent human-bovine (116E) rotavirus vaccine in Indian infants: a randomised, double-blind, placebo-controlled trial. Lancet. 2014;383:2136–43

24. Kulkarni PS, Desai S, Tewari T, et al. A randomized Phase III clinical trial to assess the efficacy of a bovine-human reassortant pentavalent rotavirus vaccine in Indian infants. Vaccine. 2017;35(45): 6228–37.

25. Rosillon D, Buyse H, Friedland LR, et al. Risk of intussusception after rotavirus vaccination: meta-analysis of postlicensure studies. Pediatr Infect Dis J. 2015;34(7):763–8.

26. Yih WK, Lieu TA, Kulldorff M, et al. Intussusception risk after rotavirus vaccination in US infants. N Engl J Med. 2014;370(6):503–12.

27. Patel MM, Clark AD, Glass RI, et al. Broadening the age restriction for initiating rotavirus vaccination in regions with high rotavirus mortality: benefits of mortality reduction versus risk of fatal intussusception. Vaccine. 2009;27(22):2916–22.

28. Operational guidelines. Introduction of Rotavirus vaccine in Universal Immunization Program in India. Immunization division, Ministry of Health and Family welfare, Government of India. December 2016.

29. World Health Organization. Detailed Review Paper on Rotavirus Vaccines (presented to the WHO Strategic Advisory Group of Experts (SAGE) on Immunization in April 2009). Geneva, World Health Organization, 2009. Available from: http://www.who.int/immunization/ sage/3_Detailed_Review_Paper_on_ Rota_Vaccines_17_3_2009.pdf. Accessed November 08, 2018.

30. Kirkwood CD, Ma LF, Carey ME, Steele AD. The rotavirus vaccine development pipeline. Vaccine. 2017. https://doi.org/10. 1016/j.vaccine.2017.03.076

31. Wu D, Yen C, Yin ZD, Li YX, Liu N, Liu YM, et al. The public health burden of rotavirus disease in children younger than five years and considerations for rotavirus vaccine introduction in China. Pediatr Infect Dis J. 2016;35(12):e392–8.

32. Groome MJ, Koen A, Fix A, Page N, Jose L, Madhi SA, et al. Safety and immunogenicity of a parenteral P2-VP8-P[8] subunit rotavirus vaccine in toddlers and infants in South Africa: a randomised, double-blind, placebo-controlled trial. Lancet Infect Dis. 2017;17(8):843–53.

33. Sullivan SP, Koutsonanos DG, Del Pilar Martin M, Lee JW, Zarnitsyn V, Choi SO, et al. Dissolving polymer microneedle patches for influenza vaccination. Nat Med. 2010;16(8):915–20.

Growth in Children-When to Worry

Parent Education Series

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Growth is an indicator of physical and mental well being of the child. Weight and height are the objective indicators to see the growth of the child. Normal growth is defined as the progression of changes in height, weight, and head circumference that are compatible with established standards for a given population.

As a parent we are always concerned with questions like; Is my child growing normally? Will he be tall when he grows up? Is his weight and height normal for the age?

There are certain facts, which a parent should know, so that they report to a doctor if they feel some discrepancy in the growth pattern of the child. Timely detection of growth disorder and appropriate management goes a long way in attaining normal weight and height for the child.

Every child should be on a growth chart. Regularly weight as well as height should be monitored and plotted on the country specific growth charts (1) to know how the child is growing with respect to the population where he or she is born.

On an average kids grow 10 inches in the first year, 4 inches in their second, then about 2 inches per year until puberty begins. Children hit their peak growth spurt in puberty. For girls it is between 8 and 13 years, and for boys, it is usually between 9 and 14 years. Girls grow 3 to 3 and half inch per year during their growth spurt. Boys grow about 4 inches per year during this time. (3)

Factors affecting growth of the child are weight and height at birth, height of parents, nutritional status of child and emotional well being of the child. Causes of short stature include familial short stature(parents are short) , constitutional short stature (child is a late grower), chronic diseases, hormonal deficiencies like growth hormone, thyroid hormone, nutritional deficiencies due to malabsorption. Children at risk for growth problems are family history of growth problems, genetic disorders , children with any other systemic diseases

Red flag signs

1. Child is shortest in the class
2. No change in clothes size yearly
3. Child height less than third percentile line of growth chart

4. Falling off two percentile lines on the growth chart
5. Early puberty-less than 8 years in girls and 9 years in boys
6. Delayed puberty

Besides as a parent we keep hearing suggestions from people, but there are lots of myths in the general population. Here are few myths and also facts related to growth.

Myths and facts

Myth	Children grow till 18 years
Fact	Every child grows at a different pace. Age at which final height is reached is different for different kids depending on the time of puberty of the child. So there can't be any fixed age. Some kids stop at 12 years and some can continue till 15 or 18 years too. Here lies the importance of continuous monitoring of the child.

Myth	There is no correlation between growth and puberty
Fact	Final height is related to end point of puberty. So a child who enters puberty early will stop earlier and a child who has puberty late will grow for a longer time. (4)

Myth	Growth treatment is helpful for kids with short parents also
Fact	Final height is related to end point of puberty. So a child who enters puberty early will stop earlier and a child who has puberty late will grow for a longer time. (4)

Myth	We should wait for 12 -13 years for the child to grow, before visiting a specialist which can help us with the height
Fact	Children grow throughout childhood at a certain pace. If child is not growing for some years in between that will be reflected in the final height of the child. If we wait till 12 -13 years for treatment and there was a major reason for poor growth since early childhood, we have definitely lost important years of growth for the child

Myth	Regular height measurement is not important for the child if we feel that he is growing fine.
Fact	Every child should be on growth chart. They should be gaining height at a regular pace. When we are regularly monitoring then only if there is any time when the height gain is not adequate, we can timely do an intervention and treat the child in the best possible way.

Myth	Being tall is never abnormal; it is an indication of good health.
Fact	There are certain disease conditions where child can be abnormally tall, these also need to be identified. Child of early puberty may also be taller in the early part of childhood, but their final height will be less.

Myth	Growth hormone treatment has side effects
Fact	If child is growth hormone deficient, growth hormone replacement will be only beneficial to the child. In all patients it is given in replacement doses, with continuous monitoring of all parameters.

Bibliography

1. Vaman V Khadilkar, Anuradha Khadilkar. Revised Indian Academy of Pediatrics 2015 growth charts for height, weight and body mass index for 5-18-year-old Indian children; 2015 Volume: 19 Issue: 4 Page: 470-476
2. Kuczmarski RJ,Ogden CL, Guo SS, Grummer-Strawn LM, Flegal KM, Mei Z, et al. 2000 CDC growth charts for the United States: Methods and development. Vital Health Stat 11 2002;246:1-190.
3. Melmed S, Polonsky KS, Larsen PR, Kronenberg HM. Williams Textbook of Endocrinology. 12th ed. chapter 23. Philadelphia, PA: Saunders; 2012. Endocrine Regulation of Growth; pp. 1009–37.
4. Biro FM, McMahon RP, Striegel-Moore R, Crawford PB, Obarzanek E, Morrison JA, Barton BA, Falkner F Impact of timing of pubertal maturation on growth in black and white female adolescents: The National Heart, Lung, and Blood Institute Growth and Health Study. J Pediatr. 2001 May; 138(5): 636-43

Peeping into the Heart

Rheumatic Heart Disease

Dr Gaurav Aggarwal

What is rheumatic heart disease (RHD)?

Rheumatic heart disease is a condition in which heart valves have been permanently damaged by rheumatic fever.

What causes rheumatic heart disease?

Rheumatic heart disease is caused by rheumatic fever. This is an inflammatory disease that can affect many connective tissues, especially in the heart, joints, skin, or brain. The heart valves can be inflamed and become scarred over time. This can result in narrowing or leaking of the heart valve and can lead to heart failure. It often occurs in children ages 5 to 15.

Who is at risk for rheumatic heart disease?

Untreated or under-treated streptococcal infections can increase the risk for rheumatic heart disease. Children who get repeated streptococcal throat infections are at the most risk for rheumatic fever and rheumatic heart disease.

What are the symptoms of rheumatic heart disease?

