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**GOA STATE CHAPTER**

**For Private Circulation**

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# President's Address

My Dear Friends and Colleagues,

With a heavy heart I acknowledge the untimely demise of my dear friend, colleague and Ex. E.B. member Dr. A.O. Nazareth. His was a life of service to the poor with love. He will always be remembered for his valuable advice and incredible positive influence. We have lost a simple but extraordinary human. His contributions to the IAP fraternity and his services to the poor must not go unnoticed. We will miss his valuable advice and presence.

As I come to the end of my term of office as President of IAP Goa State Chapter, I thank the Executive Board Members and other Committee Members for their contributions in making us a state to reckon with at the national level.

I must congratulate our colleagues who have achieved academic excellence in their pursuance of ancillary courses. My sincere thanks to the editors Dr. Priyanka, Dr. Celine and Dr Prity for the excellent systematic compilation and timely issuance of the IAP bulletin.

Before ending let me acknowledge many debts of gratitude.

I'd like to commend the contributions by Dr. Poonam, Dr. Priyanka, Dr Harshad , Dr.Sumant, Dr. Sushma , Dr. Dhanesh to name a few who have successfully helped to raise the bar at the National Level in academics and cultural activities.

My whole hearted thanks to Dr. Ryan and Dr. Kamlesh who worked tirelessly behind the scenes to provide me with support and the most able assistance. I would like to note my special appreciation for the excellent work that they have done inspite of their busy schedules to meet the demands of the office.

It would be very remiss of me not to mention Madam Dr. Mimi who has always been our pillar and come to our rescue so many times. I am forever grateful for all her assistance and wise counsel.

Finally, let me thank all of you my friends and colleagues for your friendship and support. Your punctuality at meetings and CME's made a world of difference.

I take this opportunity to introduce our new dynamic and enigmatic team of office bearers for 2021 – 2023. President -Dr. Dhanesh Volvoikar, Secretary – Dr. Sumant Prabhudesai and Treasurer – Dr. Siddhi Akarkar. I wish them every success in their endeavour as they head IAP – Goa State Chapter.

Lastly 2020 has been a very trying year and in all earnest I pray that you and your dear ones stay safe.

Thank You

Dr. Arvind D'Almeida

# EDITORS NOTE

Greetings to all my fellow GAPians!!!

It is with immense pleasure that we upload the 11th Issue of the Goa IAP State Chapter e bulletin.

This being the final issue for this year and from our team, we hope you enjoy reading it.

I, along with Prity and Priyanka thank Dr Arvind, Dr Ryan and Dr Kamlesh for giving us this opportunity to design the e-bulletin and for their continued guidance, support and help.

We express our deep gratitude to all the Goa IAP members who have contributed to our e bulletin through articles, case discussions, case presentations, case studies, through their activities and achievements and even those who answered the quiz at the end of each bulletin. A big thank you to all those who gave us valuable feedback – it helped motivate and encourage us with new ideas.

A big applause to my co-editors Prity and Priyanka who have been the driving force in getting the e bulletin completed on time. Thankyou for your ideas, your time, your effort, your hardwork but most of all for understanding me.

Thankyou once again

Wishing you all a Happy, Safe and Healthy 2021

Dr Celine Andrade

# A Tribute to late Dr. A.O.Nazareth

In the passing away of Dr Anthony Olegaro Nazareth on 9-12-2020 the I.A.P. Goa state Chapter and Goa lost a very capable, humble, kind and a sincere member of our Paediatric fraternity.

'Tony', as we used to fondly call him was an alumni of the 5th (1967) batch of Goa Medical College. As a student he was very dedicated and sincere in his studies. As my batch mate I have very fond memories of his companionship.

Tony was a very active member of our 1967 batch. His incredible positive influence and zest for life was seen at all our batch get-togethers. His enthusiasm and cooperation in organising our 50th Anniversary in 2017 was evident. Also when we planned to have a tour of Singapore ,Malaysia Thailand he was first to say "I am in"

As a Paediatric practitioner he was very much respected by his patients and colleagues. As an office bearer of Goa state I.A.P. zonal representative he performed his duties immaculately and diligently.

He leaves behind his dear wife Alcina and sons Rahul and Rohan/Viola. He was a proud grandfather of his grand daughter Samara.

We shall always miss his regular and lively presence at our meetings. May His Soul Rest In Eternal Peace.

Dr Anant Kini

# PRINCIPLES AND PRACTICE OF NEONATAL CARE IN COVID 19 PANDEMIC

**Dr Sarvesh Kossambe**
**MD (Paediatrics), DM (Neonatology)**

## INTRODUCTION

On 17th November 2019, the first case of infection with a novel corona virus was identified. The outbreak was reported by China to WHO on December 31. WHO declared it as pandemic on March 11, 2020. The novel virus was named as SARS-COV-2. The new respiratory syndrome was named as COVID-19. Since then, research is being conducted at multiple sites in order to better define the epidemiology, clinical characteristics, prevention and treatment of Severe Acute Respiratory Syndrome-Coronavirus-2 infection in adults.

Review of the literature has shown that newborns of mothers with positive/suspected SARS-COV-2 infections rarely acquire the disease or show adverse clinical outcomes. With this evidence in mind, it appears that strict postnatal care policies, including separating mothers and newborns, discouraging breastfeeding, and performing early bathing, may be more likely to adversely impact newborns. In over 800 newborns reported in the literature, the incidence of vertical transmission has proven to be low. Additionally, adverse newborn outcomes seem to be a function of maternal disease status in the small subset of newborns with critically ill mothers, rather than illness due to SARS-COV-2 infection. Furthermore, postnatal transmission through any route other than respiratory particles shared between mother and newborn appears to be unlikely. The benefits conferred by early exposure to the mother, direct breastfeeding, and delayed bathing have a far more substantial body of supporting evidence, and therefore, the established benefits of these practices appear to outweigh the risk of viral transmission to the newborn. While more long-term follow-up data and studies on routes of transmission in the few newborns who are infected at birth are greatly needed, the preliminary evidence on outcomes in newborns born to SARS-COV-2 infected mothers is reassuring.

Some researchers postulate that milder disease in newborn infants and young children is due to the relative immaturity of angiotensin-converting enzyme 2

(ACE2) protein, which usually acts as a receptor for SARS-COV-2 in adults. Furthermore, the higher percentage of fetal hemoglobin in newborn infants may be protective over SARS-COV-2.

## CLINICAL FEATURES / LABORATORY CHARACTERISTICS

The extent of the disease severity in newborn infants is difficult to describe with available limited data. The incubation period may vary from 2-14 days with a median of 5 days. Newborn infants tend to get diseases that are milder and associated with better outcomes compared to adults. They can be asymptomatic most of the times or can present with mild symptoms like minimal respiratory distress.

| Clinical features | Laboratory |
|---|---|
| Asymptomatic | Lymphopenia |
| Respiratory distress | Leucocytosis |
| Cough – sporadic | Elevated transaminases |
| Fever – mild | Elevated cytokine levels |
| Cyanosis | Xray chest – normal or bilateral infiltrates |
| Feed intolerance | |

## DIAGNOSIS / TESTING PROTOCOL

There are 3 scenarios:

1. Neonates born to suspected/ confirmed COVID 19 mother or
2. Neonates exposed to confirmed COVID 19 positive person or
3. Symptomatic neonates irrespective of history of exposure

Scenario 1 and 2:

Mother had COVID-19 infection within 14 days before birth, or

History of contact with COVID-19 positive persons (including mother, family members in the same household or direct healthcare provider) in the postnatal period

Timing of test: at birth (if mother had COVID-19) or at detection of the history of contact with COVID-19 positive person (postnatal exposure). If a sample is not obtained at birth due to logistic reasons, it should be obtained as soon as possible. Rooming-in should not be postponed if testing is delayed.

If the first test is negative, a repeat test should be done after 5-14 days of birth/exposure. However, the test should be done immediately, if new symptoms (respiratory distress, lethargy, seizures, apnoea, refusal to feed, diarrhea) appear.

Scenario 3:

Presenting with pneumonia or SARI (respiratory distress, with or without cough, with or without fever) that requires hospitalization, with onset at more than 48-72 h of age, unless there is another underlying illness that completely explains the respiratory signs and symptoms.

