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President
IAP Delhi

Dr Manish Gupta
Secretary
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Dr Pankaj Garg
Editor
Treasurer, IAP Delhi

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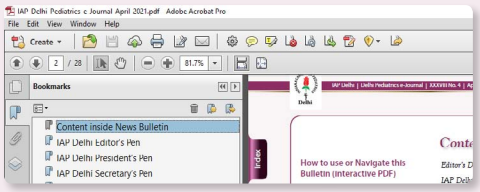

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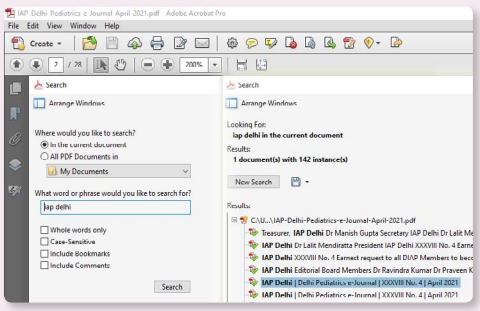

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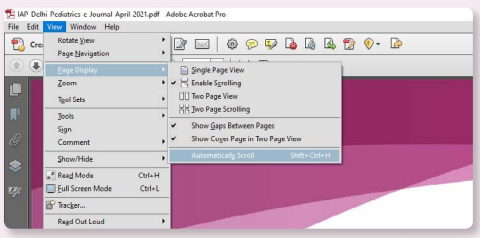

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IAP Delhi Editor's Pen

Dr Pankaj Garg

Treasurer cum Secretary Elect.
IAP Delhi

Dear Delhi IAP Members,

Our nation in general and Delhi in particular is going through one of the worst times and each one of us have seen relatives and friends suffering from COVID-19. I have never felt as helpless as I felt in last month when getting bed in hospital or getting one particular medicine was not possible. To add to the woes, most of the executive board members of Delhi IAP also got affected by the virus and hence we could not bring the April issue on time.

But as the famous saying by late actor Raj Kapoor goes ***"Show must go on",*** my team members have tightened their girdle and doing their best to serve the community at large and the pediatric colleagues in particular. Hence better late than never, ***I present before you the April issue of the e Journal of Delhi Pediatrics.***

In continuing with our efforts to keep all of you updated we have ***articles which deal with the Acute kidney injury in children, MIS-C in children and Japanese Encephalitis. In our column "Tip of the month",*** attention deficit hyperactivity disorder is being discussed. Atrial septal defect may have varied presentations and the same is highlighted in ***"Peeping into heart".*** 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 have also included ***a Parent Teaching-oriented article on "Cough Management"*** which solves the common questions frequently asked by the parents. We hope the readers find these features of interest.

Life is not only academics but definitely much more than that. We have included a page dedicated to the creative writing by the members in form of poems or short stories. 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

Dear Friends,

We are passing through a horrifying period since 15th April created by Covid19 pandemic. No one has seen so much of morbidity and mortality in the past. We have lost too much and it is really very painful to say any word about it.

I express my heartfelt condolences for our corona warriors and front-line workers and their families. May God everyone the strength to bear this. ***I express my grief on the loss of our legend pediatrician Dr Sudershan Kumari and Dr Sanjeev Kumar*** from Balmiki hospital and many others are fighting for their life in hospitals. This loss is not repairable. My sincere prayers for their rapid recovery.

Life has to move on. Great thing has been the kind efforts of all our city branches executives and members who have really helped each other and their families and even helped the whole society in this grim situation in whatever ways they could. Even helping so many adults with teleconsultation. These efforts are laudable and no words are enough to express my feelings.

We have sent our recommendations to Govt of India and Govt of Delhi in relation to the ongoing pandemic regarding possible preparation for third wave, vaccination for pregnant women and children also as soon the trial results are available.

I thank all the pediatricians from IAP Delhi who are working along with Ministry of Women and Child Development for teleconsultation and advice on mental health issues to children of child welfare institution in Delhi and will continue to do so.

Finally, just to conclude we are not going to give up our fight against COVID19 and we all are united and our almighty is always with us and we will win.

Thanks once again to all my OB, EB teams of Delhi and CIAP and all our Dear members for all the support. A special thanks to Dr Pankaj Garg who has shown immense commitment and dedication in bringing out this issue despite all the limitations faced in these difficult times.

Jai Hind

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IAP Delhi Secretary's Pen

Dr Manish Gupta
Secretary
IAP Delhi

Dear Friends and IAP Delhi Fellows,

We all from IAP Delhi wish you all good health and mental peace in current times.

We all know Delhi suffered from immense health problems due to covid cases. We thank all IAP Delhi members for performing all their clinical work with dedication and helping out each other for their needs.

We offer condolences to family of ***Dr Sudarshan Kumari and Dr Sanjeev Kumar for their irreparable loss.*** The Executive Board member's meet of IAP Delhi has decided to help the family of Dr Sanjeev Kumar in this time of need as per their capacity.

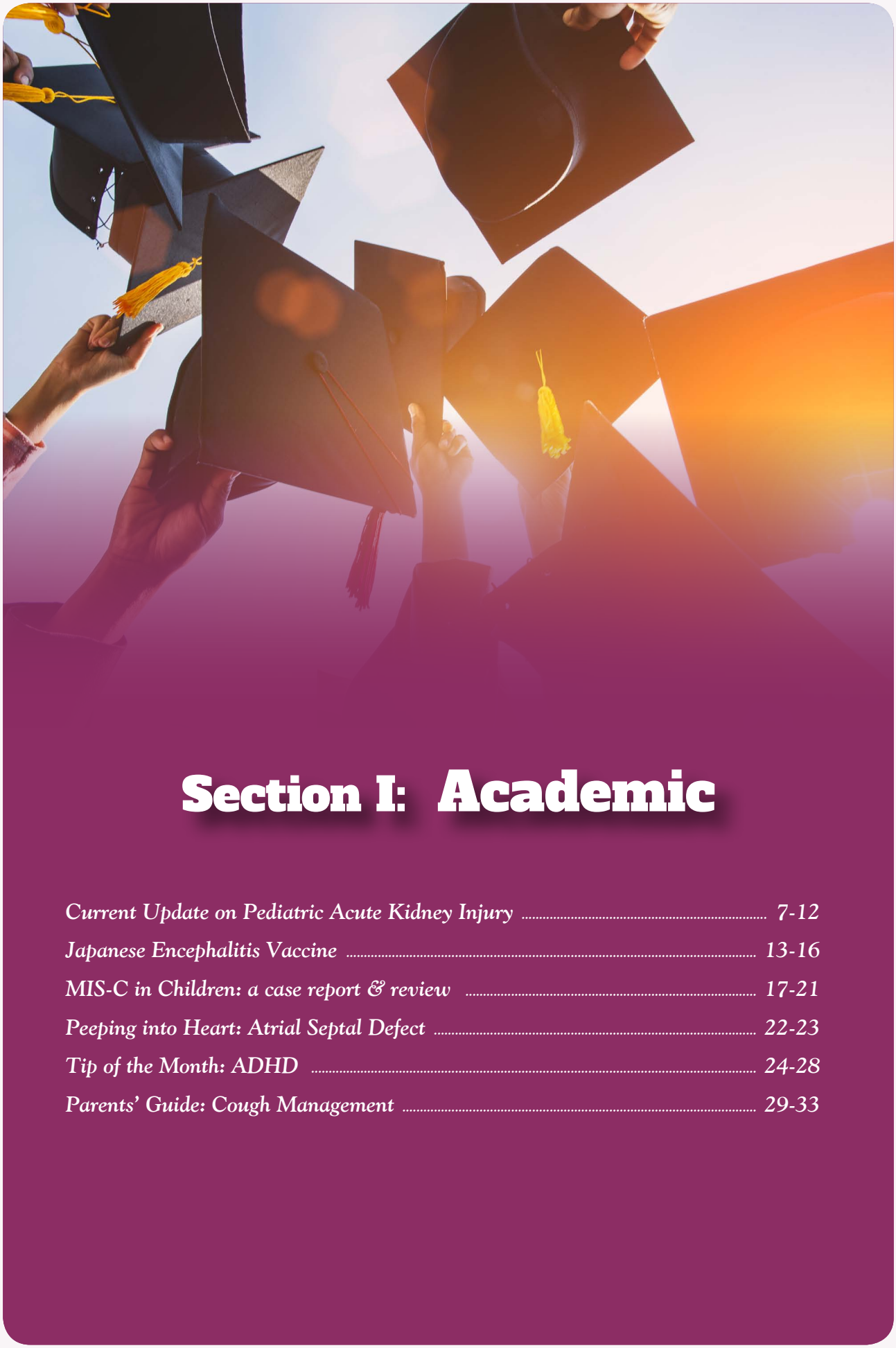
We request all Members IAP Delhi to take full precautions, promote social distancing and promote Covid vaccinations among their patients and friends.