A recent history of strep infection or rheumatic fever is key to the diagnosis of rheumatic heart disease. Symptoms typically start 1 to 6 weeks after a bout of strep throat.

Following are the most common symptoms of rheumatic fever:

- Fever
- Swollen, tender, red and very painful joints (very often the knees and ankles)
- Lumps under the skin (rheumatic nodules)
- Red, raised, lattice-like rash, often on the chest, back, and belly
- Shortness of breath and chest discomfort
- Uncontrolled movements of arms, legs, or facial muscles (Chorea)

Symptoms of rheumatic heart disease depend on the degree of valve damage and may include:

- Shortness of breath (very often with activity or when lying down)
- Chest pain
- Swelling

How is rheumatic heart disease diagnosed?

People with rheumatic heart disease will have or recently had a streptococcal infection. A throat culture or blood test may be used to check for this.

They may have a murmur or rub that may be heard during a routine physical exam. The murmur is caused by the blood leaking around the damages valve. The rub is caused when the inflamed heart tissues move or rub against each other.

Along with a complete health history and physical exam, tests used to diagnose rheumatic heart disease may include:

- **Echocardiogram**:
  - o Echo can show narrowing or leakage of valves, heart enlargement. It's the most useful test for diagnosing heart valve problems.
- **Electrocardiogram**:
  - o ECG is helpful in diagnosing abnormal rhythms (arrhythmias or dysrhythmias).
- **Chest X-ray**: This may be helpful in pulmonary vascularity as well as in identifying cardiac enlargement.
- **Blood tests**. Certain blood tests may be used to look for infection and inflammation such as CBC, ESR, CRP, ASO titre, Anti-DNase B etc.

How is rheumatic heart disease treated?

Treatment depends in large part on how much damage has been done to the heart valves. In severe cases, treatment may include surgery to replace or fix a badly damaged valve.

The best treatment is to prevent rheumatic fever.

Antibiotics can often treat strep infections and keep rheumatic fever from occurring. Anti-inflammatory medicines may be used to reduce inflammation and lower the risk of heart damage. Other medicines may be needed to manage heart failure.

People who have had rheumatic fever are often given daily or monthly antibiotic treatments. To reduce inflammation, aspirin, steroids, or nonsteroidal anti-inflammatory drugs (NSAIDs) may be given.

What are possible complications of rheumatic heart disease?

Some complications of rheumatic heart disease include:

- **Heart failure**: This can occur from either a severely narrowed or leaking heart valve.
- **Bacterial endocarditis**: It may occur when rheumatic fever has damaged the heart valves.
- **Complications of pregnancy and delivery due to heart damage**: Women with rheumatic heart disease should discuss their condition with their healthcare provider before getting pregnant.
- **Ruptured heart valve**: This is a medical emergency. It must be treated with surgery to replace or fix the heart valve.

What can I do to prevent rheumatic heart disease?

Rheumatic heart disease can be prevented by preventing strep infections, or by treating them with antibiotics when they do occur.

Living with rheumatic heart disease

You will need to have follow-up with cardiologist. Depending on the amount of heart damage, you may have some activity restrictions.

Key points about rheumatic heart disease

- Rheumatic heart disease is a condition where the heart valves have been permanently damaged by rheumatic fever.
- Rheumatic fever is an inflammatory disease that can affect many connective tissues, especially in the heart.
- Untreated or under-treated strep infections put a person at increased risk. Children who get repeated strep throat infections are at the most risk for rheumatic fever and rheumatic heart disease.
- A recent history of strep infection or rheumatic fever is key to the diagnosis of rheumatic heart disease.
- Treatment depends on how much damage has been done to the heart valves. It may even include surgery to replace or fix a badly damaged valve.

Autism: Multidisciplinary Early Intervention

Can Help Manage Autism in Children

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Autism is a neurodevelopmental disorder characterized by impaired social interaction, verbal and non-verbal communication and presence of restricted and repetitive behaviors. India is becoming serious towards inclusion of children with special needs, early screening, diagnosis and intervention and different organizations with multidisciplinary teams of professionals are also serving backbone for the rehabilitation process. Signs and symptoms of autism are present very early in the child. Parents are in the best position to look for the early signs of autism which can be not making eye contact (e.g., at the time of being fed), not smiling when smiled at, poor or no response to his or her name or to the sound of a familiar voice, not following the objects visually, no use of index finger pointing, waving, and gestures, not following the gesture when you point things out, not seeking attention & poor initiation or response to cuddling. Imitation of facial expressions and gestures is not present, and there is difficulty in associatively playing with other children and many times these children are aloof. It is not necessary that all these symptoms need to be present in a single child but it varies from one to another depending on severity of autism. Whenever a child is delayed or doesn't achieve the age-appropriate developmental milestones in time, there should be preliminary screening and referral for ruling out any developmental disorders. There is a myth that is widely followed that some children especially boys usually speak late so we keep on waiting for the crucial early few years. Accepting the wait and see approach can have disastrous effects on the development of children with neurodevelopmental disorders. Apart from impaired communication and

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poor social interaction, there are some self-stimulatory behaviors e.g., flickering of hands, hand flapping, rocking back and forth, lining up toys, spinning objects, staring at lights, moving fingers in front of eyes, snapping fingers, repeating words or noises as well as hypo or hypersensitivity towards sounds can be present in these children. Early signs of not having normal milestones are the red flags for autism and as the child gets older these become diverse. Impairments in later years in social interaction is about not associatively interacting with other children age appropriately and not having proper communication which includes both understanding and expression. The symptoms range from mild, moderate to severe. They have their own ways of learning. The difference can be made to their lives when they are taught the way they learn.

Every year at child development clinic sir ganga ram hospital a mass awareness campaign is done for autism on the occasion of world autism awareness day on 02 April. The aim of the initiative is to make people, parents and caregivers aware of the early signs of autism. "Early Intervention" is the focus of the initiative. There is a need for the sensitization of people and professionals to look for early signs of autism. Pediatricians are the first contact for a parent. Parental concerns about delays in speech and language, poor response to name, extremes of behaviors from being self absorbed to extreme hyperactivity and poor socialization need to be taken very seriously and advised developmental screening.

Early intervention is between 0 to 3 years of age. It is the key to management of children with autism, so the first step is to catch them early and young. The rise in the number of cases of autism has increased for the last 10 years. In early nineties not many people knew about the disorder but the alarming rise has brought focus to it. Worldwide estimates of prevalence of autism are 1 in every 68, which is a clear indication that we have to be ready to help these children and their families.

Special schools have made significant contribution when it comes to management of disabilities with developmental disorders. While special schools are often seen providing the most appropriate placement for students with special educational needs, a heightened awareness about integration of children with autism and other special needs, there is a necessity to create a more equitable society calling for a shift away from discrimination to inclusion. Teachers are well equipped in the metropolitan cities in special schools but lot needs to be done for the upliftment of the infrastructure for providing all the services in the classroom in rural areas.

It is the high time to eliminate any kind of discriminations that children with autism face at different stages in the society due to social and other limitations in infrastructure, which create a disadvantage for these children. Early preparations for their inclusion into the mainstreaming are very important for the overall health and homogeneity of society. There is need for proper structure and human resource to cater to the children with autism.

Not taking children with special needs as a part of society we limit the potential of these children to use the already existing services and hence inclusion becomes more difficult and the gap keeps on increasing. Deviation in children with autism is being made fun of, harassed at different levels starting from the relatives, parental discord, familial support, school admissions, right to live with dignity and access to all the facilities available to other typically developing children. Children with autism if provided early intervention can do very well in their lives.

Creating opportunities for these children will result in the change in mindset that they are lifelong dependent and hence shouldn't be left out from the services provided to the other children. Understanding differently, learning in other ways, some deviant attributes shouldn't lock our service systems to help these children. Advocacy, support, services, health and education is of prime importance for these children. We have come a long way and now the field of psychological rehabilitation and developmental pediatrics and psychology is gaining momentum like anything. Prejudice against these children even without knowing the real conditions imbibes the thought that their difference can't be integrated into our societal norms, which is wrong.