## MANAGEMENT

**Delivery room management/ Neonatal resuscitation:**

**Resuscitation area**: neonate should be resuscitated in a separate room adjacent to the delivery room / if not feasible, resuscitation warmer should be physically separated from the mother's delivery area by at least a distance of 2 meters,

**Resuscitation personnel**: minimum number of personnel should attend with full set PPE including N95 mask.

Mother: mother should practice hand hygiene and wear triple layer mask.

Resuscitation **guidelines**: standard NRP guidelines should be followed. Delayed cord clamping and skin to skin contact can be practiced. Endotracheal administration of medications should be avoided.

**Care of stable neonates born to suspected or confirmed COVID 19 mothers: Location of care and feeding.**

Neonates should be roomed in with their mothers and be exclusively breastfed. Mother should frequently practice hand hygiene and wear a triple layer mask. Mother-baby dyad should be isolated from other infected or suspected cases.

For supporting lactation, nurses trained in essential newborn care and lactation management should be provided.

A healthy asymptomatic willing family member who is not positive for COVID-19, and has not been in direct contact with suspected or confirmed COVID-19 person may be allowed to provide support for mother and neonate.

If rooming-in is not possible because of sickness in the mother, the neonate should be fed expressed breast milk of the mother by a nurse or a trained healthy family member.

If safe, early discharge to home, followed by telephonic follow up or home visit by a designated healthcare worker may be considered.

| **Organization** | **Location of newborn care** | **Breast feeding** |
|---|---|---|
| WHO | Rooming in with mother | Breast feeding |
| AAP | Separation | Expressed breast milk |
| CDC | Case to case decision | Case to case decision |
| RCPCH, UK | Rooming in with mother | Breast feeding |
| IAP, NNF, FOGSI, INDIA | Rooming in with mother | Breast feeding |

**Care of symptomatic/ sick neonates born to suspected or confirmed COVID 19 mothers: respiratory support, specific treatment**

Symptomatic or sick neonates born to suspected or confirmed COVID 19 mothers should be nursed in a separate isolation facility, preferably in single closed rooms. In case, enough single rooms are not available, closed incubators (preferred) or radiant warmers could be placed in isolation wards for neonates, at a distance of 1 meter from each other. Suspected and confirmed cases should be nursed in separate isolation facilities, however if it is not feasible, the two cohorts should be segregated leaving enough space. Negative air pressure isolation rooms are preferred. Isolation rooms should have adequate ventilation. If room is air conditioned, ensure 12 air changes per hour and filtering of exhaust air. The area should not be a part of central air conditioning. The doctors, nurses and other staff working in isolation facility should be separate from the ones working in regular NICU. The staff should have adequate supplies of PPE and should be trained for the use of same.

**Respiratory support** for neonates with suspected/confirmed COVID-19 is guided by principles of lung protective strategy including use of non-invasive ventilation. Viral filters to the expiratory limbs of any respiratory devices should be used if available. Intubation should be performed for usual indication and must be performed by the most experienced person. Consider use of aerosol box, inline suction device and HEPA filters. Area providing respiratory support should be a negative air pressure area.

**Specific anti-COVID-19 treatment** is not recommended in symptomatic neonates. Use of adjunctive therapy such as systemic corticosteroids, intravenous gamma globulin and convalescent plasma is not recommended in symptomatic neonates with suspected or confirmed COVID-19. (5)

## Discharge policy

Suspect neonates:

Stable neonates exposed to COVID19 and being roomed-in with their mothers may be discharged together at the same time.

Stable neonates in whom rooming-in is not possible because of the sickness in the mother and are being cared by a trained family member may be discharged from the facility by 24-48 hours of age.

COVID 19 positive neonates:

Asymptomatic neonates or those with mild to moderate clinical course whose symptoms and need of oxygen abate within 3 days can be discharged from the hospital after 10 days without repeating RT-PCR test.

In severe cases, a single negative RT-PCR should be demonstrated after resolution of symptoms, prior to discharge.

## Immunization policy

Follow routine immunization policy in healthy neonates born to mothers with suspected/confirmed COVID-19.

In neonates with confirmed infection, vaccination should be completed before discharge from the hospital as per existing policy. (5)

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# IMMUNOTHERAPY FOR ALLERGY

**-Dr Dhanesh Volvoikar**

**Consultant Paediatrician and Allergist**

Every third individual in the world population suffers from some type of Allergy.

It is quite obvious that those who suffer from these debilitating symptoms such as a constant blocked nose, persistent wheezing in children or full blown Asthma are looking for a permanent solution. Although treatments through Inhalers and Intra nasal Sprays are available to control these medical conditions and symptoms, their effect is nullified once the patient stops using them. Monoclonal antibodies such as Omalizumab are also being developed, however its exorbitant cost is beyond the reach of the common man.

What stands out amongst all these newer modalities in treating IgE mediated allergic conditions is Allergen Specific Immunotherapy. It has the potential to halt the disease progression and prevent airway remodelling, a main feature in the development of bronchial asthma. It can completely reverse your allergic status to a non allergic one and long term remission with a disease-free life becomes a possibility.

It is available in two modes either injectable (Subcutaneous Immunotherapy or SCIT) or through orally administered drops (Sublingual Immunotherapy or SLIT). Prerequisite for this therapy is a controlled stable patient with culprit allergen being identified by an almost painless simple and safe Skin Prick Test (SPT).

Most of the times allergen responsible for patients clinical conditions in our humid costal atmosphere is a tiny microscopic creature called the House Dust Mite which is usually found in mattresses, pillows, and soft toys or in any fabrics which cannot be washed and dried. Other common allergens are pollens, fungi, animal dander or particles of insects like cockroaches. Contrary to the myth and common belief, food is not the usual culprit in respiratory allergy. Milk, egg, shell fish including prawns, tree nuts like almonds, wheat, peanut, fish and few lentils contribute significantly in an acute allergic reaction but very rarely cause a respiratory condition.

In Immunotherapy either SCIT or SLIT, the same antigen to which one is allergic to is given in an extremely diluted form in a controlled manner and then gradually increased to develop tolerance. It consists of a built-up phase

wherein an increasing concentration of doses is given over 6 months. And once the threshold level is reached, a maintenance dose has to be continued for 3 to 5 years in order to achieve a very good response and a long term remission. Usually if it is effective by 6 months to a year, the patient shows clinical improvement with a gradual disappearance of symptoms and the patient can be weaned off from all medications. An even better response is seen when the dose is administered within a good environmental control of concern antigens.

SCIT which is also known as "Allergy Shots" is given initially twice a week and gradually reduced to once a week; further down once fortnightly and then a monthly injection. After having given the shot the patient needs to stay at the doctor's clinic for thirty minutes. With highly purified and standardised antigens previously seen side effects including anaphylaxis have now become a rare phenomenon. And over the last few years since 2017 no fatalities are being reported.

SLIT is very much safe compared to SCIT and serious side effects are almost nonexistent. It is given by self administered drops at a fixed time on an empty stomach, keeping it below the tongue for 2 minutes before swallowing. Once the built up phase is complete, which usually takes about 6 months, further course is given twice a week over the next 3 to 5 years. Except for the 1$^{st}$ visit, the patient does not require to visit the doctor. The dose can be administered safely at home as per the given instructions. Both SCIT & SLIT are tailor made as per the requirement of the patient by a trained Allergist and it is not available in open medical shops in India.

Food Allergy is slowly increasing in India and immunotherapy for same is in an experimental stage. Some higher centres in our country have done effective immunotherapy in cases related to milk anaphylaxis. Recently the US FDA has approved "PALFORZIA," an oral immunotherapy tablet for Peanut allergy. This type of groundnut allergy is not commonly seen in this part of the world. Insect Venom Allergy can be completely cured by Immunotherapy and apart from Honey Bee bite reaction it is not common in India.