Many planned activities could not be done due to most of the members and even office bearers had to encounter Covid in family.

Hoping a better and healthy future for all of us

Thanks and Regards
Yours Sincerely,

Dr Manish Gupta
General Secretary
IAP Delhi 2021



Section I: Academic

Current Update on Pediatrci AKI

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***Acute Kidney Injury (AKI)** is a common complication in critical care that leads to prolonged ICU stay and high morbidity and mortality. Timely recognition and necessary interventions promote early recovery and reduces chances of long-term chronicity.*

Epidemiology

Incidence of AKI in general critical care pediatric populations vary from 10 to 19.1%. Though an overall incidence of pediatric AKI reaches around 30% but 11.6% have severe AKI (stage 2 or 3) and require dialysis support. In neonatal age, AKI risk differed by gestational age and incidence peaks 48% in those < 29 weeks, 18% in those 29 weeks to <36 weeks, 37% in those ≥ 36 weeks. Two recent worldwide studies on pediatric and neonatal AKI as Assessment of Worldwide Acute Kidney Injury, Renal Angina and Epidemiology in critically ill children (AWARE) and a retrospective Assessment of Worldwide Acute Kidney Injury Epidemiology in Neonates (AWAKEN) have highlighted present epidemiology & etiology along with management for AKI.

Among causes of AKI, although dehydration, sepsis and primary renal diseases remain the most common aetiologies in developing countries, but now with increasing awareness here and in developed nations, early burden of AKI is recognized post-surgery, post solid organ and bone marrow transplantation, nephrotoxic medications. Incidence of AKI post cardiac surgery is reported around 30 to 50 % and with ECMO following congenital heart surgery this reaches up to 72%.

Definitions and staging of AKI:

KDIGO criterias (The Kidney Disease: Improving Global Outcome) are now considered as most practical and validated definition for defining and staging both critical care

and non-critical care AKI. RIFLE (Risk, Injury, Failure, loss, End stage) and AKIN (Acute kidney injury network) criterias are still being considered. In RIFLE since estimated GFR is calculated using original Schwartz formula and in a sick patient, height might not be available accurately, so chances of error are there, but it is more sensitive and able to detect more mild cases of AKI.

KDIGO

AKI	Paediatrics		Neonatal	
Stages	Serum creatinine	Urine output	Serum Creatinine	Urine output
1	1.5–1.9 times baseline OR ≥ 0.3 mg/dl increase*	< 0.5 ml/kg/h for 6–12 h	≥ 0.3 rise within 48 h or ≥ 1.5–1.9 × rise from baseline (previous lowest value) within 7 days	≤ 1 ml/kg/h for 24 h
2	2.0–2.9 times baseline	< 0.5 ml/kg/h for ≥ 12 h	2.0–2.9 times baseline	≤ 0.5 ml/kg/h for 24 h
3	3.0 times baseline OR Increase in serum creatinine to ≥ 4.0 mg/dl OR Initiation of renal replacement therapy OR In patients < 18 years, decrease in eGFR to < 35 ml/min per 1.73 m2	< 0.3 ml/kg/h for ≥ 24 h OR Anuria for ≥ 12 h	creatinine ≥ 2.5 mg/dl or renal replacement therapy initiation	≤ 0.3 ml/kg/h for 24 h

pRIFLE		AKIN	
	Creatinine/Urine output	Stages	
Risk	eGFR decreased by ≥25% / 0.5 mL/kg/hr for 8 hr	1	Increase in creatinine of ≥50% or an absolute increase in creatinine of 0.3 mg/dL over 48-hr period
Injury	eGFR decreased by ≥50% / 0.5 mL/kg/hr for 16 hr	2	Increase in creatinine of ≥100%
Failure	eGFR decreased by ≥75% (or <35 mL/min/1.73 m2) / 0.3 mL/kg/hr for 24 hr or anuria for 12 hr	3	Increase in creatinine of ≥200%
Loss	Persistent failure >4 wks.		
ESRD	Persistent failure >3 m		

Recent developments

Renal Angina Index: To improve outcome, studies in last few years have come out with a new parameter based on predisposing risk, "Renal Angina Index" (RAI) which though still under validation process but now is considered an important early predictor of severity of AKI. It is determined using scores calculated from product of clinical parameter [each predisposing risk as pediatric ICU admission (1), stem cell transplant (3), mechanical ventilation/ inotropes utilization (5)] and signs of injury [(Fluid overload % (<5; 5-10; 10-15;15-20) and rise in SCR]. Minimum score for risk of AKI is 8 and maximum severity is with 40.

Percentage of Fluid overload: It is now established in both adult as well as paediatric studies that there is increased cardiovascular and respiratory distress and early and high ventilation requirement with increased percentage of fluid accumulation. More is the load, worse is the outcome. Value above 20% is associated with high severity.

$$\%\,\text{Fluid Overload:} \quad \frac{\text{Sum of daily Fluid in-Fluid out (Litres)}}{\text{ICU Admission Patient Weight (Kgs)}} \times 100$$

Restriction after initial fluid challenge in a non-responding shock and early dialysis support has resulted in better outcome.

Furosemide stress test" (FST): Furosemide challenge for oligo-anuria is in practice for many years. Now FST is used to determine severity and defined after a single dose of furosemide followed by a 6-h period of monitored urine response to identify patients at risk for severe AKI.

Biomarkers:

For early recognition of AKI, research is ongoing on several biomarkers and few now being used in clinical practice too. These include Urinary markers neutrophil gelatinase-associated lipocalin (NGAL), interleukin-18 (IL-18) and liver- type-fatty acid binding protein levels and kidney injury molecule-1, urinary tissue inhibitor of metalloproteinase 2 (TIMP2) and insulin-like growth factor binding protein 7 (IGFBP7) and serum cystatin C.

Serum creatinine is even though still the standard marker to determine AKI but drawback is that it rises after considerable damage at molecular level and also varies with muscle mass and other factors, therefore research focus now is trying to validate other markers.

Management:

Prerenal AKI from volume depletion is not related now with tubular injury/ necrosis and does not define AKI. For initial determination Urinary indices, especially the fraction excretion of Sodium (FeNa) and Urea (FeUrea) calculate the risk of AKI and tubular damage. FeNa when >2% in children and >2.5% in neonates with a higher urine sodium >30 meq/L, suggests tubular damage but its value is unreliable with IV fluids and in CKD where then FeUrea is more useful and values above 50% suggests intrinsic AKI.

1 **Drugs**: Till date no perfect medication is there to prevent and treat AKI. Although recent research work and guidelines have advised to use adenosine receptor antagonists (Theophylline, caffeine and aminophylline) to prevent AKI in high-risk populations and neonates as after congenital cardiac surgery, perinatal asphyxia, and premature neonates).

2. **Judicious fluid challenge & furosemide** use further help in early identification and better recovery of AKI. Pushing more diuretics in existing tubular damage increases severity of AKI.

3. Attention to blood pressure measurements during primary care visits

4. **Nutrition**

5. **Dialysis Support**:

The indications for renal replacement therapy (RRT) include uraemia (typically blood urea nitrogen (BUN) > 100–120 mg/dl), electrolyte abnormalities, Fluid overload and inability to provide adequate nutrition. Considerable efforts from research work have shown importance of initiation of dialysis support in Fluid overload and when nutrition is compromised due to fluid restriction. Serum creatinine is not an early marker predictor for kidney damage as discussed above so should not be considered a base for nephrology referral.

Other indication for dialysis support includes inborn errors of metabolism (IEM), tumour lysis syndrome, respiratory failure and pulmonary oedema with septicemia and septic shock, toxins and poisons, hyperammonemia from acute liver failure and drug overdoses.

RRT / Dialysis modality:

Paediatric RRT for AKI has come a long way since its first report of successful usage of peritoneal dialysis (PD) in 1961. Even though PD is still preferred in low resource

settings and in new-born, but now newer blood-based methods of dialysis are becoming popular nowadays with more expertise and availability of small vascular access catheters and dialyzers. For acute dialysis, either intermittent Hemodialysis (HD), Continuous Renal Replacement Therapy (CRRT) or Dialysis such as Slow efficient dialysis (SLED) can be done now with ease. CRRT and SLED are preferred in critically ill hemodynamic unstable patients.

Paediatric consideration has been seen in innovations with development of newer dialysis machines for neonates and young children. There usage is now seen in developed part of world. These include the CARdiorenal PEDIatric Emergency Machine (CARPEDIEM; Bellco- Medtronic, Mirandola, Italy), the Newcastle Infant Dialysis and Ultrafiltration System (NIDUS); and the Aquadex system (Baxter Corp., Minneapolis, MN, USA).