We need to create opportunities where lot of people from varied backgrounds can discuss the support systems for these children in the form of support groups. Sense of belongingness, inclusion, right to life and education, respect and dignity, recreation, and helping them reach independent living as well as the academic success should be discussed in detail wherein the state government has a crucial role to play. There is a need not only to create awareness about the disorder but at the same time sensitizing people about the different needs that these children have.

Autism diagnosis and intervention is not done by a single individual but by a team of experts viz. developmental pediatrician, psychologist, who work as a team with therapists which include special educators, speech therapists, occupational therapists, and other rehabilitation professionals. Parents need to monitor their child`s progress in different areas of development which include motor skills, adaptive functioning, personal social skills and language. No closed-door therapies are recommended for them.

Parents of children with autism in metropolitan cities are breaking the shackles of helplessness and coming forward to educate fellow parents about how to manage the children with autism. Myths about autism and word of mouth interventions result in the chaos and unscientific therapies. Infact Food and Drug Administration in USA have heavily cracked down recently on the myths called intervention for autism like chelation therapies, hyperbaric oxygen therapy, miracle mineral solutions, protobiotic products and detoxifying clay baths. We need to make parents and people aware about the scientific interventions backed by valid research e.g. behavior modification, which have proven very effective in management of autism.

Research supports the Inclusion of children as it has been seen that the referrals for disruptive behaviors go down in the schooling hours. Individual attention is what is needed for these children. In adults inclusion can lead to vocational training, which will help getting a job, and be a part of more diverse social group. Inclusion in early years will help in greater understanding of the differences in these children, which can be minimized by proper intervention and individual attention.

Key Message From "Consensus Statement of the Indian Academy of Pediatrics on Evaluation and Management of Autism Spectrum Disorder:

1. The diagnosis of Autism Spectrum Disorder needs the involvement of a multidisciplinary team working together.
2. The intervention administered by a clinician should be 1:1 or 1:2 (child to therapist

ratio); individualized for each child and with an interdisciplinary team that documents evaluation and intervention.

3. Parent-education and home interventions are more likely to be effective, if part of a multidisciplinary intervention program.
4. Psychopharmacologic interventions do not treat the underlying ASD. However, they can improve the child's functioning and the ability to participate in behavioral interventions.
5. There is no evidence for effectiveness of 'complementary/ alternative' therapies and pediatricians should be able to counsel caregivers not to opt for these therapies.

Screening for all children should be done by a standardized autism screening tool at 18 and 24 months of age. If the child is above 18 months, then ASD specific screening tool is to be administered. If the child is below 18 months, then: a) evaluation of social communication skills, b) commence parental education and c) reschedule next visit after 3 months (if child's age is less than 12 months) or after 1 month (if child's age is more than 12 months). If concerns persist, then administer the ASD specific screening tool. If screening results are positive or concerning then: a) continue parental education, b) refer the child for comprehensive ASD evaluation, c) initiate an early intervention program, d) evaluate hearing status and e) schedule next follow-up visit after a month."

Management of autism starts with the diagnosis, which is done by developmental pediatrician and psychologist (Clinical or Rehabilitation). Research supports that behavior modification does allow for relatively normal development in the child and reduce undesirable behaviors. These children do have the potential to be integrated into mainstream schooling provided early intervention by the team of professionals is provided to them. There are no medications currently approved to treat autism, but medications may be used to treat certain symptoms, such as anxiety, hyperactivity, sleep disturbance, and other behaviors that may lead to injury. Scientific temper needs to be inculcated and research-based interventions should be preferred as the only interventions for autism. We have come a long way to go for fighting for children with special needs, their early identification, management, intervention as well as their inclusion into society.

Interesting Journey of Development

Oral Rehydration Solution

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Oral Rehydration Solution (ORS) is the most effective, simple, safe, economical, easily accessible remedy to prevent and treat dehydration. Dehydration is the most common serious complication of diarrheal illness and is responsible for "diarrheal deaths". There are over 5,25,000 such deaths every year globally, 20% of which occur in India alone.

Although ORS seems simplistic and natural remedy for dehydration, it was late to be discovered. In first half of last century, IV fluids was the standard of care for management of dehydration. It was only in 1940s that some pediatricians tried oral rehydration (1) and in 1953, an Indian doctor, Hemendra Nath Chatterjee while working on cholera in Calcutta, managed to rehydrate 186 patients with "mild to moderately severe cholera ... without intravenous or parenteral transfusions" with zero mortality and published his findings in the Lancet (2). However, Chatterjee's work failed to provide controls and net fluid balance sheets, scientific tools that might have fostered credibility. His use of some exotic plants to halt vomiting and diarrhoea, as well as his administration of some rehydration therapy by enema possibly further led to lack of recognition and follow-up studies (3). It was in 1960 that Robert K Crane demonstrated sodium-glucose co-transport in intestinal cells (4) and based on his studies an Iraqi doctor Qais Al-Awqati, who was still doing his residency in 1966 decided to use glucose-salt solution in his patients of cholera during an epidemic. He successfully treated the majority of his 500 patients with an imprecisely measured glucose-sodium solution, saving the IV fluids for patients in shock (3). Subsequently, Cholera Research Laboratory, Dhaka, and the Infectious Diseases Hospital, Calcutta, contributed to the development of modern oral rehydration salt (ORS) solution. Pierce et al and Hirscchorn et al working separately in these laboratories in 1967-68 demonstrated that patients of cholera can absorb electrolytes very well when given orally as standard ORS. In next decade (1968-78) scientists like Dr. Dilip Mahalanabis, Nalin et al, Sircar et al, De et al and Chatterjee et al demonstrated the efficacy of standard ORS convincingly. They showed that it can reduce need of IV fluid by over 80% and is effective in diarrhea because of any cause, not just cholera (1, 5). Based on all these studies, the World Health Organization (WHO) launched the global diarrheal diseases control program with ORS at its heart in 1978. The composition of Standard WHO-ORS is given in table-1.

Constituent	Concentration
Sodium Chloride	3.5 gm/L
Potassium Chloride	1.5gm/L
Sodium Bicarbonate	2.5 gm/dL
Glucose anhydrous	20gm/L

Constituent	Concentration
Sodium	90 mMol/L
Potassium	20 mMol/L
Chloride	80 mMol/L
Bicarbonate	30 mMol/L
Glucose	111 mMol/L
Total osmolarity	331 mMol/L

Further research on ORS continued. In 1979, Dr. Daniel Pizarrow and colleagues showed the WHO-ORS was effective even for neonates with dehydrating diarrhea and safe if used along with plain water in a 2:1 regimen. To avoid confusing illiterate mothers in developing countries, Dutta et al and Roy et al in 1984 reported the safety and simplicity of uninterrupted breastfeeding together with ORS (5). In the same year, 1984, sodium bicarbonate in ORS was replaced by trisodium citrate to improve stability of ORS in tropical hot/ humid climates. It was also shown that use of ORS with trisodium citrate also led to some reduction of purge rate possibly through direct action of trisodium citrate on intestinal cells leading to increased absorption of sodium and water (6)(7). Table-2 gives composition of this "citrate-ORS".

Table-2. Composition of citrate-containing standard WHO-ORS

Constituent	Concentration
Sodium Chloride	3.5 gm/L
Potassium Chloride	1.5 gm/L
Trisodium citrate, dehydrate	2.9 gm/L
Glucose, anhydrous	20 gm/L

Constituent	Concentration
Sodium	90 mMol/L
Potassium	20 mMol/L
Chloride	80 mMol/L
Citrate	10 mMol/L
Total osmolarity	311 mMol/L

Another line of research was going on in 1980s in International Centre for Diarrheal Disease Research (ICDDR, B) in Dhaka, Bangladesh, as there was scarcity of ORS packets due to seasonal availability of sugar, especially in rural areas. So they were researching and investigating what source of carbohydrate might be available and effective. Research was done on corn, wheat, sorghum, potatoes, rice and other substrates, but chose rice as rice was the most unlikely to cause allergies and was available in plenty in the reason. Although the research showed favourable outcomes with this rice-based ORS in terms of reduced stool volumes (by 24-49%) and duration (by 30%), increase in body weights, had the highest recovery, reduced need of IV fluids, possibly because on its hydrolysing into glucose, amino acids, and oligopeptides emerge. Each one of these

chemicals facilitates sodium absorption through separate pathways. It also has a better taste, improved compliance and provides more calories and other nutrients unlike glucose based ORS (7). However, somehow it has not become popular, possibly because of short shelf-life: rice based ORS ferments within 8-24 hours making it useless, and the rice or pop rice needs to be ground and cooked before adding it is the solution. In fact even recent studies have shown benefits of rice and other food based ORS (based on maize, millet, potato or wheat) than glucose based ORS (8, 9). Similarly, scientists have tried to add aminoacids (glycine or alanine) in place of glucose in their attempts to fine "Super ORS": ORS that not only rehydrates but also help in recovery of diarrheal illness faster. And since zinc is known to help in regeneration of gut epithelium and thus help in recovery of diarrheal illness, addition of zinc to "super ORS" is sometimes labelled as "super super ORS".