Allergic manifestations usually occur as a progressive march beginning with Atopic Dermatitis or Dry Skin in Infancy or some mild manifestations of food allergy usually due to animal protein in milk due to absence of exclusive breastfeeding. Most of these children develop repeated wheezing for few years and go into spontaneous remission after 5 or 6 years. Identifying the triggering allergen by the Skin Prick Test and adding environmental control to ongoing inhalation therapy can result in a better control of their persistent clinical manifestation. Only some of these wheezing children remain persistent with

their symptoms and are ideal candidates for Immunotherapy. Although indication for SCIT is above 5 years, SLIT can be given from lower age group. Ages 2 to 5 years have been labelled as relative contraindications for Immunotherapy by guidelines developed by Indian College of Asthma Allergy & Immunology. And SLIT is clinically not indicated in every wheezing child in this age group. What is pertinently seen in recent days in our country is that allergy prone individuals come with Allergic Rhinitis in early adolescent years or in late childhood and have the potential to develop full blown asthma in few years completing the full allergic march as the airway of upper respiratory tract and lower down in lungs are united. These are the ideal patients to begin allergen immunotherapy. There is no upper age group for starting allergen specific immunotherapy. But it is advisable to start immunotherapy in the early period of disease progression as it may not be effective once airway remodelling is complete in asthmatic individuals. Airway remodelling refers to permanent structural change that occurs in both small and large airways. Immunotherapy also prevents poly-sensitization. Hence it is advisable to begin immunotherapy in the early part of disease before patients becomes sensitive to the many types of pollen making it difficult to desensitize.

Immunotherapy which is the only modality of treatment available today to reverse a patient's state from an allergic one to non-allergic is indicated in Asthma, Allergic Rhinitis and Rhino-conjunctivitis. Recently it is also approved in uncontrolled Atopic Dermatitis sensitized to aeroallergen and specifically to house dust mites. Many randomized control studies have shown that immunotherapy helps in reducing symptom score, decreases need for medication, improves quality of life, prevents newer sensitization, halts disease progression and is cost effective when compared to the total cost of medication over a long period of time. Various studies have shown that it is highly effective against house dust mites, pollens and pet dander. It is effective to a certain extent in moulds like aspergillus and alternaria and insects like cockroach. It is completely curative in venom anaphylaxis and results of food are encouraging. With newer modalities of immunotherapy like epicutaneous form using skin patch or intra lymphatic one (just 3 or 4 injections in the lymph node) in the pipeline, the world of allergy management will be more fascinating in the time to come.

# Dr Nandita De Souza: the recycled teenager!!

--Penned by Dr Prity Shetye

***"Take up an idea. Make that one idea your life-think of it, dream of it, live on that idea. Let the brain, muscle, nerves, every part of your body be full of that idea, & just leave every other idea alone. This is the way to success"***
***SWAMI VIVEKANANDA***

Not only is this observation a sure shot way to success but it describes Dr Nandita very aptly & helps us understand her brilliance in imagining, creating & sustaining an organization like SETHU. After all, SETHU is a unique organization, a concept not attempted by any Pediatrician in Goa.

BORN ON 3RD SEPTEMBER 1960, the youngest of 5 children, she was provided with all the love, pampering & inspiration as she was the 'baby' of the family. A naughty child, she was always the ringleader in school. In primary school, she tried her hands at crayon art, offering her drawings for sale (@ Rs1/drawing, a princely sum at that time) & bullied her classmates into buying them! Their parents complained to the principal & her mother was summoned to school! Unfortunately, that ended Dr Nandita's entrepreneurial skills.

Choosing pediatrics also was the result of 2 providential circumstances! Being hugely inspired by Dr. Majumdar, who was Head of Department of Pediatrics when she was a student & obtaining high marks in MBBS exams helped Dr Nandita apply for the MD pediatrics seat. This was pure serendipity, as she wasn't even fond of kids at the time of joining! Fortunately, that soon changed once her interactions with the children rekindled her own 'child at heart 'nature & fueled her passions.

When the question was posed to Dr Nandita, as to what motivated her to start SETHU, pat came the reply- "I think I am just the right kind of crazy! I absolutely love learning about child development, the workings of the mind, the influence of environment, the criticality of relationships & always read a lot about these aspects of being human. While I was working at GMC & HOSPICIO, I came across so many children who had developmental & behavioral difficulties. However, our training did not prepare us to deal adequately with these issues. My fascination, with child development drove me forward, coupled with my desire to learn & a conviction that this service was needed. Many of my colleagues thought that it was professional suicide when I started, as I had given up a very secure (& well paying!) Government job at the Health Services. However, I have no regrets & deeply believe that this is what I was born to do. I am fortunate to have an awesome team at SETHU, as this work cannot be done alone."

## Genesis 0f SETHU

SETHU started off very small in 2005 –6 women who decided to come together with a lot of help from their families & friends. The clinical team consisted of just 3 people-Anjali Baretto (a speech therapist), Yogita Joshi (a special educator) & Dr Nandita. They had 3 trustees, one of whom was a pediatrician (Dr Ameeta Mascarenhas), who gave them all the backing.

Madam's brother-in-law lent her a flat in Miramar to work for 2 years. She also had access to good (& free!) financial, as well as legal advice. All the pediatricians in Goa supported SETHU by referring children & families, who were the key players that remains the raison d'etre of Sethu.

Sethu, has grown over the years & now is a multidisciplinary team with a staff of 25. Annually it helps over 1000 children from babies to 19 year olds, with a range of developmental & behavioral challenges. Sethu works closely with families, teachers, anganwadi workers & other professionals who care for children. Keeping with the times and the challenge provided by the Covid pandemic, Sethu has gone online & offers a range of telehealth services to ensure that excellent developmental & behavioral care remains topmost on their agenda.

**TEAM SETHU**

***Journey of developmental pediatrics through the eyes of Dr Nandita***

When madam started private practice, 28 years back Developmental Pediatrics was almost an unknown entity in Goa. However, the field grew rapidly over almost 3 decades since then. The rise of NICUs & the availability of expert neonatal care for high- risk babies, has also increased the awareness & demand for developmental follow up.

## An interesting incident with a patient fondly remembered

In madam's own words:

"I started going grey very early & never bothered to color my hair. I remember a really funny incident from when I was in my late 30s. I was accessing a child with learning difficulties & asked him a lot of questions. At the end of the session, I complimented him on all his answers & enquired if he had any questions for me. He eyed me for a couple of seconds & asked "how old are you? Trying to be clever, I replied "what do you think?" without batting an eyelid he said "sixty- one!" I consoled myself by thinking that since he had dyslexia, he probably meant sixteen!!!"

Dr Nandita is known to wear multiple hats effortlessly, not only is she academically very strong but also good at multiple extracurricular activities. When asked about it, madam had this to say "I love music, reading & dancing, however, these are just hobbies & I cannot claim any expertise. I enjoy standup comedy-maybe that would be a part of my retirement plan!"

## Her inspiration

Madam's parents have been her inspiration. To quote "my parents were the most compatible couple on earth. Even in their 80s, they would go for a walk around the colony, holding hands like romantic teenagers. My parents always had a rule, to never go to bed angry with each other. I aspire to this in my marriage (but must confess that I struggle to follow this rule consistently)".

**Message for budding pediatricians**

Dr Nandita has this pearl to share: to really understand children, we need to step out of the clinics & go where children are-in homes, schools & the community. By virtue of their knowledge & influence, pediatricians can play a leadership role to make this world a better place for all children. Let us use this power wisely & widely.

"I want to thank all the pediatricians of Goa from the bottom of my heart for their faith & friendship, which has been my rocket fuel & enabled Sethu, to become a premier institution for child development & family guidance in Goa. DEU BOREM KORUN!!"

I'll end with these beautiful words told to me by one of Dr Nandita's fellowship student "the most amazing thing about Dr Nandita is her commitment to her profession & the sheer simplicity & ease with which she conducts each & every session of hers. Parents as well as children are instantly at ease. It's not only about a diagnosis, but a journey along with the parents, understanding & empathizing with them. Ma'am has a protocol & SOP for everything...Believe me! Even a SOP about how to greet parents & the child! She is my personal Google app …any resource you ask for …you are given multiple sources to read from & understand. She once told me…she wishes to be born as a pair of eyes in her next life…as there is so much to read!"

Truly an inspiration, that's Dr Nandita!!!