Conclusion:

Paediatric nephrology group is making a considerable effort to determine burden and early adequate management of AKI in children. This would help in preventing long term morbidity and also mortality. Studies have shown progression of AKI to CKD in almost 10 % of patients with GFR < 60 ml/ min/1.73 m2), and an additional 47% were at risk for CKD with GFR of 60–90 ml/min/1.73 m2 and also have persistent of hypertension. A global initiative has been undertaken with a particular focus on low- to middle-income countries termed "0by25 initiative" to increase our understanding of the epidemiology and outcomes of AKI in developing countries.

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Japanese Encephalitis Vaccine

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Japanese encephalitis is a mosquito borne encephalitic disease caused by Japanese Encephalitis Virus (JEV), a member of Flavivirus genus. It is considered as a most predominant etiology of viral encephalitis diagnosed in south and south-east Asia. Additionally, JEV is particularly responsible for severe neurological manifestation among 30-40% recovered patient. This contributes to the loss of more disability-adjusted life years than any other vector-borne virus. Despite the recent advancement of medical science and more understanding towards the nature of JEV, the diagnosis and treatment part are still lagging. Absence of a definitive antiviral treatment leads to the increased chance of mortality and morbidity for any JEV infected patient. Thus, the prevention aspect should be well advocated especially in developing countries like India where treatment options are often compromised in rural and semi-urban regions. In this review we will try to discuss about the changing epidemiological dynamics of JEV and recent updates on the JEV vaccines.

Introduction

JEV circulates mostly throughout Asia extending into maritime Siberia in North, to Saipan in the east, to Pakistan in the west and up to Torres Strait between Papua New Guinea and Australia (Hanna JN 1996). In the temperate zone, JE occurrence is usually epidemic in nature with a surge of cases in summer and monsoon, whereas the tropical regions are endemic for JEV with a year-round low circulation (Innis BL 1996). Despite the presence of very effective vaccines the JEV is still among the most important agent of epidemic encephalitis worldwide. It has been estimated that 10-15K death occurs annually due to JEV. More importantly, 20-30% of the symptomatic cases are rapidly

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fatal, 30-50% develops long-term neurologic and/or psychiatric sequelae and only 20-50% patients get complete recovery (Campbell GL 2011).

Genetics of JEV

The JEV possesses an 11 Kilobase positive sense RNA genome that is single-stranded in nature. It is composed of a single open reading frame with a 5' and 3' untranslated region. The ORF encodes a polyprotein which is cleaved during co and post translational modification into 3 structural proteins and 7 non-structural proteins. The Structural proteins are the Capsid (C) protein; the Precursor of membrane (prM) and the Envelop (E) protein (Chambers 1990). The E protein constitutes most of the mature virion surface of JEV and is the major target antigen for the host antibodies (Rey 1995). Different genotypes are determined based on the differences in the E protein. Based on the phylogenetic studies, the JEV can be sub-divided into 5 major genotypes namely GI, GII, GIII, GIV and GV. All the genotypes have some geographical distribution pattern with GIII as a predominant genotype circulating across most part of Asia. However, in recent past the genetic dynamics of the circulating JEV is also changing in many countries with one genotype replacing the others. Thus, a JEV vaccine with heterotypic protection will be most effective to restrict the burden of infection.

Changing disease dynamics

Classically the JE is most considered as a rural disease due its transmission cycle involving pigs and also its vector i.e. Culex species of mosquito. But in recent times we have seen a gradual change in the transmission dynamics of the disease like increase in the reports of JE infection in urban settings like Delhi, Kolkata, Hyderabad, Chennai, Bhopal etc. There are few factors that are hypothesized for this change. The first among those are increase in the pig population nearby urban areas which has helped the JEV to propagate or amplify in those areas. Another important reason is the selection of different mosquito genus such as Aedes, Annopheles etc. as the vector for JEV which are abundantly found in the urban areas as well. Recent data has also suggested that more and more animal reservoirs are found for JEV e.g. buffalo, chickens and Goats. Another, interesting observation can be made from the national vector borne disease control data that there is shift in the age distribution in JE cases. Especially, in districts of North-eastern states and Karnataka many adults got infected with JEV in last 2-3 years. These changing dynamics of the disease may change the vaccination need of the population in near future like vaccination even in the non-endemic regions.

Vaccination against JEV

Since 1950, several vaccines have been used to control JEV transmission. Most of the JEV vaccines are developed from the GIII strain of virus. Studied have shown most of vaccines for JEV are effective in producing neutralizing antibodies with varied reactogenicity profile. The earlier JEV vaccines are mostly derived from mouse brain but owing safety concern and relatively poor immunogenicity this manufacturing method has been replaced by cell culture methods (Hedge 2017). The most commonly used JEV vaccine in India and worldwide are the Live attenuated SA-14-14-2 (Zaman 2014), Vero Celled derived Inactivated SA-14-14-2 and Vero Celled derived Inactivated 821564XY (Kolar strain) vaccine. The SstarinA-14-14-2 strain has been derived from JEV SA14 strain from Xian, China in 1954. This strain itself has low pathogenicity and can generate neutralizing antibody against the circulating GIII JEV strains. While the live attenuated SA-14-14-2 vaccine has not been tested against genotype I, but the Inactivated SA-14-14-2 vaccine can induce antibody against GI-GIV strains (Erra 2013). Although no phase 3 study was conducted for this vaccine in Indian population to understand the immunogenicity and cross-protection against other circulating strains. More recently, a new vaccine has been developed based on an Indian JEV strain i.e. 821564XY which was isolated from Kolar district of Karnataka, India. This strain also from GIII genotype and was grown in vero-cell to develop the vaccine. The phase 3 study of this vaccine was conducted on Indian population and was found to be highly immunogenic and can generate neutralizing antibodies against GI-GIV JEV strain (Singh 2015). As per recent data, only one dose of the JEV vaccine with 821564XY strain can elicit robust immunity which can last almost 2 years and subjects who has received a second dose of the same vaccine after 2 years showed highest GMT titres. Moreover, many studies have shown that efficacy of live attenuated SA-14-14-2 vaccine is not very high and studies showed that interchangeability from live vaccine to Inactivated 821564XY results in better immunogenicity. However, recent epidemiological data has shown that GV strain is also emerging in few parts of the world and current vaccines have failed to prove their immunogenicity against this emerging GV strain (Cao 2016).

Conclusion

JE has remained as a devastating disease with an absence of specific treatment and high mortality rate even in this twenty-first century. The only option for treating a whopping number of 69000 patient yearly for JEV is supportive care. However, recent development towards understanding the JE epidemiology and disease dynamics has pointed towards several potential newer treatment avenues. There are several

compounds that are approved for testing in humans. But prevention remains the hallmark for the fight against JEV. Phylogeographic study has revealed that an array of different genotypes of JEV can co-circulates at a given time or a genotype can anytime replace the other. Thus, proving the importance of highly immunogenic and broadly cross-protective vaccine in prevention from JE infection. Data also suggest that chance of waning immunogenicity especially in non-endemic area is possible thus a booster dose can be a good proposition at least for people residing in non-endemic zone. Lastly, changing disease dynamics has also indicated a strong need of JE vaccination through out every region in India despite of their difference in endemicity.

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MIS-C in Children

A case report & review

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With the emergence of COVID-19, emergence of a new disease having features like Kawasaki disease has posed a new challenge in front of the pediatricians. Understanding of its presentation, how to approach it and its management is critical to save the life of the patient from this. Here we report a case of MIS-C with shock having myocardial involvement that was managed successfully in our hospital.

Case Report:

A four year old female child was referred to our hospital with complaints of fever with rash for 7 days and was having cough, pain abdomen, decreased urine output, edema over face & decreased oral intake for last 2 days.

On general examination, she was sick, having toxic look and febrile (101 degree F). She was having tachycardia (HR - 140 / min), tachypnea (RR - 32/ min), weak peripheral pulses, CRT >4sec, hypotensive (70/48 mm of Hg), with edema present on the face & limbs, congested eyes and macular rashes present all over the body.

On systemic examination: R/S - B/L A/E (+), CVS- S1S2 (+),no murmur appreciable, CNS- Irritable, P/A- Distended, tender hepatomegaly with mild ascites.

Child was admitted in PICU after negative COVID-19 RT-PCR report. IVF and Broad spectrum antibiotics were started after sending the baseline investigations. In View of delayed CRT, low BP and oliguria, fluid boluses & dopamine infusion (5 mcg/kg/min) were started.