Despite all these developments going on simultaneously, citrate-containing WHO ORS continued to be the standard ORS for management of dehydration due to acute diarrhea in children of all ages and in adults too for over 15 years (from 1984 to 1999). However, this composition was not appropriate for severely malnourished kids who often have associated diarrheal illness. These kids have abnormally high levels of sodium and are deficient in potassium and thus they need a different composition of ORS. In 1999, WHO published a manual, "Management of severe malnutrition: a manual for physicians and other senior health workers" (10) where it recommended a specially formulated ORS called "ReSoMal (Rehydrating Solution for the Malnourished) for managing dehydration in severely malnourished children. It not only contains much less sodium (half of standard ORS), higher amount of potassium (double the amount in standard ORS), but also magneium, Zinc and copper so that these deficiencies are also corrected while rehydrating these kids. Table 3 gives composition of ReSoMal.

Table-3. Composition of ReSoMal

Constituent	Concentration	*Constituent*	Concentration
Sodium Chloride	1.75 gm/L	***Sodium***	45 mMol/L
Sodium Citrate	1.45 gm/L	***Potassium***	40 mMol/L
Potassium Chloride	2.54 gm/L	***Chloride***	70 mMol/L
Potassium Citrate	0.65 gm/L	***Citrate***	7 mMol/L
Magnesium Chloride anhydrous	0.61 gm/L	***Magnesium***	3 mMol/L
Zinc Acetate	0.0656mg/ L	***Zinc***	0.3 mMol/L
Copper sulphate anhydrous	0.0112 mg/L	***Copper***	0.045 mMol/L
Sucrose	25gm/L	***Glucose***	125 mMol/L
Glucose, anhydrous	10 gm/L	***Total osmolarity***	300 mmol/ L

Resomal was made available commercially and in case of non-availability, it could be reconstituted by adding one packet of standard WHO-ORS in two litres of water (instead of one litre) and adding 50gm of sucrose (25gm/L) and 40mL of mineral mix solution.

In 1990s, concerns were also raised about risk of hypernatremia with use of standard ORS, in well-nourished children also. Many countries gradually started recommending ORS with lower osmolarity (224-245 mmol/L instead of 311 mmol/ L of standard WHO-ORS). Gradually, it was clear that even in developing countries, use of lower-osmolarity ORS was not only safer, but also had some effect on reduction of duration of diarrhea, unlike standard ORS which had no significant effect (6). This was especially true for non-chlolera diarrhea. The incidence of vomiting also reduced with use of low-osmolarity ORS. Studies to evaluate this approach were reviewed at a consultative technical meeting held in New York (USA) in July 2001, and technical recommendations were made to WHO and UNICEF on the efficacy and safety of reduced osmolarity ORS in children with acute non-cholera diarrhoea, and in adults and children with cholera. In 2003, the WHO and UNICEF finally recommended that this low-osmolarity ORS for acute diarrhea cases of all etiologies and in all age groups, including adults. Table-4 gives the composition of low-osmolarity ORS. Currently, this low osmolarity is the new standard WHO-ORS.

Table-4 Composition of low osmolarity WHO-ORS

Constituent	***Concentration***
Sodium Chloride	2.6 gm/L
Potassium Chloride	1.5 gm/L
Trisodium citrate, anhydrous	2.9 gm/L
Glucose, anhydrous	13.5 gm/L

Constituent	*Composition*
Sodium	75 mMol/L
Chloride	65 mmol/L
Potassium	20 mMol/L
Citrate	10 mMol/L
Glucose	75 mMol/ L
Total osmolarity	245 mMol/L

References

1. da Cunha Ferreira RM, Cash RA. History of the development of oral rehydration therapy. Clin Ther 1990;12 Suppl A:2-11; discussion 11-3.
2. Hemendra Nath Chatterjee, 'Control of vomiting in cholera and oral replacement of fluid', Lancet, 1953, ii: 1063.
3. Ruxin JN. Magic Bullet: History of Oral Rehydration Therapy. Medical History, 1994; 38: 363-97.
4. Hamilton KL. Robert K. Crane-Na(+)-glucose cotransporter to cure?. Front Physiol. 2013; 4: 53.

5. Bhattacharya SK. History of development of oral rehydration therapy. Indian J Public Health. 1994; 38(2): 39-43.

6. Multicentre evaluation of reduced-osmolarity oral rehydration salts solution. International Study Group on Reduced-osmolarity ORS solutions. Lancet 1995: 4;345 (8945): 282-5.

7. Bhattacharya SK, Dutta P, Dutta D, et al. Super ORS. Indian J Public Health. 1990 ; 34 (1): 35-7.

8. EMurugaiah C, Palasuberniam P, Falah MS, et al. Food based Oral Rehydration Therapy: Towards a Better Cholera Treatment. J Prob Health, 2016; 4: 151.

9. Kühn J, Finger F, Bertuzzo E, Borgeaud S, Gatto M, Rinaldo A, et al. Glucose- but Not Rice-Based Oral Rehydration Therapy Enhances the Production of Virulence Determinants in the Human Pathogen Vibrio cholerae. PLoS Negl Trop Dis, 2014; 8(12): e3347.

10. Management of severe malnutrition: a manual for physicians and other senior health workers. Geneva: World Health Organization; 1999.

Section II: Office

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Dr Smita Mishra
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Section III: Activity

IAP Delhi Event Calender 2021

IAP Delhi Team 2021

Dr Lalit Mendiratta
President, IAP Delhi

Dr Manish Gupta
Secretary, IAP Delhi

Dr Deepak Gautam
President Elect., IAP Delhi

Dr Pankaj Garg
Treasurer, IAP Delhi

Dr Anil Vaishnavi
Vice President, IAP Delhi

Date	Academics	Cocurricular
14th-15th January	**E-Rheumatpedia**	*Academics Activity*
Sunday, 24th January	**Raag-n-Sur**	*Cocurricullar Activity*
Thursday, 18th February	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
25th-26th February	**E-Dermapedia**	*Academics Activity*
Sunday, 28th February	**Cyclathon**	*Cocurricullar Activity*
Thursday, 18th March	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 21th March	**Downs Syndrome Day**	*Cocurricullar Activity*
25th-26th March	**Gastropedia**	*Academics Activity*
Thursday, 15th April	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 25th April	**Geet aur Niratya***	*Cocurricullar Activity*
13th-14th May	**Carcon***	*Academics Activity*
Saturday, 15th May	**IAP Delhi Sports Meet***	*Cocurricullar Activity*
Thursday, 20th May	**IAP Delhi Monthly Clinical Meeting ***	*Academics Activity*
Monday, 31th May	**Case Based CME**	*Cocurricullar Activity*
Saturday, 5th June	**World Environment Day (Plantation by Members)**	*Cocurricullar Activity*
Thursday, 17th June	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 20th June	**Antakshari - IAP Delhi Members**	*Academics Activity*
Sunday, 20th June	**Delhi Respicon**	*Academics Activity*
Monday, 21st June	**International Yoga Day Celebrations**	*Cocurricullar Activity*
Monday, 21st June	**IAP Delhi Financial Fitness Class "Make Your Money Work"**	*Cocurricullar Activity*

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IAP Delhi Event Calender 2021