# CASE REPORT ON PEDIATRIC INFLAMMATORY MULTISYSTEM SYNDROME- TEMPORALLY ASSOCIATED WITH COVID 19 IN GOA

Author

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**ABSTRACT**: The recent corona virus infection had flourished from Wuhan, China to every nook and cranny of the world over the past 8 months causing widespread morbidity and mortality. Paediatric Inflammatory Multisystem syndrome- temporarily associated with SARS CoV2 infection that is being reported from parts of the world is a possible hyper inflammatory sequalae of the infection with a varied and florid course. The following case report is about a 9yr male child who presented to the ER with fever, rash, malaise, febrile delirium and hypotension. With the clinical workup he was noted to fit in criteria of PIMS TS and was managed medically in lines of the same with intravenous immunoglobulin and steroids. Child improved dramatically over the days. Child is under follow-up and no recurrence noted as yet.

**KEYWORDS:** COVID 19, Paediatric Inflammatory Multisystem Syndrome- temporarily associated with SARS CoV2

## I. INTRODUCTION

The recent emergence of the SARS CoV 2 virus though has a mild course of presentation in children, also has a more flared up systemic hyper inflammatory manifestation labelled as Paediatric Inflammatory Multisystem Syndrome- Temporally associated with SARS CoV 2 (PIMS- TS) later on. It is characterised by appearance of rash, high fever, generalised myalgia, and systemic inflammation with no evidence of other septic foci and a marked response to corticosteroids and intravenous immunoglubulins . Most of the paediatric cases of SARS CoV2 infection presented with a clinical picture of

Kawasaki disease and toxic shock syndrome with involvement of gastrointestinal system and with cardiac dysfunction. In the case report following, we report the case of a child previously exposed to SARS CoV2 infection but not getting tested positive, but now presenting with a clinical picture characteristic of PIMS-TS.

## II. CASE REPORT

We present the case of a 9yr male child with acute onset of high fever, conjunctival hyperaemia with non itchy maculopapular non blanching rash over the limbs which progressed to the abdomen and back. The child had myalgia with no arthritis, no respiratory, urinary or abdominal complaints, no history suggestive of meningitis or any other septic foci. Clinical examination revealed tachycardia with no tachypnoea, saturations being maintained in room air, no significant lymphadenopathy, anaemia or any evidence of third spacing. There was generalised myalgia, no focal tenderness and no organomegaly. On day 4 of fever child was noted to have hypotension, low pulse volume. Haematological workup showed elevated total count (21000 cells/ml) neutrophilia, lymphopoenia, thrombocytopenia with elevated ESR (56 mm/hr), CRP and procalcitonin (4.76 ng/ml) levels and moderately elevated transaminases with hypoalbuminemia (2.1mg/dl). Initial hyponatremia got corrected with administration of maintenance intravenous fluids. Urine routine was normal with no hematuria but mild albuminuria. Chest x-ray showed minimal pleural effusion not accounting for the severity of the clinical presentation. Abdominal and chest ultrasounds were normal.

Child worsened clinically despite antibiotic administration. By day 2 of admission child was noted with poor peripheral perfusion with blood pressure less than shock centiles; child had to be started on 2 ionotropic agents nor epinephrine and dobutamine. 2DECHO done was suggestive of global hypokinesia with ejection fraction of 55% with no ectatic changes. Child had elevated ferritin and triglyceride levels though not meeting criteria for MAS/HLH. Blood and urine cultures were sterile.

In view of close COVID contact, with the child's father being detected SARS CoV2 positive one month back (requiring non invasive mechanical ventilation with 13 day hospital stay), the child was tested for SARS CoV2 antibody and was detected positive with high titres of 34.6.

Child was treated as a case of PIMS-TS and started on intravenous immunoglobulin. In view of persistence of fever with ionotropic dependence, child was then started on intravenous methyl prednisolone, prophylactic anticoagulants and supportive therapy. Child improved clinically in 24hours and the inflammatory markers then normalised.

## III. DISCUSSION

With the rising case presentations of PIMS TS, Royal College of Paediatrics and Child Health (RCPCH) and WHO has brought about case definition for the same.

The earlier description of the mode of pathogenicity of corona virus was thought to be through immune dysregulation with classical fall in total count but with high neutrophils and fall in lymphocyte count; in contrast to this PIMS TS has a flare of neutrophils with elevated total count and significant rise in inflammatory markers as seen in HLH/MAS and a classical coronary and cardiac dysfunction.

| Criteria put forth by RCPCH and WHO (clustered and tabulated) | Criteria met by how many candidates in other studies according to RCPCH | Whether met by our case report candidate |
|---|---|---|
| Persistent fever >38.5°C in 0-19 yrs of age for >3days | All | Yes |
| 2 of the following 5 criteria to be met according to WHO preliminary case definition | | |
| Hypotension or shock | Most | Yes |
| Rash or bilateral non-purulent conjunctivitis or muco-cutaneous inflammation signs (oral, hands or feet) | Most | Yes- no purulent conjunctivitis fig 1) non itchy maculopapular rash non blanching persistent for 4 days and resolved |

| | | |
|---|---|---|
| | | with time (fig 2) |
| Features of myocardial dysfunction, or pericarditis, or valvulitis, or coronary abnormalities (ECHO findings or elevated Troponin/NT-proBNP) | -- | 2D ECHO done on day 4 of fever s/o global hypokinesia with no valvular changes with ejection fraction of 55% ,repeat 2DECHO 52hrs post IVIG s/o EF of 60% with improved contractility |
| Evidence of coagulopathy (abnormal PT, PTT, elevated d-Dimers | -- | No |
| Acute gastrointestinal problems (diarrhoea, vomiting or abdominal pain) | Some | Yes |
| AND | | |
| Elevated markers of CRP, ESR , procalcitonin. | All | Elevated levels of inflammatory markers which normalised in course of therapy (fig 4) |
| AND | | |
| No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes | All | Yes |
| AND | | |
| Evidence of COVID **(**RT-PCR, antigen test or | All | Contact of patient with covid 1 month back, |

| | | |
|---|---|---|
| serology positive) or likely contact with patients with COVID | | antigen testing high positivity. |

Fig 1. non purulent b/l conjunctivitis noted

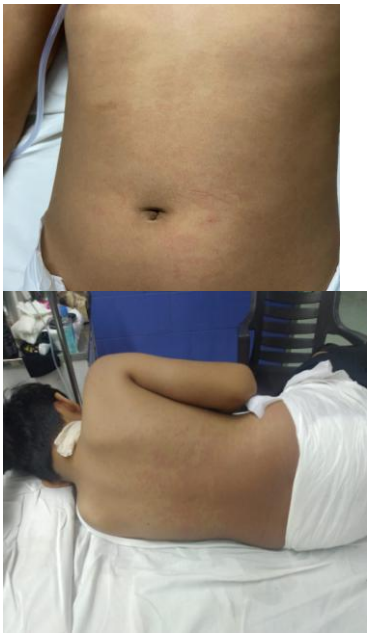

Fig 2. exytesive non itchy non blaching rash noted over the face, limbs, abdomen and back

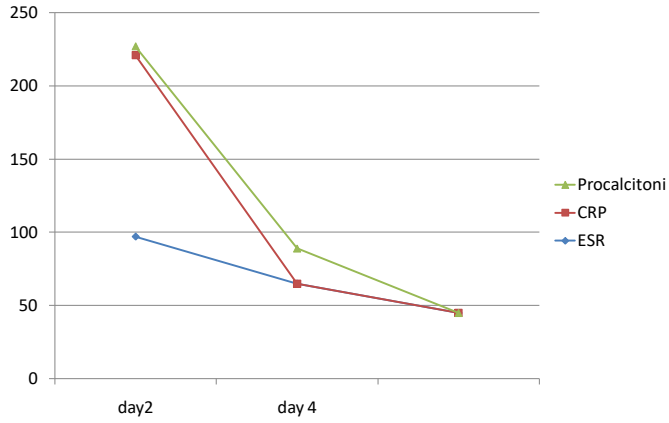


Fig 4. inflammatory markers assessed over the days of admission in the child.