Lab results showed low Hb(9.3g/dL), low platelet (1,09,000/uL), normal TLC (8.8 K/uL), relative lymphopenia, high CRP (192mg/dL),low S.Albumin (2.3g/dL), low potassium levels(3.0 mEq/L), normal S.Cholesterol & S.Creatinine,S.Ferritin >2000 ng/mL & Trop-I (140.4 pg/mL). PT/aPTT was normal but D-dimers(2.2 mcg/ mL) level was high. There was no protein in urine examination with no growth on urine and blood culture. CXR was normal & USG-Abdomen showed mild hepatosplenomegaly and ascites.

The differential diagnosis was dengue shock syndrome, toxic shock syndrome, cytokine storm, hemophagocytic lymphohistiocytosis, septic shock, atypical Kawasaki disease, or cardiogenic shock secondary to myocarditis .

Pediatric nephrologist consultation was taken to review for oliguria and increasing edema. Antibiotics were upgraded in view of persistent fever and worsening of clinical status of child. After ruling out all the common causes and in view of positive inflammatory markers and sign/symptoms consistent with MIS-C, COVID-19 IgG antibodies levels were done which came out to be positive. ECHO was done and it revealed features of myocarditis with normal ejection fraction and LV function.There was no evidence of coronary artery aneurysm (CAA).

Thus,diagnosis of MIS-C post COVID-19 infection with myocarditis with shock was made.

Along with management of shock, single dose IVIG (2g/kg) and iv methylprednisolone(1mg/kgday) were given. Cardiac consultaion was also taken in view and in view of raised d-dimer levels & ecosprin was added. She improved dramatically; within <24 h, she no longer required pressors and was afebrile without tachycardia. D-dimer was downtrending, troponemia had resolved at the time of discharge. The patient was sent home with instructions to continue with oral ecosprin and prednisolone for two weeks followed by an appointment with pediatric cardiologist with ECHO on follow up.

Discussion

Pediatric patients PCR positive for SARS-CoV-2 present differently than adults with 40% either asymptomatic or with URI symptoms. On April 26, 2020, clinicians in the United Kingdom (UK) recognized increased reports of previously healthy children presenting with a severe inflammatory syndrome with Kawasaki disease-like features. The cases occurred in children testing positive for current or recent infection by SARS-CoV-2, the novel coronavirus that causes COVID-19, or who had an epidemiologic link

to a COVID-19 case. Patients presented with a persistent fever and a constellation of symptoms including hypotension, multiorgan (e.g., cardiac, gastrointestinal, renal, hematologic, dermatologic and neurologic) involvement, and elevated inflammatory markers. Respiratory symptoms were not present in all cases.

Following are the important points from the latest American college of Rheumatolgy (ACR) guidlines on MIS-C :

Case definition for MIS-C:

An individual aged <21 years presenting with fever*, laboratory evidence of inflammation**, and evidence of clinically severe illness requiring hospitalization, with multisystem (>2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); AND

No alternative plausible diagnoses; AND

Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or COVID-19 exposure within the 4 weeks prior to the onset of symptoms

*Fever >38.0°C for ≥24 hours, or report of subjective fever lasting ≥24 hours

**Including, but not limited to, one or more of the following: an elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin

It is currently unknown if multisystem inflammatory syndrome is specific to children or if it also occurs in adults. There is limited information currently available about risk factors, pathogenesis, clinical course, and treatment for MIS-C.

Comparing and contrasting features of MIS-C & Kawasaki Disease:

- MIS-C and KD unrelated to SARS-CoV-2 infections may share overlapping clinical features, including conjunctival injection, oropharyngeal findings (red and/or cracked lips, strawberry tongue), rash, swollen and/or erythematous hands and feet, and cervical lymphadenopathy.

- Several epidemiologic, clinical, and laboratory features of MIS-C may differ from KD unrelated to SARS-CoV-2.
- Patients with MIS-C encompass a broader age range, have more prominent GI and neurologic symptoms, present more frequently in shock, and are more likely to display cardiac dysfunction (arrhythmias and ventricular dysfunction) than children with KD.
- At presentation, patients with MIS-C tend to have lower platelet counts, lower absolute lymphocyte counts, and higher CRP levels than patients with KD.
- Epidemiologic studies of MIS-C suggest that younger children are more likely to present with KD-like features while older children are more likely to develop myocarditis and shock (M).
- It is unknown if the incidence of coronary artery aneurysms (CAA) is different in MIS-C compared to KD; however, MIS-C patients without KD features can develop CAA.

While managing MIS-C, a stepwise progression of immunomodulatory therapies should be used to treat MIS-C with IVIG considered first tier therapy. Glucocorticoids should be used as adjunctive therapy in patients with severe disease or as intensification therapy in patients with refractory disease.

- IVIG should be given to MIS-C patients who are hospitalized and/or fulfill KD criteria.
- High dose IVIG (typically 2 gm/kg, based on ideal body weight) should be used for treatment of MIS-C low-moderate dose glucocorticoids (1-2 mg/kg/day) should be given with IVIG as adjunctive therapy for treatment of MIS-C in patients with shock and/or organ threatening disease.
- In patients who do not respond to IVIG and low-moderate dose glucocorticoids, high dose, IV pulse glucocorticoids (10-30 mg/kg/day) may be considered, especially if a patient requires high dose or multiple inotropes and/or vasopressors.
- In patients with refractory MIS-C despite a single dose of IVIG, a second dose of IVIG is not recommended given the risk of volume overload and hemolytic anemia associated with large doses of IVIG.
- Low-moderate dose steroids (1-2 mg/kg/day) may also be considered in patients with milder forms of MIS-C who are persistently febrile and symptomatic despite a single dose of IVIG.

o Anakinra (4 mg/kg/day IV or SQ) may be considered for treatment of MIS-C refractory to IVIG and glucocorticoids, in patients with MIS-C and features of macrophage activation syndrome (MAS), or in patients with contraindications to long-term use of glucocorticoids.

Serial laboratory testing and cardiac assessment should guide immunomodulatory treatment response and tapering. Patients may require a 2-3-week, or even longer, taper of immunomodulatory medications.

Antiplatelet and anticoagulation therapy in MIS-C:

- Low dose aspirin (3-5 mg/kg/day; max 81 mg/day) should be used in patients with MIS-C and continued until normalization of platelet count and confirmed normal coronary arteries at ≥4 weeks after diagnosis. Treatment with aspirin should be avoided in patients with active bleeding, significant bleeding risk, and/or platelet count ≤80,000/µL .
- MIS-C patients with CAAs and a maximal z-score of 2.5-10.0 should be treated with low dose aspirin. Patients with a z-score ≥10.0 should be treated with low dose aspirin and therapeutic anticoagulation with enoxaparin (factor Xa level 0.5-1.0) or warfarin.
- Patients with MIS-C and documented thrombosis or an ejection fraction (EF) <35% should receive therapeutic anticoagulation with enoxaparin until at least 2 weeks after discharge from the hospital.
- For MIS-C patients who do not meet the above criteria, the approach to antiplatelet and anticoagulation management should be tailored to the patient's risk for thrombosis.

In our case, most of the features of MIS-C were present. High clinical suspicion and relevant investigations clinched the diagnosis and aggressive management helped the child to recover well.

Peeping into Atrial Septal Defect (ASD)




Dr Neeraj Aggarwal *Dr Mridul Agarwal* *Dr Reena K Joshi* *Dr Raja Joshi*

Department of Pediatric Cardiac Sciences,
Sir Ganga Ram Hospital, New Delhi, India

ASD is the second most common CHD (15–20%) with the incidence increasing due to the wider availability of echocardiography (ECHO). It is of four types - ostium secundum (75%), ostium primum (15–20%), sinus venosus (5–10%) and coronary sinus (<1%) type. ASDs are usually asymptomatic in early childhood and are detected incidentally. Patients may become symptomatic as age advances and pulmonary artery hypertension (PAH) develops by the 3rd or 4th decade of life.