Date	Academics	Cocurricular
Monday, 21st June	**IAP Delhi Financial Fitness Class "Make Your Money Work"**	*Cocurricullar Activity*
24th-25th June	**Neuropedia: Paediatric Neurology**	*Academics Activity*
Saturday, 26th June	**International Day against substance abuse (Book Release)**	*Cocurricullar Activity*
Monday, 28 June	**Haematology CME**	*Academics Activity*
1st-2nd July	**Dysbiosis Module by IAP Delhi**	*Academics Activity*
Thursday, 15th July	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
17th-18th July	**ResRCHcon 2021**	*Academics Activity*
Sunday, 18th July	**Hematopedia**	*Academics Activity*
Thursday, 29th July	**ORS Day *(Book Release on Diarrhea)***	*Cocurricullar Activity*
Thursday, 12th August	**Nephropedia**	*Academics Activity*
Sunday, 1st August	**Breastfeeding Week**	*Cocurricullar Activity*
Thursday, 19th August	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 29th August	**IAP Charity Day**	*Cocurricullar Activity*
Thursday, 16th September	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Saturday, 25th September	**National Daughter Day**	*Cocurricullar Activity*
2nd & 3rd October	**PCNI 2021**	*Academics Activity*
14th-15th October	**Adolescon**	*Academics Activity*
Thursday, 21st October	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 14th November	**Children's Day**	*Cocurricullar Activity*
Thursday, 18th November	**IAP Delhi Monthly Clinical Meeting**	*Academics Activity*
Sunday, 21st November	**Immunization Update**	*Cocurricullar Activity*
Sunday, 28th November	**IAP ALS Program**	*Cocurricullar Activity*
Sunday, 12th December	**IAP Delhi Annual Day**	*Academics Activity*

** List of events which could not be done due to COVID19 pandemic*

IAP Delhi July 2021 Activities Report

1 e-Pulmopedia

22nd-23rd July 2021 (Online Webinar by IAP Delhi)

Pediatric Pulmonology Basics conference was organized on DDAP Platforms
The conference was well attended by approximately 100 delegates from Delhi and North India. The faculties were from AIIMS, SGRH and other reputed institutes.

2 IAP Diarrhea ORS Awareness Week

26th July 2021

was conducted in all city branches under guidance of IAP Delhi. A book on ***Diarrhea awareness ORS & ORT (Oral Rehydration Solution & Oral Rehydration Therapy) was released at GTB Hospital by CIAP President Dr Piyush Gupta.*** The book has been authored by IAP Delhi Office Bearers. Programs were conducted at

1. *Monday, 26 July, 2021,* ***Deen Dayal Upadhyay Hospital,***
2. *Tuesday, 27 July, 2021,* ***Ram Manohar Lohia Hospital***
3. *Wednesday, 28 July, 2021,* ***Batra Hospital***
4. *Thursday,, 29 July, 2021,* ***UCMS & GTB Hospital***
5. *Friday, 30 July, 2021,* ***MAMC & Lok Nayak Hospital***
6. *Saturday, 31 July, 2021,* ***Dr Baba Saheb Ambedkar Hospital***

3 IAP Breastfeeding Week

1st-7th August 2021

IAP Breastfeeding Promotion Week was celebrated equally in multiple institutes under guidance from IAP Delhi.

1. *Wednesday, 4th August, 2021,* ***Jaipur Golden Hospital***
2. *Monday, 2nd August, 2021,* ***UCMS & GTB Hospital***
3. *Wednesday, 4th August, 2021,* ***Sir Ganga Ram Hospital***
4. *6th & 7th August, 2021,* ***Lady Hardinge Medical College & Associated Kalawati Saran Children's Hospital***
5. *Friday, 6th August, 2021,* ***Atal Bihari Vajpayee Institute of Medical Sciences & Dr Ram Manohar Lohia Hospital, New Delhi***
6. *Saturday, 7th August, 2021,* ***Swami Dayanand Hospital, Shahdara, Delhi***

4 CPR Day (IAP BLS MASS Awareness Program)

Sunday, 8th August 2021

To celebrate ***CPR Day, IAP Delhi*** *conducted* ***IAP BLS Course for Pediatricians at Auditorium, Lady Hardinge Medical College****. It was attended by 40 delegates. The Faculties for the event were Dr LN Taneja, Dr Shalu Gupta, Dr Pradeep Debta and Dr Kishan Jani.*

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IAP Delhi July 2021 Activities Report

5 ECD-NC North Zone TOT

1st August 2021

IAP Delhi hosted ECD-NC North Zone TOT at Hotel Pullman for representatives of seven states of IAP Delhi North zone. The event was conducted under guidance of Dr Piyush Gupta and Dr Sangeeta Yadav.

6 IAP Delhi Monthly Clinical Meeting

15th August 2021

was conducted on DIAP platform; an excellent ***talk on Development of Vaccines by Dr Gagandeep Dang and clinical presentation by Action Balaji Hospital***

7 Financial pearls

27th August 2021

organized by IAP Delhi on DIAP platform by Dr Brijesh Dalmia

Thanks & Regards,

Dr Manish Gupta

General Secretary

IAP Delhi 2021

** List of events which could not be done due to COVID19 pandemic*

Journal Clippings

1 Incidence of Kawasaki disease before and during the COVID-19 pandemic: a retrospective cohort study in Japan

Kawasaki disease (KD) is a disease of unknown etiology, but the epidemiological evidence points towards infectious cause. During the COVID-19 pandemic, measures for mitigating SARS-CoV-2 transmission also suppressed the circulation of other contagious microorganisms. Lio et al from Japan compared the incidence of KD during the time-period of COVID-19 restrictions (2020) and compared it with that in pre-pandemic period (2016-19). They found that the number of KD cases (n=66) between April and December 2020 was 40% of the average in the same period in 2016–2019 (165/year). Annual KD incidence was 315, 300, 353, 347 and 188/100 000 children aged 0–4 years in 2016–2020, respectively. The difference-in-difference value of KD incidence was significantly reduced in the fourth quarter in 2020 (−15.8, 95% CI −28.0 to −3.5), compared with that in 2016–2019. Sentinel surveillance showed a marked decrease of all infectious diseases except exanthema subitum after the beginning of the COVID-19 pandemic. Thus, the study showed that the number and incidence of KD was dramatically reduced during the COVID-19 pandemic in Japan. This change was temporally associated with decreased activities of various infectious diseases other than COVID-19, supporting the hypothesis of infection-triggered pathogenesis in KD.

 Read the full artical

https://bmjpaedsopen.bmj.com/content/5/1/e001034

2 Paediatric emergency department dog bite attendance during the COVID-19 pandemic: an audit at a tertiary children's hospital (BMJ Paediatrics Open 2021)

3. Foreign body ingestion during the COVID-19 pandemic: a retrospective single centre review (BMJ Paediatrics Open 2021)

4. Changes in children's surgical services during the COVID-19 pandemic at a tertiary-level government hospital in a lower middle-income country (BMJ Paediatrics Open 2021)

The ongoing pandemic of SARS-CoV2 and the restrictions on movements and gatherings as a part of mitigating measures has resulted in a significant impact on the incidence of other diseases. Thew current issue of BMJ Pediatrics Open has published at least 3 studies on documenting and analyzing the change. Tulloch et al studied the change in Paediatric emergency department dog bite attendance at a tertiary children's hospital and found that dog bite attendance rose in conjunction with the introduction of COVID-19 public health measures and reached a peak in July 2020 (44 dog bites, 1.3% of all attendances were due to dog bites). This was a three-fold increase in dog bite attendance. By September 2020, attendance had returned to normal. The demographic profile of child dog bite victims remained the same. Boys had the highest attendance rates in 7–12 year-olds, girls in 4–6 year-olds. Girls showed higher attendance rates in the summer, while boys' attendance rates were constant throughout the year.

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Festa et al from UK studied the change in incidence of foreign body ingestion and demonstrated that during the 6-month pandemic period 2.5 times more children were referred with foreign body ingestion (n=25) in comparison to the control period (n=10). There was also a significant increase in the proportion of button battery and magnet ingestions during the COVID-19 pandemic (p 0.04). Farookh et al from Bangladesh studies the changes in Department of Surgery. They found that Admissions were only 41% of previous year (635 vs 1549), and OPD attendances were only 28% of previous year (603 vs 2152). Admission of children reduced by 65.8%, (as compared to only 7.6% reduction in neonatal admissions). The median age of the admitted patients was significantly lower during the pandemic period (3 vs 4 years, p<0.01). Acute appendicitis (151, 9.8%) and trauma (61, 9.6%), respectively, were the the most common causes of admission during the reference and the pandemic period. Elective surgeries were only 17% and emergency surgeries were 64% of previous year (p<0.01). Appendectomy (88, 9.1%) and laparotomy (77, 17.6%), respectively, were the most common surgeries performed during the reference and the pandemic period. Conservative treatment of acute appendicitis was more during the pandemic period (47.5% vs 28.5%, p=0.01), but patients who underwent appendectomies had more complicated appendicitis (63.3% vs 42.1%, p=0.01)..