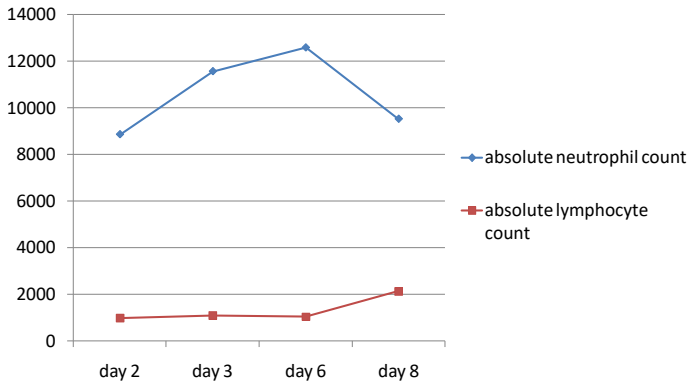


Fig 4. absolute neutrophil and absolute lymphocyte counts over the course of treatment

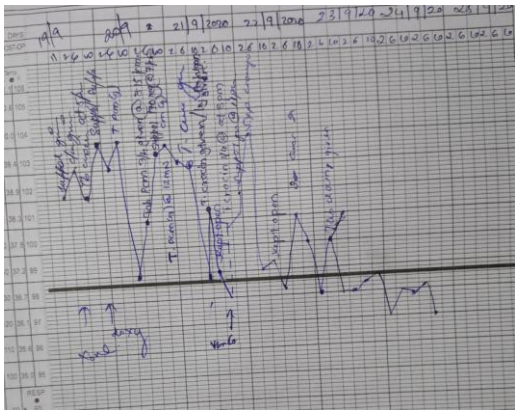

Fig 6. fever pattern in the child over the days. From high spikes, fever touched baseline with IVIG admisitration and intravenous methylprednisolone

The following tabulation is adapted from the accepted panel of investigations in PIMS TS screening.

| Blood investigations | | Microbiological investigations | |
|---|---|---|---|
| Complete blood count with complete hemogram | Mild anemia with thrombocytopenia. Leucocytosis with lymphopoenia neutrophilia. SMP | Blood culture | Negative |

| | | | |
|---|---|---|---|
| | negative. CH-WNL. | | |
| Electolytes | Transient hyponatrimia ( 127 meq/l) | Urine culture | Negative |
| ESR, CRP, procalcitonin | Elevated (fig4) | Throat and nasopharyngel swab | Not detected |
| LDH | Moderately elevated( 414 mg/dl) | ASO titre | Negative |
| LFT | Moderately elevated transaminases | Mycoplasma titre | -- |
| Blood gas with lactates | Metabolic alkalosis with normal lactates | ELISA | Negative |
| Ferritin | Markedly elevated, normalised over the days | Pneumococcal, Meningococcal, Group A strep, Staph | -- |

| | | | |
|---|---|---|---|
| | | aureus Blood PCR | |
| Triglycerides | Slightly elevated | EBV, CMV, Adenovirus, Parvovirus, Enterovirus PCR on Blood | -- |
| Troponin, cardiac markers | -- | Blood for enterotoxin/staph toxins | -- |
| Cogulation profile | Wnl | Stool culture | No growth |
| Vit D, amylase | Wnl | SARS CoV2 serology | High titre – 34.42 (>1.0 reactive) |
| Chest xray | Wnl | SARS-CoV-2 Respiratory PCR | -- |
| 2DECHO | 55% EF with global hypokinesia | | |
| D dimer, fibrinogen | -- | | |

| | | | |
|---|---|---|---|
| Abdominal USG | Wnl | | |
| ECG | QTc prolonged | | |

Endothelial damage of pulmonary vasculature, microvascular thrombosis and hemorrhage linked to extensive alveolar and interstitial inflammation is attributed to be the crux of COVID-19 vasculopathy as obtained from autopsy studies in China.

Patients are treated with intravenous immunoglobulins (IVIG) at a dose of 2 g/kg and high-dose aspirin at a dose of 12.5 mg/kg four times a day (QID). Patients with persisting fever and elevated biomarkers are treated with a second course of IVIG, followed by intravenous methylprednisolone, followed by a weaning course of oral steroids. Toziluzumab and Infliximab are reserved for those who do not respond to this treatment regime. A combination of norepinephrine and vasopressin is used to treat hypotension and shock, with adequate fluid administration. Epinephrine is used to support LV dysfunction. In view of peripheral vasodialation, milrinone is less preferred. Intravenous hydrocortisone is reserved in refractory shock correction. Thromboprophylaxis with anti platelet therapy and anti-coagulation is given based on hospital protocols. The child failed to meet criteria for Kawasaki disease or HLH/MAS as was seen in other cohorts of PIMS . The cause of such a clinical manifestation in PIMS TS is attributed to an aberrant immune response to an infectious trigger.

## IV. CONCLUSION

This report is to bring to light the varied presentation of previously asymptomatic children with SARS CoV2 infection. PIMS TS has clinical picture of hyper inflammatory syndrome with multiorgan involvement warranting multi specialty input and shows a dramatic response to steroids, immunoglobulin and other supportive measures.

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# Alternating hemiplegia of childhood: A series of genetically confirmed four cases from Southern India with review of published literature

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## Introduction:

Alternating hemiplegia of childhood (AHC) is a rare autosomal dominant genetic disorder with incidence of 1:1,000,000 births. It is characterized by transient episodes of hemiplegia/hemiparesis, quadriparesis, movement disorders, seizures and autonomic dysfunction in isolation or in combination lasting for minutes to days. Development delay is a rule and seizures are seen in 50 % of patients. It was first described in 1971 and the diagnostic criteria for this clinical syndrome were laid down in 1993, referred to as Aicardi Criteria [Table 1]. In 75 % of cases, mutation is found in ATP1A3 gene. There is a lot of variability in presentation of this syndrome and is often misdiagnosed as cerebral palsy or seizure disorder. There are few isolated case reports from India on AHC.

Here, we describe clinical features, follow-up and response to treatment of 4 genetically proven AHC patients along with a short review of literature to give

better insight into this disorder.

**Materials and Methods**

A retrospective chart review of children who were diagnosed with AHC on outpatient or inpatient basis in a tertiary-care paediatric hospital in South India was conducted. Retrieval of data was done from electronic medical record of the hospital and also patients were contacted telephonically in absence of recent follow up visit. Patients who were suspected of having AHC clinically and confirmed by genetic studies were included in the study. Details such as sociodemographic data, clinical features, neurological findings, EEG findings, imaging studies, treatment received, and outcome were collected on a proforma and results were analysed. Ethical clearance for this retrospective study was obtained from the institutional ethics committee.

**Results:**

Four children (3 girls) diagnosed with AHC were included in the study [Table II]. All had onset of plegic attacks before 18 months of age (Range: 2months-15 months) and most of these episodes were lasting for 1-3 days. Fever was reported as provoking factor in 1 patient. Typical attacks usually began during awake state, with or without deviation of eyes, sweating (Case 2) and posturing of body (3/4 cases) followed by weakness of one side or all 4 limbs. Eye deviation was mostly upward, but deviation to side and sometimes staring episodes were also noticed by family members. The weakness following the episode was reported variable from attack to attack. Patients used

to remain conscious during typical attacks and there was no increase in feeding difficulty from baseline because of these episodes. Residual weakness on the left side was seen in case 1 at the time of first evaluation. In cases 1 and 4, seizures would mostly occur as isolated events separate from the typical plegic attacks. MRI brain scans were done in all cases during 1$^{st}$ year of life and were normal. At first visit or during follow up all children were found to have some kind of movement disorders. Only case 1 has achieved independent ambulation with support and he is having significant ataxia.

Course of patients has been described in Fig 1. At 5 years of age when case 1 was seen for the first time, he was having development quotient (DQ) of 30-40 percent and motor impairment was more pronounced than cognitive delay. During subsequent visits child followed a static course. Case 2 and 3 had quite a catastrophic course during follow up with progressive regression of motor and cognitive milestones. Case 4 is recently diagnosed and on initial presentation there is significant delay.

Response of plegic episodes to Flunarizine or other add on drugs was poor in 2/4 patients based on parental questionnaire addressing decrease in frequency, severity and duration of episodes. Case 3 had single plegic attack during last one year but episodes of eye deviation were persisting. There was significant reduction in seizures frequency in case 1 after 3 anti-seizure medications but seizures in case 4 are still uncontrolled despite multiple medications.