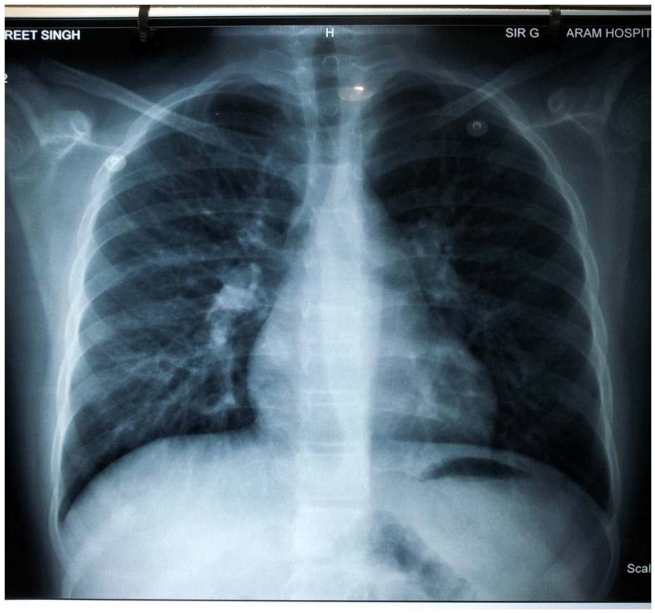
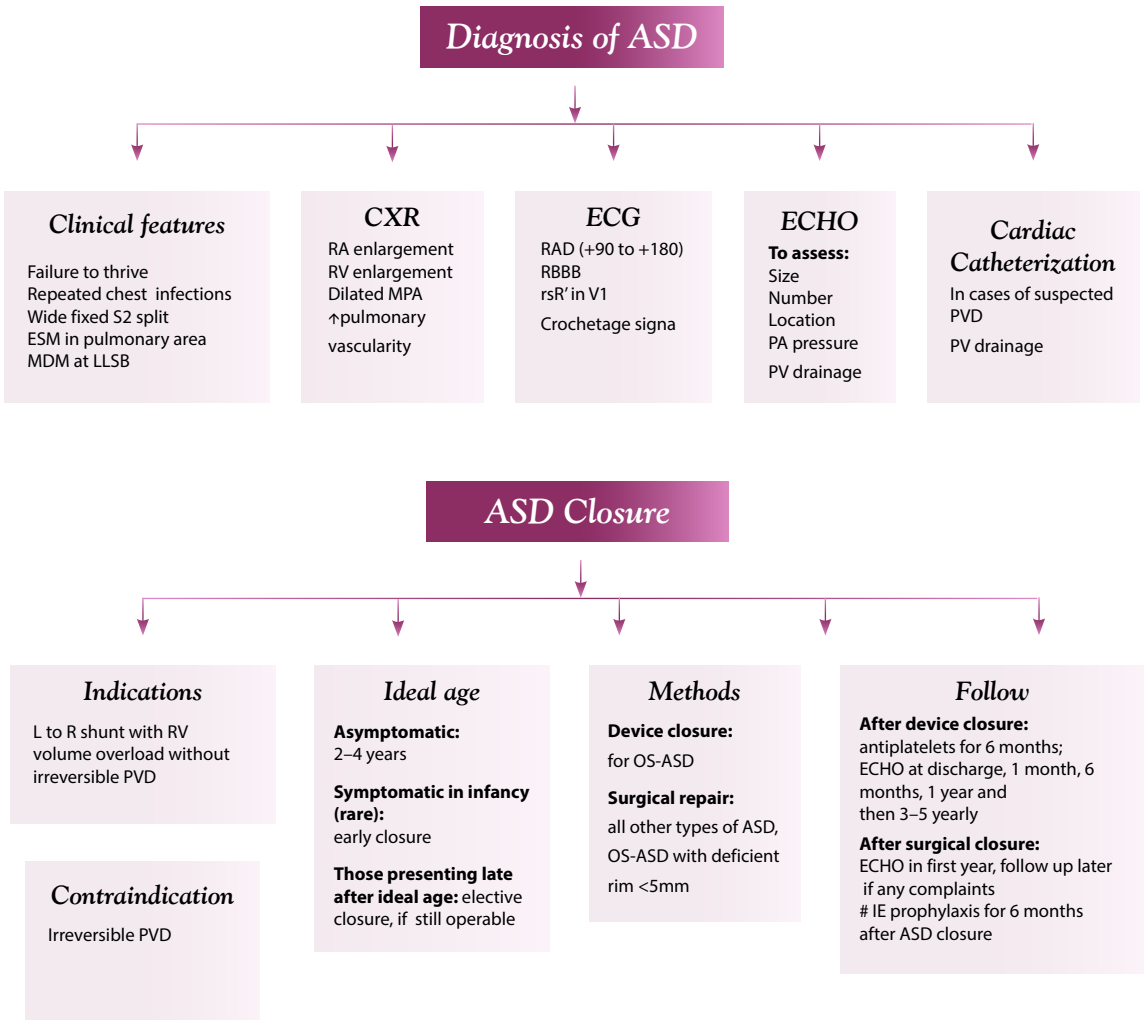


Figure 1: *CXR of a patient with ASD showing prominent pulmonary arteries with increased peripheral pulmonary vasculature suggesting a significant shunt*



Flowchart 1: Diagnosis and management of atrial septal defect (ASD)

(ESM-ejection systolic murmur, LLSB-lower left sternal border, MDM-mid diastolic murmur, MPA-main pulmonary artery, PVD-pulmonary vascular disease, RA-right atrium, RAD-right axis deviation, RBBB-right bundle branch block, RV-right ventricle) anotched R waves in inferior limb leads – seen in large ASD

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Tips of the Month : ADHD

An overview Attention Deficit Hyperactivity Disorder

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What is ADHD?

ADHD is a neurodevelopmental disorder characterised by developmentally inappropriate and impairing levels of gross motor overactivity, inattention and impulsivity. It begins in childhood and up to 60-80% of such children continue to be symptomatic in adult life. ADHD is highly prevalent in children, adolescents, and young adults worldwide, affecting about 5%–7% of children and adolescents and 2% of young adults. Male to female ratio of ADHD lies in the range of 3: 1 - 4: 1.

ADHD – DSM 5 Diagnostic Criteria

A. A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by (1) and/or (2):
   1. Inattention &
   2. Hyperactivity and impulsivity

B. Several inattentive or hyperactive-impulsive symptoms were present prior to age 12 years.

C. Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities).

D. There is clear evidence that the symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder.

Inattention Symptoms	**Hyperactivity Impulsivity Symptoms**
Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:	Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/ occupational activities:
• Often fails to give close attention to details • Often has difficulty sustaining attention in tasks or play activities • is often forgetful in daily activities • Often does not seem to listen when spoken to directly • Is often easily distracted by extraneous stimuli • Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace • Often has difficulty organizing tasks and activities • Often loses things necessary for tasks or activities • Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort	• Often fidgets with or taps hands or feet or squirms in seat • Often leaves seat in situations when remaining seated is expected • Often runs about or climbs in situations where it is inappropriate • Often unable to play or engage in leisure activities quietly • Often talks excessively • Is often "on the go," acting as if "driven by a motor" • Often has difficulty waiting his or her turn • Often blurts out an answer before a question has been completed • Often interrupts or intrudes on others

ADHD Presentations

Predominantly inattentive:

Highly inattentive & easily distracted; not hyperactive or impulsive - DAY DREAMERS- Most common in girls

Predominantly hyperactive-impulsive:

Extremely hyperactive and impulsive; not highly inattentive

Combined presentation:

Most common-exhibits all three-highly inattentive, extremely hyperactive & impulsive

What Causes ADHD?

Genetic Factors	Environmental Factors
Twin Studies • Concordance rate in monozygotic twins is 59-92% vs 29 to 42% in dizygotic twins. **Family Studies** • First degree relatives 20-25% risk, vs 4-5% risk for relatives of controls. **Candidate genes for ADHD** • DAT, DRD2, DRD4, DRD5, DRD3, COMT, MAO-A, SNAP25 gene **ADHD & Genetic Syndromes** • Fragile X Syndrome, Neurofibromatosis1, Tuberous Sclerosis, Williams Syndrome	**Pregnancy & birth complications:** • Maternal Anemia, Toxemia of pregnancy, Alcohol intake, smoking, viral infections, premature birth, birth trauma, hypoxic-ischemic-encephalopathy **Postnatal factors** • head injury, encephalitis, nutritional deficiencies specially low iron and ferritin, food additives, endocrine disorders (thyroid dysfunction), exposure to environmental toxins such as lead

Assessment of ADHD?

Clinical Evaluation	Rating Scale	Laboratory Investigation
• Obtain information from multiple sources • Perceptions of the person with suspected ADHD about their own symptoms • Observations of symptoms in different settings • Presence of comorbidities • Developmental, medical and psychiatric history • Family functional difficulties, ADHD or related comorbidities in the family • Physical examination: height, weight, pulse, bp, vision and hearing screening, complete neurologic examination	• Conners Comprehensive Behavior Rating Scale • Conners-Wells' Adolescent Self-Report Scale teenagers • INCLEN Diagnostic Tool for Attention Deficit Hyperactivity Disorder (INDT-ADHD)	There is no diagnostic test for ADHD. Some tests can be used to find out etiologic/ contributing causes of ADHD include • Thyroid function tests • Magnesium • Lead • Zinc • Iron, Ferritin • Vitamin D • Vitamin B 12 • Food allergies • ECG (if the treatment has a risk of QT prolongation)

Treatment of ADHD?