Courtesy: *BMJ Paediatrics Open 2021* **Read the full artical**

https://bmjpaedsopen.bmj.com/content/5/1/e001040

https://bmjpaedsopen.bmj.com/content/5/1/e001042

https://bmjpaedsopen.bmj.com/content/5/1/e001066

5. *Impact of 1% chlorhexidine gluconate bathing and emollient application on bacterial pathogen colonization dynamics in hospitalized preterm neonates - A pilot clinical trial (E-Clinical Medicine, 2021*

Chlorhexidine gluconate (CHG) body washes and emollient application may modulate bacterial pathogen colonization and prevent neonatal hospital-acquired infections. Dramowski et al from Cape Town, South Africa published their pilot, non-randomized, open-label trial in current issue of E-Clinical Medicine. The trial enrolled preterm neonates (1000-1500g; day 1-3 of life) at a tertiary hospital and were sequentially allocated to 4 trial arms (n=20 each): 1% aqueous CHG (CHG), 1% CHG plus emollient (CHG+EM), emollient only (EM) and standard of care (SOC: no antiseptic/emollient). Trial treatment/s were applied daily for 10 days (d) post-enrolment, documenting neonatal skin condition score. Anterior nose, neck, umbilical and perianal swabs for bacterial culture were collected at d1, d3, d10 and d16 post-enrolment, (±1 day), reporting pathogen acquisition rates and semi-quantitative bacterial colony counts. They found that the bacterial pathogen acquisition rate (comparing d1 and d16 swabs) varied from 33•9% [95%CI 22•9-47•0] at the umbilicus, 39•3% [95%CI 27•6-52•4] at the neck, to 71•4% [95%CI 58•5-81•7] at both the nose and perianal region. At d10, CHG babies had reduced bacterial density detected from neck, umbilicus, and perianal swabs compared to other groups (see Table 3). Following intervention cessation, colonization density was similar across all trial arms, but S. aureus colonization was more prevalent among EM and CHG+EM babies. Neonatal skin condition score improved in babies receiving emollient application (EM: -0•87 [95%CI 0•69-1•06] and CHG+EM: -0•73 [0•45-0•99]), compared to the SOC and CHG arms (Table 2); no

Journal Clippings

CHG-related skin reactions occurred. Thus, bacterial colonization density was significantly reduced in babies receiving 1% CHG washes but colonization levels rebounded rapidly post-intervention. Emollient application improved skin condition but was associated with higher rates of S. aureus colonization.

https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(21)00226-1

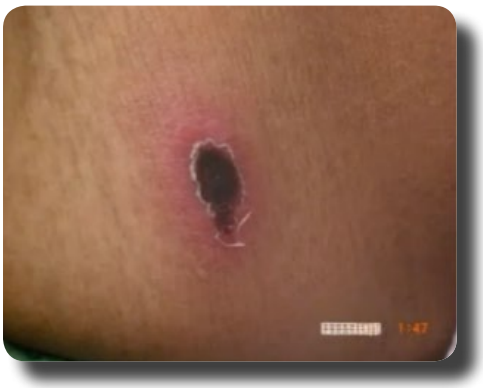
6 *Association of Oral Corticosteroid Bursts With Severe Adverse Events in Children*

Systemic corticosteroids are known to cause several adverse effects, especially on long-term use. However, significant adverse effects can also occur with even short-term burst. A nationwide population-based study from Taiwan involving 1 064 587 children who received a single corticosteroid burst. Yao et al found that a burst was associated with 1.4- to 2.2-fold increased risk of gastrointestinal bleeding, sepsis, and pneumonia within the first month after corticosteroid initiation. We all should be aware of this.

https://jamanetwork.com/journals/jamapediatrics/fullarticle/2778775

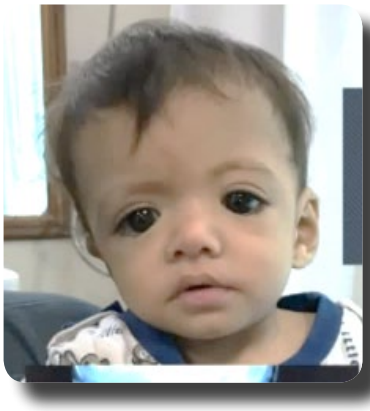
Compiled by Dr Puneet Kumar

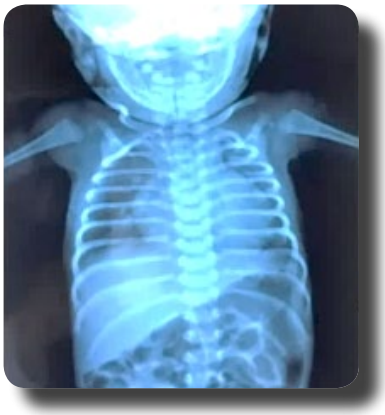
Answer Photo Quiz June 2021



Q	*A child with fever has this painless, non pruritic, crusty lesion in buttock area. Spot the diagnosis. How would the diagnosis be confirmed*
Ans	***Eschar lesion seen in rickettsial disease (halo lesion cigarette burn scar with perilesional erythema). Diagnosis confirmation by PCR(Ist week), others ELISA,IFA.***
Correct Answer by	***Dr Sanjeev Aggarwal***

Answer X-Ray Quiz June 2021





Q	*One year child; born SGA, diagnosed to have double outlet right ventricle and the above Xray is posted for surgery? Identify? How to prove the diagnosis?*
Ans	***Facial dysmorphism with congenital heart defect; to rule out Noonhan Syndrome or diGeorge syndrome genetic tests needs to be done***
Correct Answer by	***Dr Sanjeev Aggarwal***

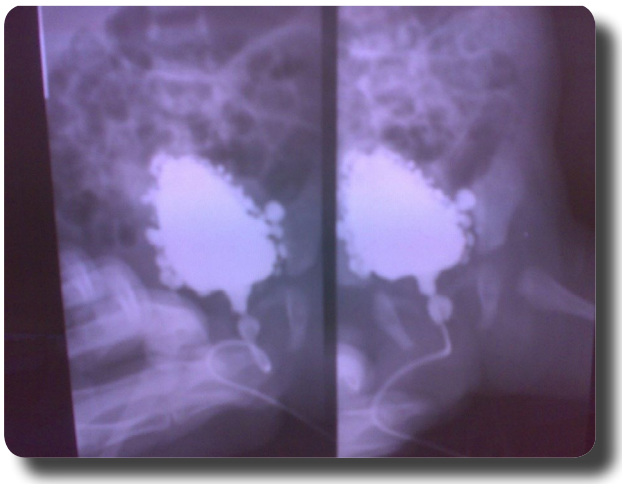
Contributed by Dr Pankaj Garg
Sr. Consultant, Department of Neonatology,
Sir Ganga Ram Hospital, New Delhi

Photo Quiz July 2021

What metabolic disorder and infection should be ruled out,

What is the Diagnosis?

X-Ray Quiz July 2021



What investigation has been done in this infant?

What is the Diagnosis?