**Discussion:**

Children with AHC often have delay in diagnosis and misdiagnosis as there is significant variability in symptomatology and overlap of multiple symptoms. In typical cases diagnosis of this disorder is mainly based on clinical symptoms and signs as per diagnostic criteria discussed earlier. All patients in our series were fulfilling these criteria. Pathophysiology of AHC remains unclear but basic science research suggests that it is complex and multifactorial with possibility of it being a channelopathy with altered neuronal network physiology.

Clinical course of AHC has been described in three phases. Phase 1 is seen during first year of life in which there are predominant eye movement abnormalities, dystonic episodes and some plegic attacks. Phase 2 starts after 1 year and lasts till 5 years of age. This phase manifests predominantly with increased frequency of plegic attacks, seizure episodes and loss of development milestones. Phase 3 is characterized by persistent development delay, fixed deficits and decreased frequency of typical attacks. Similarly in our series cases 2,3,4 are worsening with time as seen in phase 2 and case 1 is having a static course after 5 years of age.

In larger cohorts, abnormal eye movements are described as one of the earliest and commonest sign of AHC with frequency of 93-100%. In our series 2/4 cases had abnormal deviation of eyes as initial presentation at 2-3 months of age. Various eye movements described in literature are deviation,

nystagmus, jerking, unconjugated gaze and uprolling with frequency varying from study to study. Provoking factors for typical plegic attacks include excitement, fatigue, hot weather, fever in 75% patients. In our series, only 1 patient had fever as provoking factor for an episode. All patients in our series had recurrent attacks of hemiparesis with shift of side and quadriparesis attacks lasting upto 72 hours while different cohorts describe longer episodes lasting for upto 2-3 weeks.

Most of the published series describe near normal to severe motor and cognitive delay in AHC depending upon genotype and paralleling with severity of other manifestations. Similarly, in our series all children are having severe to profound development delay and in case 1 motor impairment was more as compared to cognitive impairment. It is still not clear whether motor delay is a primary feature of the syndrome or it is secondary to other manifestations.Two children are affected with seizures in our series and in AHC they are described to be focal or generalized in almost 50 % of patients.

To differentiate seizures from isolated tonic attacks or abnormal eye movements may be difficult so one should try to look for recurrent episodic weakness and level of consciousness, which is usually but not always preserved during the plegic episodes in AHC. Abnormal eye movements are as such not considered seizures. Electro-clinical correlation with definitive interictal spike-and-wave and video EEG are other helpful tools for differentiation.

Movement disorders such as dystonia, choreoathetosis and ataxia were present in all our patients either singly or in combination and likewise, they are described in more than 2/3$^{rd}$ of the patients in published literature. Differential diagnosis of AHC should include hemiplegic migraine, epilepsy, moya-moya disease, pyruvate dehydrogenase deficiency, mitochondrial disorders, neurotransmitter disorders, glucose transporter defects, and these can be ruled out with careful clinical evaluation and ancillary investigations such as appropriate metabolic tests and brain MRI. Brain MRI is normal in AHC as was in our series.

Most common genetic mutation in ATP1A3gene in large cohorts are p.Asp801Asn, p.Glu815Lys and p.Gly947Arg and several studies have found p.Glu815Lys mutation with severe disease phenotypes. Most common pathogenic variant in this series was p.Asp814Asn in 2 cases and these were more severe to p.Gly960Arg, he is ambulatory and p.Asp801Asn variant with intermediate severity, as she walks with support. Case 3 and case 4 having similar mutation but different phenotype.

Treatment strategies include treatment of acute episodes (paroxysmal epileptic or non-epileptic), preventive medication to decrease the frequency, duration and severity of episodes along with multidisciplinary care for neurodisabilities. Duke AHC foundation have provided detailed management guidelines for acute management. Acute management focuses on avoiding modifiable triggers and induction of sleep with buccal or nasal midazolam and rectal diazepam. In preventive therapy flunarizine is most widely used agent

with data available mostly from case series and few controlled trials. In different studies, it has been found effective in 50-80% of patients in decreasing the frequency and duration of episodes by 30-50 %. Also, there is no variation in treatment response in different genetic mutations. None of our patients responded well to treatment with flunarizine. Other agents like topiramate, ketogenic diet, triheptanoin, steroid, amantadine, aripiprazole, oral ATP, coenzyme Q, acetazolamide, vagus nerve stimulator have been tried with various rates of success. For treatment of epilepsy in AHC there are no trials for assessing superiority of one drug over another. Topiramate is usually first preferred agent as it also improves plegic attacks.

We did this as a retrospective analysis, so there are some limitations as data was collected through questionnaire and record review. There is potential for record bias and inaccurate reporting in such analysis despite all patients being seen by a single paediatric neurologist during the whole time. Correlation of findings, to use objective scales for treatment effects, a prospective study is indeed required.

**Conclusion:**

Although AHC is a rare disorder, it can be diagnosed on the basis of accurate history and clinical examination. This disorder is predominantly sporadic and till now there is no effective treatment but early diagnosis should be done so as to avoid unindicated, potentially toxic medications and to help prognostication.

Fig 1: Clinical course of AHC patients

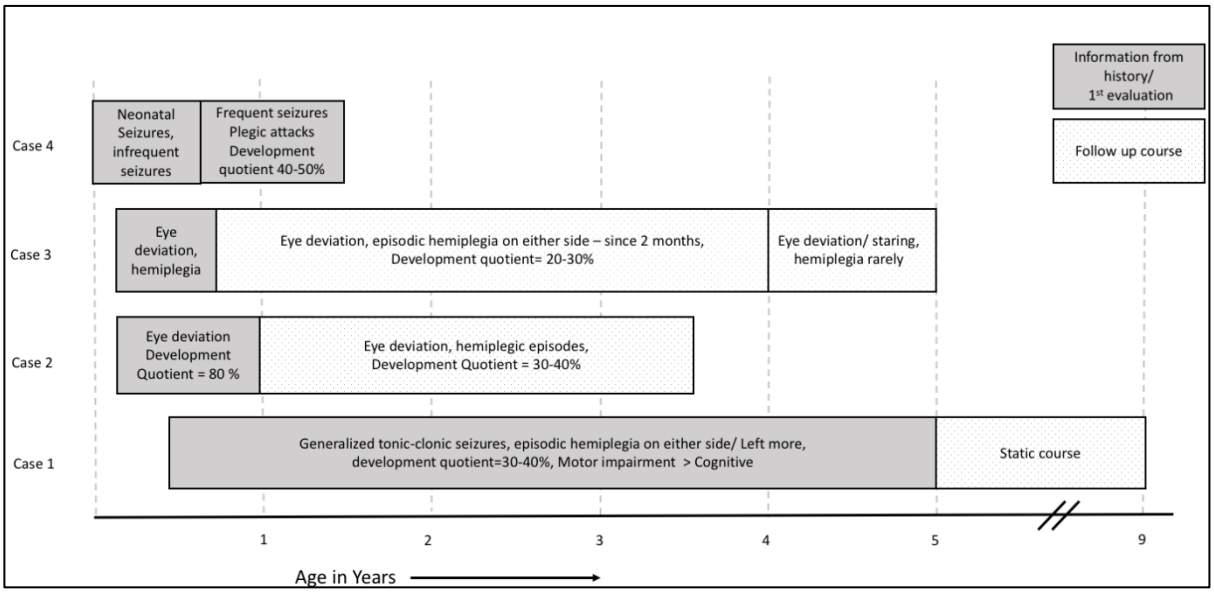


Table I: Diagnostic criteria for Classical AHC [1]

| | |
|---|---|
| 1 | Onset of symptoms before 18 months of age |
| 2 | Repeated attacks of hemiplegia involving either side of body |
| 3 | Other paroxysmal disturbances including tonic or dystonic spells, oculomotor abnormalities and autonomic phenomena during bouts in isolation |
| 4 | Episodes of bilateral hemiplegia or quadriplegia as generalization of a hemiplegic episodes or bilateral from beginning |
| 5 | Immediate disappearance of symptoms upon sleeping which may later resume after walking |
| 6 | Evidence of development delay and neurological abnormalities including choreoathetosis, dystonia or ataxia |