Life Style Changes	Behaviour Management	Pharmacological Management
Physical Exercise • Yoga **Diet** • Avoid food of high glycemic index, processed and packaged food **Supplementation:** • Omega 3 fatty acid • Zinc • Iron • Magnesium	**Parents** • Short, clear instructions • Divide an activity in small chunks • Enhance adult attending • Ignoring / Time out • Rapid Rewards, Token economy **Child** • Attention enhancement task • Self monitoring • Social skill training • Anger management **School Liaision** • Child made to sit near the teacher/ in front row • Given a buddy • Class work /homework checklist	**Stimulants** • **Methylphenidate Immediate Release** *Initially 5-10 mg daily titrated up to a maximum of 2.1 mg/kg/day in divided doses* • **Methylphenidate Sustained Release** *Initially 10 mg increasing as necessary to 60 mg daily* • **Methylphenidate Long Acting** *Initially 18 mg in the morning, titrated up to maximum of 54 mg or after specialist review up to 108 mg daily* **Nonstimulants** • **Atomoxetine** *Start with 0.5mg/kg/day and increase up to 1.2 mg/kg* • **Clonidine** *25-50 ug at bedtime to start, gradually titrated up to 150-300 ug/day in 3-4 divided doses* • **Other drugs with some efficacy:** Modafinil, Venlafaxine, Bupropion, Second-generation antipsychotics

Overall Treatment of Choice

- For Children under 4-6 years: Behaviour Management is the first line.
- For older children and adolescents: Behaviour Intervention and/ or Medication.
- 1st choice of Medication: Stimulants (Long Acting Preparation preferred due to superior pharmacokinetic profile).
- Duration of treatment: Medication should be reviewed at least once a year and the decision to continue the medication is taken after discussion with the person with ADHD and their families.

Take Home Points

1.	Does the child need medication….don't be in a hurry
2.	Educate the parents/child well….never underestimate the families
3.	Compliance is the biggest issue
4.	Liaison with child's world
5.	Keep a check on physical parameters….regular monitoring/review
6.	Give the maximum tolerable dose….individually tailored
7.	Avoid poly-pharmacy
8.	Address co-morbidity and psychosocial challenges …….MUST…..
9.	Medication are not 100% successful and curative
10.	Do try/attempt to stop medication after one year of persistent improvement……Choose a low stress time to stop medication

Parents' Guide: Cough Management

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Cough is the most common respiratory symptom reported in children of all age groups. Around 25-30% of parents report their child to have cough during outpatient visits. Cough is a protective reflex of the body that helps in clearing the windpipe and protects it from various disease-causing organisms, allergens and foreign bodies. Cough is caused by stimulation of receptors in the sinuses, throat and inner linings of the airways. Cough is associated with a harsh sound but may or may not be associated with sputum or phlegm. Although, cough is an essential protective response of the respiratory tract it can be very distressing for the child and parents. It may impact a child's school, play and sleep. There tends to be a discordance between parents' perception of cough in their child and actual intensity of cough [1]. There is also a deficiency in parents' knowledge of "wet" cough and "dry" cough [2]. As a parent, you are always worried about the cough of your child and want it to stop immediately but as a thumb rule cough should not be suppressed. Let us discuss a few common scenarios seen in clinics.

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Q1 My 3 years old son has had fever, cough and cold for the last 5-7 days. What should I do? Which cough syrup should I give?

Cough is most commonly caused by viral respiratory tract infections. Common viruses that cause these symptoms are rhinovirus, RSV, enterovirus, etc. Most children would not require any investigations and would get better in 1-2 weeks. Over-the-counter cough medications and syrups are not recommended to suppress cough as they are ineffective and can cause side-effects like excessive sleepiness and reduced concentration [3]. Indigenous remedies like honey and tulsi (holy basil) in warm water reduce the severity of cough and throat irritation [4]. Even when cough syrups are prescribed by the treating doctor, they should be used as and when required for cough which is very troublesome and disturbing the child's sleep/activity and not round-the-clock.

If the cough seems to be persisting beyond 2 weeks and not improving, child needs to be re-evaluated by a pediatrician. Sometimes, post viral cough might take a bit longer to resolve up to 4 weeks but other causes like asthma, nasal allergy, tuberculosis etc. need to be considered.

Q2 My 18 months old daughter started playschool & falls ill with fever & cough every few weeks. Is something wrong with my child's immunity?

Toddlers very often get viral infections when they start playschool as they move from a protected environment at home to a more carefree environment. As children interact with peers the exposure to viral infections increases. Hence, recurrent upper respiratory infections are common, and children can suffer from 8-10 episodes in a year, each episode lasting for a week or longer. This is also called as nursery school syndrome.

Asthma, tonsillitis, sinusitis are the other common conditions that needs to be considered in children having repeated infections. Check up by a pediatrician is important to evaluate the child and rule out other serious causes of repeated infections. Indicators of serious underlying disease in children suggesting immune deficiency are poor weight, repeated serious infections like cough with phlegm, pneumonias, abscesses and need for hospital admissions.

Over-the-counter cough syrups and injudicious use of antibiotics is discouraged and should be avoided) [3]. A good nutritious diet with balance of all vitamins and minerals is recommended for optimum growth and for building immunity. Adequate exposure to sunlight is also advised. Multivitamin syrups and immunity boosters are not helpful.

Q3 My 9 years old boy has been complaining of wet cough, nose blocks and early morning sneezing for past 4 months. What could be wrong with him?

Nasal symptoms like runny nose, sneezing and itchy nose are commonly seen in children with allergic rhinitis or nasal allergy. These children often have throat irritation and constant urge to clear their throat due to postnasal drip. They may also have productive cough as soon as they lie down, and it can be really troublesome for the child. Parents of these children must be watchful for any signs of disturbed sleep, snoring, mouth breathing or daytime sleepiness.

Care must be taken to remove any possible identifiable allergens from the environment like dust, smoke, perfumes, agarbattis, mosquitoes etc. Parental cigarette smoking is strongly discouraged especially in children with chronic cough. Allergy testing (blood testing with specific IgE or skin prick test) can be done to find out the allergen causing these symptoms. More than 50% of children with allergic rhinitis also have asthma, therefore complete evaluation for asthma must also be done.

Intranasal steroids are the treatment of choice and generally take 2-3 weeks for relieving the symptoms. Oral long acting anti-allergy medicines like levocetrizine, bilastine and fexofenadine may be useful.

Q4 My 5 months old baby has been having wet cough since he was born. He is not able to feed well, and his weight is only 4 Kg. What could my baby have?

Poor growth, persistent cough since early age, wet cough are ominous signs and indicate underlying serious problems. These children need to be thoroughly investigated and treated by a pediatrician. Common causes in such situations include gastro-esophageal reflux disease, immune deficiency, muco-ciliary disorders and congenital malformations of the lungs.

Babies with repeated vomiting while feeding, cough while feeding, excessive crying and breath holding spells may be suffering from gastroesophageal reflux. Repeated pneumonias can be seen in babies born with defects in their immunity or in babies with genetic conditions like cystic fibrosis and primary ciliary dyskinesia. Babies born with congenital malformations of the airways and lung may have symptoms starting from birth and some of these conditions may need surgery.

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Q5 My 8 years old girl has been coughing every day since last 3 months and she often wakes up catching her breath at night. These symptoms have worsened over the winter season, post-Diwali. Does she have asthma?

Recurrent or persistent dry cough, which is more at night or on exertion, with breathlessness or feeling of chest tightness are common symptoms of asthma. There may or may not be a wheeze along with these symptoms. These children often wake up at night coughing or with breathing difficulty.

Asthma is an allergic disease of the airways that makes the airway hyperreactive to any allergic substance. As a result, the airways become narrow and cause significant coughing and difficulty in breathing. This narrowing is temporarily relieved by inhalation of medicines like salbutamol. Symptoms can be seasonal or all-year-round depending on the allergen responsible.

Asthma is largely a clinical diagnosis based on clinical symptoms and indicators of allergy. Diagnosis of asthma becomes more likely in children with family history of allergies. A spirometry test can be performed in older children. In children with asthma, long term inhaled steroids are prescribed as preventive medicines. An inhaler with spacer is the most economical, safe and effective method of delivering medications and home nebulization should be avoided.

Q7 My son is 5 years old and has been coughing for 2 months and sometimes has fever of 100 degree F. He seems to have lost weight as well. He is not eating well and has become less active during the day. What could the problem be?

Cough, fever, loss of weight and loss of appetite in a previously healthy child can be symptoms of tuberculosis.

Tuberculosis in children is often acquired from an infected family member. Older children and adolescents can acquire the infections from outside the family as well.