Contributed by Dr Pankaj Garg
Sr. Consultant, Department of Neonatology,
Sir Ganga Ram Hospital, New Delhi

Please send correct answers photoshot with your name on IAP Delhi eMail iapdelhi2@gmail.com.
We will be publishing names as well as correct answers in next e Journal Delhi Pediatrics (XXXVIII No. 8)

Cultural Page

सिफ़र से शुरू हुआ ये सफ़र
सिफ़र पे ही ख़त्म होगा ये सफ़र।
सिफ़र से आगे बढ़ते गए
या हम सुकून खोते गए।
अल्हड़ बचपन, वो भोलापन
हम बढ़ते गए और खोते गए।
जवानी की दौड़ चली
और हम सिर्फ़ गिनते गए।
क्या मुड़ के पीछे देखा कभी
सिफ़र थे, सिफ़र ही रहे।
शुरू कहाँ से, अंत कहाँ पर
हम तो बिन सोचे दौड़ते रहे।
जब कुछ होश आया
तो हाथ में सिफ़र ही देखते रहे।
ये सिफ़र ही है अनदेखा अंतरिक्ष
जिसमें जाकर हम अदृश्य होते गए।

प्रशान्त सेठ

IAP Delhi Membership Form

Name of the Applicant					Photograph
Designation		Date of Birth			
Email Id		Sex: ☐ Male ☐ Female			
Postal Address for Communications					
Tel Residence		Office		Mob	

Name of Zonal Branch you would like to join ☐ Central ☐ East ☐ West ☐ North ☐ South:
Whether Central IAP member, if so Membership No:

No	Educational Qualification	Name of the University	Qualifying Year
1			
2			
3			
4			

Medical Council Reg. No	Reg. Authority (e.g. MCI/State Medical Council)
Name & Address of the Proposer	
Membership No. of the Proposer	Signature
Name & Address of the Seconder	
Membership No. of the Seconder	Signature

Declaration : I hereby declare that I have never been arrested/prosecuted and convicted by a criminal court or involved in any case registered by the police.

Place & Date	Signature of the Applicant

Membership Category	Fee	Admission	Total Amount Payable
Life	₹ 2,000/-	₹ 100/-	₹ 2,100/-
Associate Life	₹ 2,000/-	₹ 100/-	₹ 2,100/-

Cash/Local Cheque/may be drawn in favor of "Indian Academy of Pediatrics Delhi" payable at New Delhi.

For office use only

Payment Details Received		Rupees				
by Cash/Local Cheque/DD No		Date		Bank		
Receipt No		Date		General Secretary / Treasurer		

Note: Please submit self-attested photocopies of Qualification & Registration Certificate & One Passport size photograph.

Delhi IAP Membership Link: *https://www.iapdelhi.org/become-a-member*

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Central IAP Membership Form

Personal Details												
Name of the Applicant												
			(Surname)				(First Name)				(Middle Name)	
Date of Birth									Sex: ☐ Male ☐ Female			
Complete Postal Address for Communications												
Postal Pin		City			State			Nationality				
Registered Mobile No					Alternate Mobile							
Registered Email					Alternate Email							
IAP State Branch			IAP Dist./City/Local Branch									

Qualification			
Medical / Pediatric Qualification	Name of the University	Qualifying Year	Registration with State Medical Council or Medical Council of India

Other Details	
IAP membership no. and name of the Proposer	
	Signature
IAP membership no. and name of the Seconder	
	Signature
Place	
Date	(Signature of the Applicant) (Use black ink pen)

Please provide following information for IAP Photo Identity Card. Please attach a stamp size photograph (3x2.5 cms) with this application.							
Doctor's Name			Mobile No				
Allergies			Emergency Medications			Blood Group	

Central IAP Membership Link: *https://iapindia.org/registration/member-registration*

Central IAP Membership Privileges

The Society provides-

- *Facilities to Students, Scholars and Institutions for the study of or Research in Pediatrics in any of its aspects by way of scholarships, fellowships, grants, endowments, etc.*
- *Either through itself or in cooperation with other bodies or persons fellowships, prizes, certificates, diplomas of proficiency in the science of Pediatrics and conduct such tests, examinations or other scrutiny as may be prescribed from time to time.*
- *Free of cost or at subsidized cost its official journals, books, periodicals or publications on pediatrics and allied subjects which the society thinks is desirable for the promotion of its objects.*
- *Opportunity to its member to participate in Conferences, Lectures, Meetings, Seminars, Symposia, Workshops, Continuing Medical Education Programs, etc.*
- *Opportunity to become members of its Branches / Subspecialty Chapters / Groups / Cells / Committees.*

Affiliations / Collaboration-

The Society is affiliated to:

i International Pediatric Association (IPA)
ii International Society of Tropical Pediatrics (ISTP)
iii American Academy of Pediatrics (AAP)
iv Asian Pacific Pediatric Association (APPA)
v Asian Society for Pediatric Infectious Disease (ASPID)
vi South Asia Pediatric Association (SAPA)
vii Royal College of Pediatrics and Child Health (RCPCH)

Categories of Membership-

1 *Life Member: Life Membership is granted to any person who is a residential Indian citizen possessing MBBS or equivalent degree in Modern Medicine recognized by Medical Council of India (MCI) and is holding a diploma/ degree in pediatrics (such as MD Ped., DNB Ped., DCH) recognized by Medical Council of India (MCI) or any equivalent Nation Statutory Body formed by Government of India.*

2 *Associate Life Member is granted to any person possessing MBBS or equivalent degree recognized by Medical Council of India (MCI) or any equivalent National Statutory Body formed by Government of India.*

How to Apply for Membership-

Application should be made in the prescribed form. Along with the application for membership of IAP, photo copies of the following documents should be submitted-

- *Photo copies of the M.B.B.S. & Post Graduation Certificates as (as per degrees listed in your application).*
- *Photo copies of the degrees registration certificates with State Medical Council OR Medical Council of India (as the case may be).*
- *ID Proof with Photo : Aadhar Card / Passport / Voter ID / PAN Card*

Membership Fee-

The Membership Fee Structure is as follows:

Category of Membership	*Admission Fee*	*Membership Fee*	*Total Amount Payable*
Life	₹ ***500***/-	₹ ***9,500***/-	₹ ***10,000***/-
Associate Life	₹ ***500***/-	₹ ***9,500***/-	₹ ***10,000***/-

The Membership Fee should be paid by a crossed bank draft / at par cheque drawn in favor of **"INDIAN ACADEMY OF PEDIATRICS"** *payable at Mumbai or NEFT.*
Bank details: **BANK OF BARODA**, *Branch-Juinagar, Navi Mumbai*
IFSC Code: **BARB0JUINAG** *(Fifth character is Zero) '*
Current A/c No. ***42080200000253***.

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ORS Awareness Week
26th-31st July 2021

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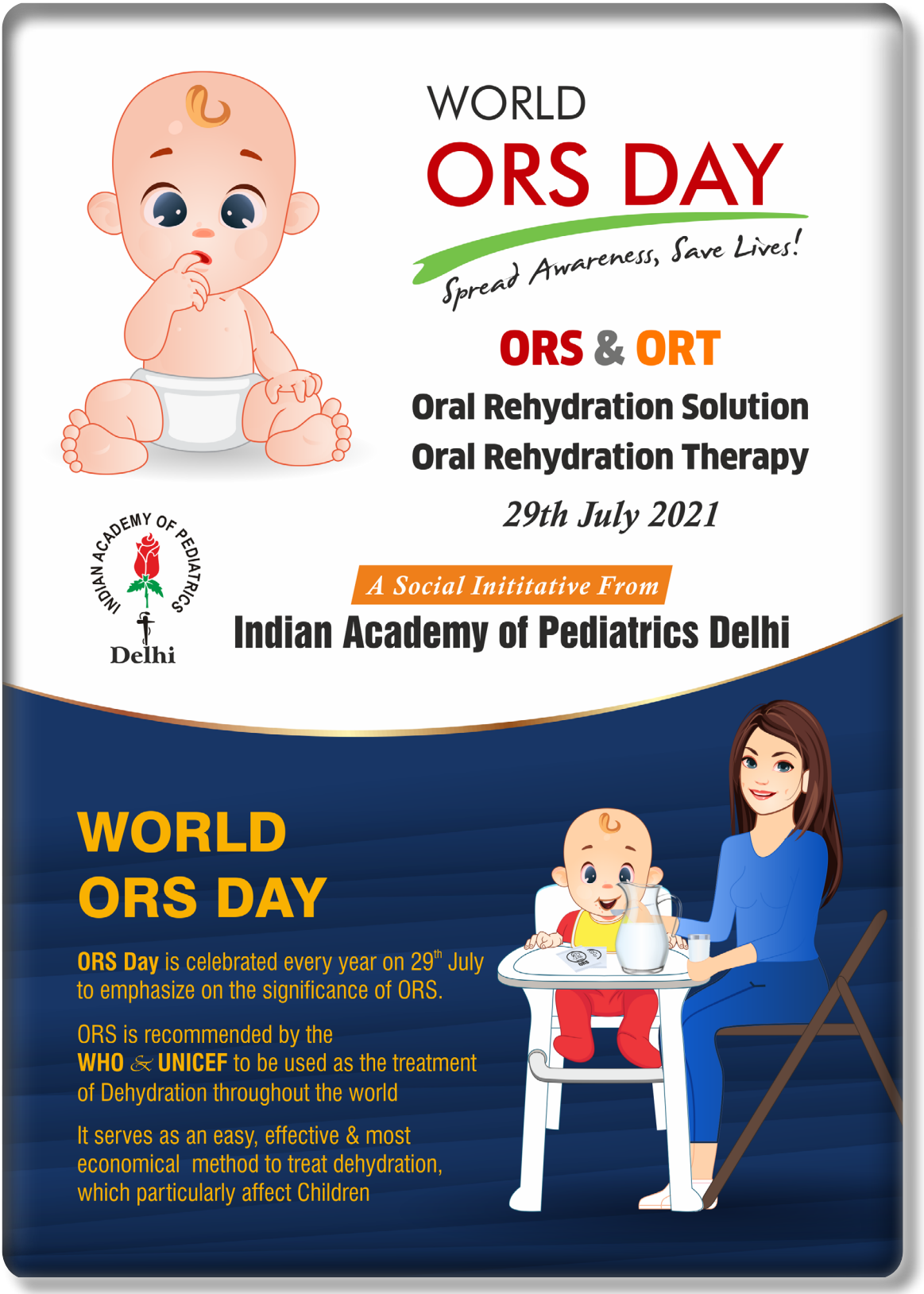
ORS Awareness Week