Table II: Characteristics of AHC patients

| **Characteristics** | **Case 1** | **Case 2** | **Case 3** | **Case 4** |
|---|---|---|---|---|
| Age at 1st Symptoms Onset | 6 months | 3 months | 2 months | 9 days of life |
| Age at 1st Evaluation | 5 years | 11 months | 2 months | 1.2 years |
| Present Age | 9 Years | 3 years 4 Months | 5 Years | 1.5 years |
| Sex | Male | Female | Female | Female |
| Family History- Consanguinity/ Similar history / Migraine | No | No | No | No |
| Initial Presenting Symptom | Generalized seizures, focal seizures right side with impaired consciousness | Eye deviation | Eye deviation | Neonatal right clonic seizures |
| Type of Attacks | Left Hemiplegic, sometimes double Hemiplegic, upward gaze | Eye deviation, dystonia, hemiplegic left >right | Eye deviation, hemiplegic on either side | Hemiplegic on either side, Double Hemiplegic |
| Onset of Hemiplegic, Double Hemiplegic Attacks | 8 months | 15 months | 2-3 months | 8 months |
| Frequency of Attacks/ Month | 2-3 | 3-4 | 1-2 | 1-3 |
| Length of Attack | 1-2 days | < 24 hours | 1-2 days | 2-3 days |
| Seizures | Present | Not present | Not present | Present |
| Autonomic Disturbances | None | Sweating | None | None |
| Provoking Factors | None | None | Fever | None |
| Relieving | Sleep | Sleep | Sleep | Sleep |

| | | | | |
|---|---|---|---|---|
| Factors | | | | |
| **Examination (Present)** | | | | |
| Head Circumference | Normal | Microcephaly | Normal | Normal |
| Tone | Increased | Increased | Decreased | Decreased |
| Reflexes | Brisk | Brisk | Brisk | Brisk |
| Residual Hemiparesis | Left sided | No | No | No |
| Orofacial Dyskinesia | Yes | Yes | Yes | No |
| Dystonia | Present | Absent | Present | Present |
| Choreo-Athetosis | Present | Absent | Absent | Absent |
| Ataxia | Present | Absent | - | - |
| Ambulation | Present | Present with support | Not present | Not present |
| **Investigations** | | | | |
| EEG | Normal | Right temporal slowing during episode of weakness | Normal | Left frontal discharges |
| MRI Brain | Normal | Normal | Normal | Normal |
| Genetic Analysis ATP1A3 gene -Exon/ Nucleotide Change/ Protein Change | 21/ c.2878G>G/A/ p.Gly960Arg | 17/ c.2401G>A/ p.Asp801Asn | 17/ c.2440G>A/ p.Asp814Asn | 17/ c.2440G>A/ p.Asp814Asn |
| **Treatment** | | | | |
| Anti-Seizures Drugs/ Response to treatment | Topiramate, Valprote, Clobazam/ Improved | Initially treated as seizures | Initially treated as seizures | Valproate, Levetiracetam, Clobazam, carbamazepine / Poor |
| Treatment for AHC attacks/ Response to treatment | Flunarizine, Aripiprazole, phenargan, topiramate/ Poor | Flunarizine, Aripiprazole, phenargan, topiramate/ Poor | Flunarizine, Topiramate for last 1 year only staring episodes, no hemiplegic episode | Flunarizine/- |

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# Mental Health of the Adolescent Client

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Adolescence is a phase of rapid bio-psycho-social changes. It is a period of attaining puberty, moving away from the family towards peers, a bid for independence, filled with identity crises, risk taking behaviors and emotional upheavals. Coping with these changes may be challenging and stressful for the adolescents. Stress in adolescents is undoubtedly on the rise either singly or in combination with health issues.

As per WHO the key facts are:

1) One in six people are aged between 10 to 19 years
2) Mental health conditions account for 16% of the global burden of disease in 10-19 years age group.
3) Half of all mental health conditions start by 14 years of age but most cases are undetected and untreated
4) Globally depression is one of the leading causes of illness and disability among adolescents.
5) Suicide is the third leading cause of death in 15-19 years age group.

Factors that contribute to stress during adolescence includes a desire for greater autonomy, peer pressure, exploration of sexual identity, media influences, parenting, socioeconomic problems, quality of home life and sexual violence. All this has a detrimental effect on the physical and mental health of the teen.

It is observed that lately there has been a tremendous rise in psychological problems in adolescents probably due to increased parental and personal expectations, poor coping mechanisms as teens are now having a low tolerance limit.

Mental health illness like depression and anxiety disorder can lead to significant functional impairment .The paediatrician should be trained to identify the symptoms and signs of mental illness and refer a psychiatrist or a psychologist for further management.

**Depression** is characterized by persistent sadness anhedonia (loss of interest), boredom, irritability, low energy, functional impairment, relative unresponsiveness to pleasurable activities. The adolescent will have insomnia, loss of appetite and loss of weight .Based on ICD 10 criteria these symptoms should be persistent for a minimum period of 2 weeks. The depression can be classified as mild, moderate and severe. In severe depression thoughts of ending life would be prominent. The teen may also have psychotic symptoms like hallucinations and delusions.

One can diagnose depression by taking a detailed history from the teen & parents and assessing the mental state of the teen by direct observation. One can also see some comorbidities like anxiety, ADHD, substance use and conduct disorder

**Anxiety disorders in teens**:

1. Generalized anxiety disorder is very common. They tend to worry for everything. Excessive anxiety and worry should occur half of the days over a period of 6 months to diagnose this condition based on ICD 10 criteria. The symptoms associated are restlessness, tiredness, poor concentration irritability, lack of sleep and muscle tension.

2. Social Anxiety: This occurs persistently in all social situations mainly in new situations and in a crowded environment. The symptoms should be present for a minimum duration of 4 weeks. It affects the self-confidence and they get embarrassed in social situations.

3. Panic Disorder: This is associated with recurrent episodes of panic attacks. Symptoms usually start abruptly with the fear of discomfort characterized by intense fear, increased heart rate, shortness of breath, sweating, choking sensation etc. There is no physical cause for the same.

4. Separation Anxiety Disorder: Reflects anxiety on separation from parent or caregiver and causes functional impairment by leading to avoidance.

One can diagnose anxiety by taking a detailed history from the teen and parents and by assessing the mental state of the child by direct observation.

**Emotional Disorders:** are commonly seen in adolescence. They experience excessive irritability, frustration or anger, rapid mood changes and emotional outbursts in addition to depression and anxiety. Globally depression is 4$^{th}$ leading cause of illness and disability among adolescents aged 15 to 19 years and anxiety is the 9$^{th}$ leading cause.

These emotional disorders can profoundly affect areas like school work and attendance. Severe depression carries the risk of suicide.

**Childhood Behavioral disorders**: These are the second leading cause of disease burden in young adolescent aged 10 - 14 years. This includes ADHD, conduct disorder or excessive activity not appropriate for age. It affects the education and may result in criminal behavior.

Eating Disorder like anorexia nervosa, bulimia nervosa and binge eating disorder are characterized by harmful eating behaviors. These disorders can coexist with depression, anxiety or substance abuse.

Management:

Moderate to severely depressed children should be referred to child psychiatrist / psychologist. The treatment is a combination of pharmacotherapy and psychotherapy.

Mild depression is generally treated with regular psychotherapy whereas combination of cognitive behavioral therapy, interpersonal therapy and pharmacotherapy along with family therapy helps in cases of moderate to severe depression.

Pharmacotherapy includes SSRI's which are the drugs of choice. The adolescent needs close monitoring for suicidal ideation and behavior. Fluoxetine is started at 5 to 10 mg and gradually increased by 10 to 20 mg to max 60 mg. Sertaline, citalopram and Escitalopram are other drugs. The medication is to be continued for 6 months after recovering from depression if it is the first episode.

In case of anxiety all severe cases are to be referred to a Psychiatrist / Psychologist. Mild cases recover with Psychotherapy. SSRI in a higher dose as compared to depression needs to be given. In addition Cognitive behavioral therapy, graded exposure and systematic desensitization (10 – 12 sessions) with focus on relapse prevention is needed.