This child must be evaluated for tubercular infection. A chest Xray, a sputum test and a mantoux test are the main tests done to diagnose tuberculosis. If the child is confirmed to have tuberculosis, screening test for all other family members must be done.

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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*
29th-30th April	**Neuropedia***	*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	**Delhi Respicon**	*Academics Activity*
Monday, 21st June	**Yoga Day**	*Cocurricullar Activity*

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

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Date	Academics	Cocurricular
Saturday, 26th June	**International Day against substance abuse (Book Release)**	*Cocurricullar 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*

IAP Delhi April 2021 Activity Report

1 *Autism Day*

Saturday, 3 April, 2021 (Online Webinar by IAP Delhi)

was celebrated by conducting Webinar **"KNOW AUTISM"** at DDAP.

Talks were given by ***Dr Sharmila Banerjee, Dr Praveen Suman, Dr Barkha Shorey & Dr Imran Noorani.***

2 *Recent Advances in Thalassemia*

Sunday, 4 April, 2021 (Online Webinar by IAP Delhi)

Organized by IAP Delhi in collaboration with Sir Gangaram Hospital.

3 *Mission Lakshya*

Mission Lakshya was conducted for Developmental aspects in First 1000 days of Child in collaboration with IAP Telangana.

4 *4th IAP Delhi Monthly Clinical Meet*

Thursday, 15 April, 2021

DDAP Platforms (Online Webinar by IAP Delhi)

Talk on **Fungal Infections in Children** by **Dr Amarjeet Chitkara** &

a Case Presentation by Department of Pediatrics, Jaipur Golden Hospital.

Dr Manish Gupta,

General Secretary, IAP Delhi 2021

Journal Clippings

1 Association Between Maternal Caffeine Consumption and Metalism and Neonatal Anthropometry (JAMA Netw Open. 2021)

2055 non-smoking women at low risk for fetal growth abnormalities with complete information on caffeine were enrolled at 12 clinical sites by Gleason et al for this cohort study. Caffeine was evaluated by both plasma concentrations of caffeine and paraxanthine and self-reported caffeinated beverage consumption measured/reported at 10-13 weeks gestation. Caffeine metabolism defined as fast or slow using genotype information from the single nucleotide variant rs762551 (CYP1A2*1F). Compared with the first quartile of plasma caffeine level (≤28 ng/mL), neonates of women in the fourth quartile (>659 ng/mL) had lower birth weight (β = −84.3 g; 95% CI, −145.9 to −22.6 g; P = .04 for trend), length (β = −0.44 cm; 95% CI, −0.78 to −0.12 cm; P = .04 for trend), and head (β = −0.28 cm; 95% CI, −0.47 to −0.09 cm; P < .001 for trend), arm (β = −0.25 cm; 95% CI, −0.41 to −0.09 cm: P = .02 for trend), and thigh (β = −0.29 cm; 95% CI, −0.58 to −0.04 cm; P = .07 for trend) circumference. Similar reductions were observed for paraxanthine quartiles, and for continuous measures of caffeine and paraxanthine concentrations. Compared with women who reported drinking no caffeinated beverages, women who consumed approximately 50 mg per day (~ 1/2 cup of coffee) had neonates with lower birth weight (β = −66 g; 95% CI, −121 to −10 g), smaller arm (β = −0.17 cm; 95% CI, −0.31 to −0.02 cm) and thigh (β = −0.32 cm; 95% CI, −0.55 to −0.09 cm) circumference, and smaller anterior flank skin fold (β = −0.24 mm; 95% CI, −0.47 to −0.01 mm). Results did not differ by fast or slow caffeine metabolism genotype. Thus, this study demonstrated that increasing caffeine consumption results in small reductions in neonatal anthropometric measurements with were observed. Caffeine consumption during pregnancy, even at levels much lower than the recommended 200 mg per day of caffeine, is associated with decreased fetal growth.

https://pubmed.ncbi.nlm.nih.gov/33764424/

2 Pediatric Eye Injuries by Hydroalcoholic Gel in the Context of the Coronavirus Disease 2019 Pandemic (JAMA Ophthalmol. 2021)

Use of alcohol-based hand sanitizers (ABHS) has grown exponentially in wake of Covid-19 pandemic. Martin et al accessed the data from French Poison Control Centre retrospectively to assess and quantify the increase in non-intentional ocular injuries associated with their use in April-August 2020 when compared to corresponding period of 2019. They found that there has been ***7 times increase in pediatric cases of ABHS eye exposures compared with 2019. Similarly, admissions to the eye hospital for ABHS exposure increased at the same period (16 children in 2020 including 10 boys; mean [SD] age, 3.5 [1.4] years vs 1 boy aged 16 months in 2019). Eight of them presented with a corneal and/or conjunctival ulcer, involving more than 50% of the corneal surface for 6 of them. Two cases required amniotic membrane transplant. Thus, the importance of awareness and sensitizing of parents/ caregivers regarding safe use of ABHS is well demonstrated.***

https://pubmed.ncbi.nlm.nih.gov/33475712/

Journal Clippings

3 Universal newborn hearing screening in South Africa: a single-centre study

Gina et al from South Africa conducted Otoacoustic emissions (OAE) and automated auditory brainstem responses (AABR) on two thousand two hundred sixty-nine healthy neonates within hours of birth. They observed that observed that in neonates screened with ABR, 2120 babies passed the test, and 149 of the cohort failed the screening. Contrastingly, the OAE test passed only 655 babies in the cohort and failed 1614 babies. Accordingly, OAE testing would have resulted in most babies needing referral. Hence the authors have argued that despite high-cost base of ABR testing, it should be used as the primary screening test as high cost this can effectively be mitigated against by the volume of avoidable referrals.

 Read the full artical

https://pubmed.ncbi.nlm.nih.gov/33791442/

4 Comparing Transcutaneous Bilirubin Levels with Serum Bilirubin Levels to Screen for Neonatal Jaundice

Kaivan Dadachanji collected retrospective data (Aug 2018-Jan 2021) from a single centre to analyse the accuracy of transcutaneous bilirubin (TCB) when compared to serum bilirubin (total) (TSB) level tested within 4 hours of each other. It was found that TCB, on average, is about 0.43 higher than TSB, p-value 0.0008. N = 754. It was also found the TCB is more accurate for babies born >92 hours of life (p-value 0.003). There is no change in variation between those born less than 92 hours of life and those greater than 92 hours of life. (Standard deviation: 1.67 vs 1.85, respectively; F Value 1.22). No correlation between Hispanic and Non-Hispanic patients was found.

 Read the full artical

https://doi.org/10.51362/neonatology.today/202131632829

5 The SANAD II study of the effectiveness and cost-effectiveness of levetiracetam, zonisamide, or lamotrigine for newly diagnosed focal epilepsy: an open-label, non-inferiority, multicentre, phase 4, randomised controlled trial

This randomised, open-label, controlled trial by Marson et al compared levetiracetam and zonisamide with lamotrigine as first-line treatment for patients with newly diagnosed focal epilepsy in children above 5 years and adults. This trial involving 990 volunteers was designed to assess non-inferiority of both levetiracetam and zonisamide to lamotrigine for the primary outcome of time to 12-month remission. Anti-seizure medications were taken orally and for participants aged 12 years or older the initial advised maintenance doses were lamotrigine 50 mg (morning) and 100 mg (evening), levetiracetam 500 mg

twice per day, and zonisamide 100 mg twice per day. For children aged between 5 and 12 years the initial daily maintenance doses advised were lamotrigine 1•5 mg/kg twice per day, levetiracetam 20 mg/kg twice per day, and zonisamide 2•5 mg/kg twice per day. All participants were included in the intention-to-treat (ITT) analysis. The participants and followed up for a further 2 years. Patients were randomly assigned to receive lamotrigine (n=330), levetiracetam (n=332), or zonisamide (n=328). Levetiracetam did not meet the criteria for non-inferiority in the ITT analysis of time to 12-month remission versus lamotrigine (HR 1•18; 97•5% CI 0•95–1•47) but zonisamide did meet the criteria for non-inferiority in the ITT analysis versus lamotrigine (1•03; 0•83–1•28). The PP analysis showed that 12-month remission was superior with lamotrigine than both levetiracetam (HR 1•32 [97•5% CI 1•05 to 1•66]) and zonisamide (HR 1•37 [1•08–1•73]). There were 37 deaths during the trial. Adverse reactions were reported by 108 (33%) participants who started lamotrigine, 144 (44%) participants who started levetiracetam, and 146 (45%) participants who started zonisamide. Lamotrigine was superior in the cost-utility analysis, with a higher net health benefit of 1•403 QALYs (97•5% central range 1•319–1•458) compared with 1•222 (1•110–1•283) for levetiracetam and 1•232 (1•112, 1•307) for zonisamide at a cost-effectiveness threshold of £20 000 per QALY. Cost-effectiveness was based on differences between treatment groups in costs and QALYs. Thus, it was demonstrated that Lamotrigine should remain a first-line treatment for patients with focal epilepsy.