Click here to download https://bit.ly/2VKGPkT



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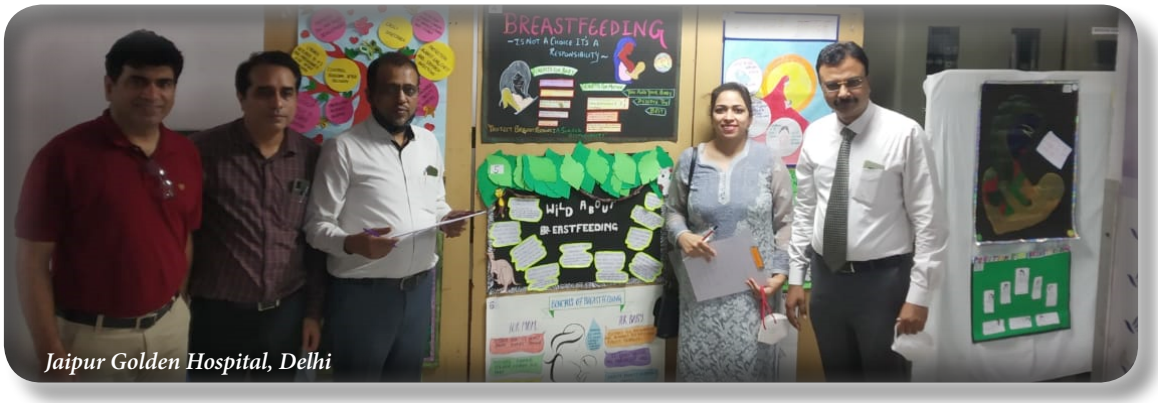
IAP Delhi Breastfeeding Week
1st-7th August 2021

GTB Hospital, Delhi



Jaipur Golden Hospital, Delhi

Lady Hardinge Medical College, New Delhi

Ram Manohar Lohia Hospital, New Delhi

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IAP Delhi Breastfeeding Week
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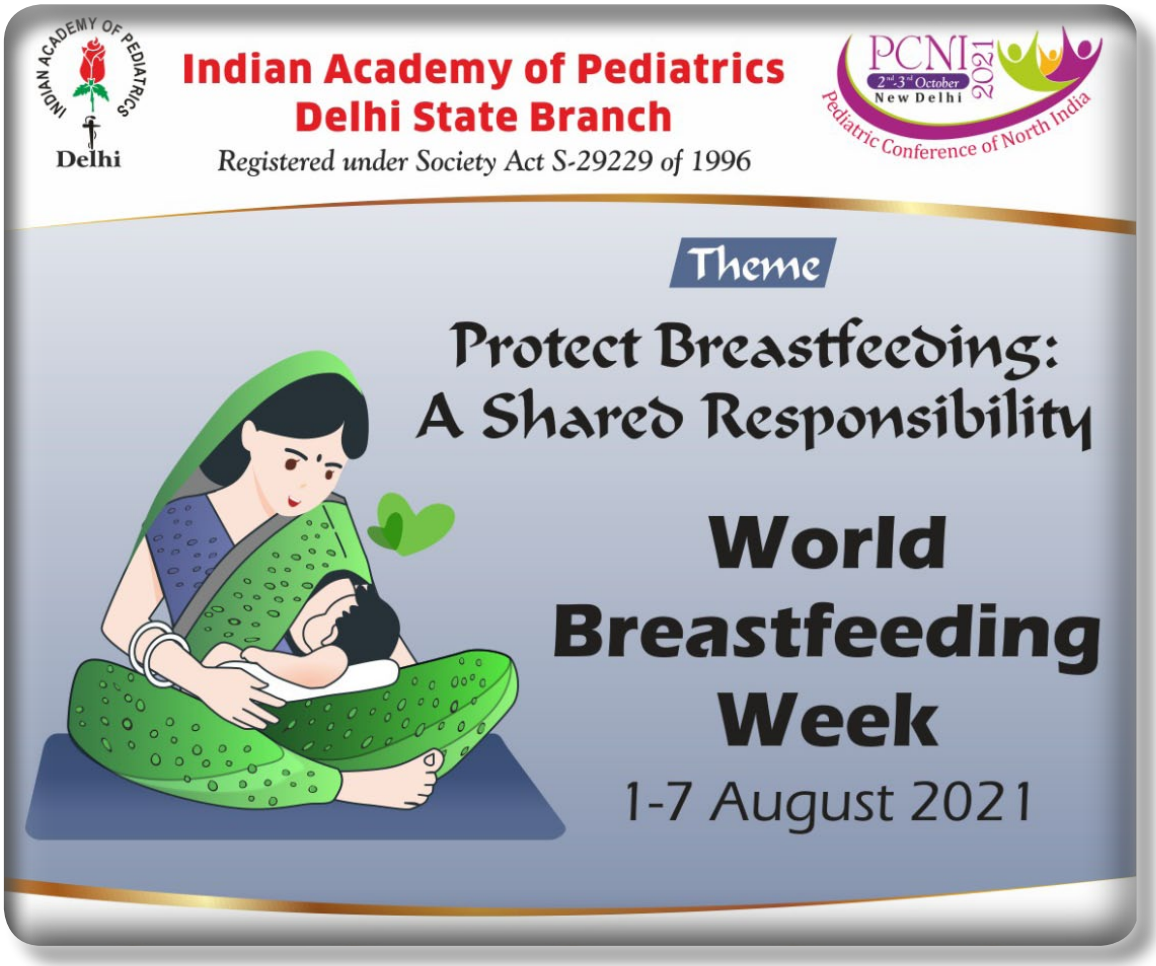

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IAP Delhi Breastfeeding Week
1st - 7th August 2021

CPR Day (IAP BLS MASS Awareness Program)
8th August 2021

IAP Guidelines for pediatric skincare

state that the newborn skin undergoes various structural and functional changes[1*]

Use of appropriate evidence-based skincare practices are important[2]

Protect the infant skin barrier function with safe, appropriate, and evidence-based products

Johnson's® CHOOSE gentle™

CLINICALLY mildness PROVEN®

Evidence-based skincare regimen

Cleansing regimen

As mild as pure water to maintain the skin barrier function[3,4]

Helps maintain the skin barrier function[5]

Moisturizing regimen

Improves the skin barrier integrity[6,7]

Helps enhance the skin barrier function for moisture retention[8]