In Summary:

1. Mental disorder and mental health problems seem to have increased considerably among adolescents in the past 20-30 years.
2. The recognition, evaluation and treatment of depression and related suicidal or self-harming behaviors are the highest priorities in adolescent mental health.

3. Variations of mood and temporary deviant behavior are part of the normal adolescent process.
4. By early recognition of signs and symptoms and appropriate referral the paediatrician can help the adolescent and the family to deal with mental health problems.

# ACTIVITIES And ACHIEVEMENTS

1) **World Breast feeding week 2020** –"Support Breastfeeding for a healthier planet"

A message on Breastfeeding put out to the general public on social media by the senior and junior Paediatricians of Goa IAP State Chapter in English and in Konkani. The links for the same are given below.

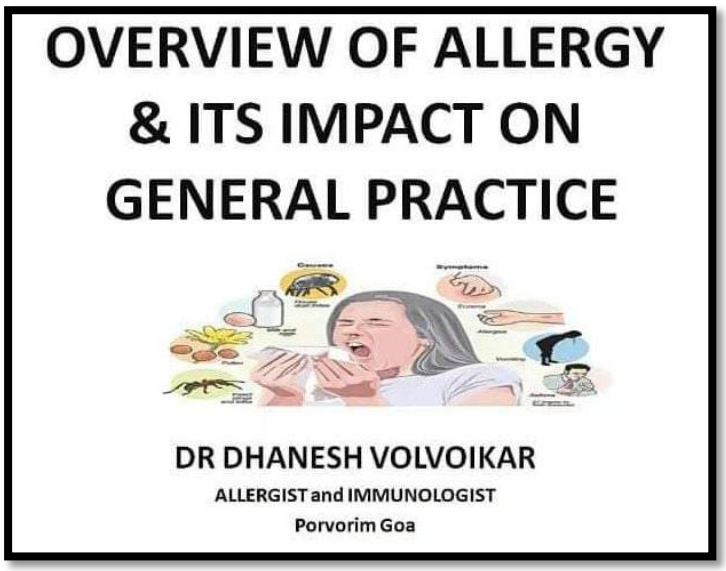
https://youtu.be/dxrQcg8gg-c

https://youtu.be/ubDqSpez6JA

2 ) IAP Goa State Branch organised a Webinar on 2/8/2020 at 11.00 am.

Topic : Allergy issues in Paediatric Practice

The Panelists included Prof. Dr Nagaraju and Dr Dhanesh Volvoikar. Dr Nagaraju is a great teacher and mentor and is better known as the 'Father of Paediatric Allergy' in India. The moderator for the session was Dr Harshad Kamat.





The recorded link of the programme is https://youtu.be/T4-djgQmcYc

3) State level online programme on 'ALLERGY' was held on 26th July 2020 , organised by IMA Bardez. Dr Dhanesh Volvoikar addressed almost 200 doctors from different specialities and those in general practice at different locations in Goa. The You tube link of the talk is given below.

https://youtu.be/64X-wogQL9Y

4) Dr Dhanesh Volvoikar was panellist or the Panel discussion on 'Allergic disorders of the skin hosted on dIAP platform by Allergy Chapter of IAP on September 28th 2020 from 2pm- 3.30 pm.

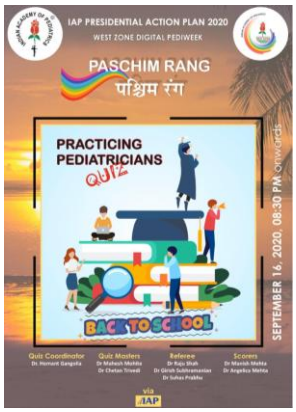

5) Dr Dhanesh Volvoikar was faculty for Panel discussion on "Immunotherapy" at the National Paediatric Allergy Conference of IAP allergy chapter held on 6/12/2020


6) Goa IAP participation at the West Zone Digital Pediweek Conference held from 15th- 20th September 2020.

Scientific Sessions

- Dr Ryan Dias was the moderator/expert for the Panel discussion on 'Mimics in Neonatal Sepsis' in Hall 2 on 17/9/20. The panellists included Dr Piyush Ranbhor and Dr Jaju.
- Dr Chetna Khemani was chairperson for 2 panel discussions held on 17/9/20
  a) Fluid challenges in neonatology
  b) Stress Management in Paediatric practice
- Dr Sumant Prabhudesai was a panellist for panel discussion on 'Mutisystem Inflammatory Syndrome in Children-What we know?' held on 18/9/20
- Dr Lorraine D'Sa was a panellist for panel discussion on 'Interesting cases in Hemato- Oncology' held on 19/9/20
- Dr Harshad Kamat was the moderator/expert for the panel discussion on the topic ' Three years old, Recurrent wheezer' held on 19/9/20
- Dr Arvind D'Almeida was a part of the pnel discussion on 'Pedicolegal Issues : Difficult path Ahead' held on 19/9/20

Our members also actively participated in the entertainment programmes organised for the conference




**Practicing Paediatricians QUIZ: 16th September 2020**

Our team consisted of Dr Shivanand Gauns, Dr Harshad Kamat, Dr Swapnil Usgaonkar and Dr Sumant Prabhudesai.


**Cultural Programme**

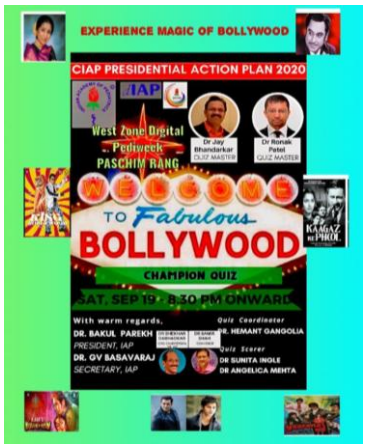
Held on 17th September 2020. Was organised by the Goa Association of Paediatrics.

The link for those that missed it is below

https://drive.google.com/file/d/1udcyJwq7SdNg6G_fFSibTivXFfExLU08/view?usp=drivesdk

**Fabulous Bollywood Quiz**

Our team consisted of Dr Priyanka Amonkar, Dr Poonam Sambhaji, Dr Susheela Kamat and Dr Suvarna Naik.




7) Online CME ON Covid related - Multisystem Inflammatory Syndrome (MIS-C) in Children and Meningococcal Vaccine update was organised by Goa IAP on 1/11/2020 between 11:00 am to 13:00 pm

The topics covered include

- Case presentation on MISC-C by Dr Isha Bhagat and Dr Sumant Prabhudesai.
- Expert Panel discussion on MIS-C ( Prof. Dr Mimi Silveira, Dr Harshad Kamat, Dr Isha Bhagat and Dr Sumant Prabhudesai.
- Vaccine deliberation in Covid era and Meningococcal Vaccine update

8) Dr Priyanka Amonkar conducted online talks on Constipation in Paediatric Patients, Differential Diagnosis of Upper Respiratory Infections, Management of Infantile Colic and Management of Fussy eater.

Dr Priyanka was also the moderator or the fever module 98.7FM held by central IAP.

9) SAANS TRAINING

Dr Anuradha Ghanekar and Dr Celine Andrade conducted the training for 35 ANM's from north and south Goa on the SAANS ( Social Awareness and Action to Neutralise Pneumonia Successfully) Programme. The training consisted on assessment and classification of pneumonias in children 2months-5 years, early recognition of danger signs and possible serious bacterial infection, case studies and skill stations.

Session on Management of Childhood Pneumonia by Dr Anuradha Ghanekar

Childhood Pneumonia - Case Studies

Skill station – 1 - Calculating Amoxicillin and Gentamicin dose, method of administration and duration

Skill station - 2 - Respiratory rate counting

Session on Management of Childhood Pneumonia by Dr Celine Andrade

Skill station – 1 - Calculating Amoxicillin and Gentamicin dose, method of administration and duration

10) Dr Vibha Parsekar presented a paper on 'Knowledge of Attention Deficit Hyperactive Disorder(ADHD) amongst Primary School Teachers in Goverment Aided Primary Schools in Bardez Taluka, North Goa at the National Developmental Pediatric Conference held on 30/12/20