 Read the full artical

https://pubmed.ncbi.nlm.nih.gov/33838757

Complied by Dr Puneet Kumar

Crossword Answer March 2021

	1 C	C	A	2 M						
	T		3 K	O	4 P	5 L	I	K		
6 V	E	7 V	D	R	L	E				
A	V			8 P	I	N	W	O	R	M
T			9 L	H	C	S				
E			10 F	E	L	U	11 D	A		
R			T	A			12 S	C	I	D
							D			

Vertical

1 *Limb defect deriving its name from an animal's foot* (4)
2 *Fibrosis of skin: see it to diagnose it* (7)
4 *MRI sign of asphyxia neonatorum* (4)
5 *This is dislocated in Marfan syndrome* (3)
6 *Acronym for an association of malformations* (5)
9 *Abnormal with liver dysfunction* (3)
11 *New name of ambiguous genitalia* (3)

Across

1 *Fetal lung anomaly which is known to disappear with time* (4)
3 *Red lesions on inner aspect of cheeks in a vaccine preventable infection* (6)
7 *Blood test named after a laboratory* (4)
8 *A worm infestation with perianal itchiness as symptom* (7)
10 *Side lab test for corona; named after a Bengali character* (6)
12 *Bumper to bumper infections* (4)

Contributed by Dr Pankaj Garg

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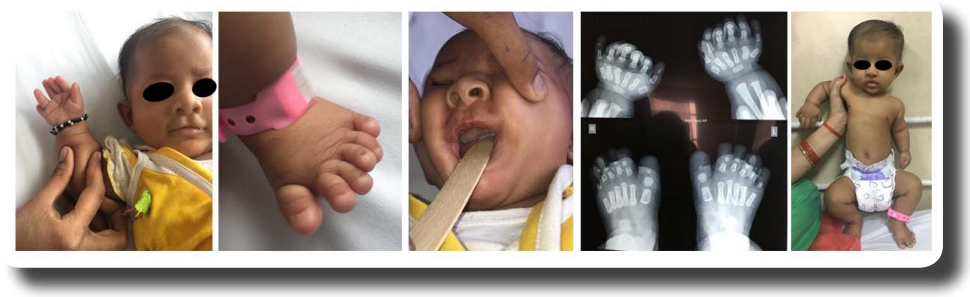
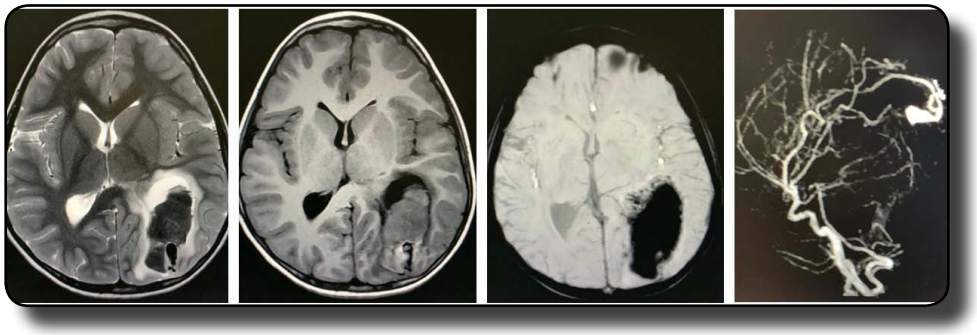
Photo Quiz March Answer 2021



Question ***9 months old baby born of non consangious marriage came with H/o repeated febrile illnesses. Child had short forearm and lower legs with high arched palate, with wide philtrum, extra fingers and toes, malformed finger nails and toe nails anhidrosis with dental abnormalities and VSD.***

Answer ***Ellis-Van Creveld Syndrome***

X-Ray Quiz March Answer 2021



Question *4 yrs Old Female child with H/o fever since 4 days, Headache since 3 days with loss of consciousness since 2 days with vomiting 4-5 episodes since 1day.*

Also history of irrelevant talk since one day.

On examination no FND, no neck rigidity with B/L brisk reflexes.

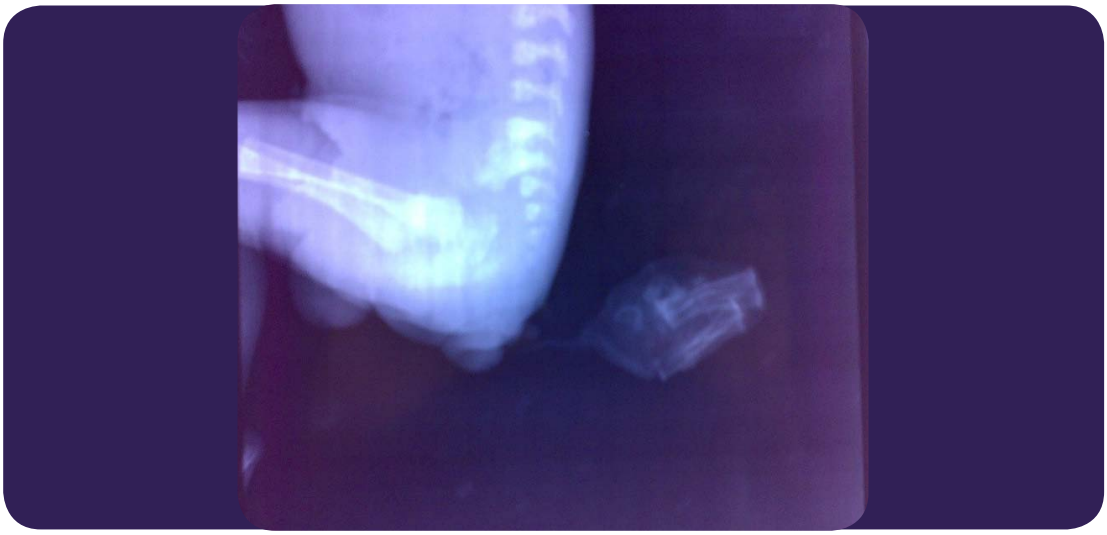
Answer ***Left posterior parietal intracranial hemorrhage due to pial high flow arteriovenous fistula with ruptured large saccular aneurysm at fistulous site***

Contributed by Dr Anil Vaishnavi

Photo Quiz April 2021

1.6 yrs old presented with slow growth before & after birth; intellectual disability & abnormalities of bones in the arms, hands, and fingers. Name the disorder and what is the life expectancy in this disorder?

X-Ray Quiz April 2021



Make 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 (XXXVIII No. 5)

Cultural Page

There is a light at the end of tunnel,
In this grim time chances seem subtle,
My resilience is doing struggle,
But my spirits are denying to crumble,
Thinking, as I trundle,
One day somebody will solve this puzzle,
Sun will rise to end this trouble,
Children will come out of home...
To jump in the puddle,
On the beaches and hills...
Friends will laugh and chuckle,
Babies will not cry...
Mothers will start to cuddle,
Playgrounds will be full...
People will come out of bio bubble,
No isolation and quarantine...
All of us will sing love songs through funnel,
Keep your calm, be humble,
Though it looks remotely possible,
Time will definitely come when we will huddle...

Dr Ruchi Tomar

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 Form

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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IAP guidelines for Pediatric skincare state that Ideal care of skin of newborn comprises of[1]:

- Gentle cleansing[1]
- Protection of barrier function[1]
- Prevention of dryness of skin[1]
- Promotion of normal development of skin[1]

Designed for newborns sensitive skin

NEW Johnson's® cottontouch®

To promote normal development of skin: Clinically proven to nurture infant skin microbiome[2,3]

- Ideal for Infant massage[4]
- Gentle cleansing with HMP technology[5]
- Protection of barrier function with unique delivery system[3]
- Prevention of dryness of skin[6]

RA/JB/8Mar2021/05

References : 1. DShastri DI, et al. Indian Academy of Pediatrics Guidelines for Pediatric Skin Care. Indian Pediatrics. 2021;58:153-161. 2. Data on File. 3. DOF 3 Capone AAD 2017. 4. Capone K, et al. Effects of Emollient Use on the Developing Infant Skin Microbiome. Presented at the American Academy of Dermatology Annual Meeting, March 1-5, 2019, Washington, DC, USA. 5. Johnson & Johnson Consumer Products Worldwide. Claim support and data summary for Johnson's Cottontouch Baby Oil. 6. Anwar S, et al. A scoring Method to assess the gentleness of cleansers. Presented at the American Academy of Dermatology Annual Meeting, March 20–24, 2020, Denver, CO, USA. 5. Data on file.