IAP GOA E-Bulletin

BULLETIN *April 2017*

Activities from

January 2017 to March 2017

Issue 1

GOA STATE CHAPTER

For Private Circulation

Table of Contents:

From The Desk of President IAP Goa

- Dr. Harivallabh Pai

Dear Colleagues,
It is my privilege and pleasure to pen these few words at the release of the *First issue* of the E- bulletin during our tenure of two years 2017-2018.
In this journey of ours, I would expect *Free and Open co - operation and Guidance* from all of you to Encourage us to continue the good work done by our predecessors, and keep the IAP flag flying so that we feel proud to be a part of this Esteemed Organization.

We have already had a couple of CIAP modules till now. I am overwhelmed by the support and attendance at these CMEs. We shall try to organize more such modules to refresh our knowledge and give our members an academic feast throughout the year.

I am sure you will like and appreciate this issue, where lot of efforts have been put in by Dr Siddhi Nevreker and her team.
Looking forward to meet you again through this medium...

Dr H P Pai
President
IAP Goa chapter

Editors Writes.....

Dear All,

April is here!!! May this Spring bring you loads of Happiness and Colour to your Life!!!

It gives me immense pleasure to bring to you our **First E-bulletin** for this tenure of 2017-2018.

Let me be frank in that my writing skills sometimes do lack finesse and I do make blunders inspite of proof reading. Nevertheless our team is efficiently guided by Dr. Swapnil Usgaonkar and of course our senior mentors Dr. Harivallabh Pai, Dr. Kalpana Vaitheeswaran and Dr. Santosh Usgaonkar. I am thankful to each one of you who have contributed to this e-bulletin. I must make a special mention of Dr. Laxmi Gaunekar, Dr. Mimi Silveira, and Dr. Shivanand Gauns for sparing their valuable time to make our bulletin an interesting one by actively participating in it I specially thank Dr. Purnima Usgaonkar for helping me out with the cover story.
I would also like to **Thanks our sponsors Valence Pharma, Eurrosia Life Sciences and H & H Pharmaceutica LLP.**

In our bulletins from here on, we are making an attempt to get to know our Seniors and Colleagues in a better way; as in knowing them at a personal level. Such that it'll make us all bond together as one team.

The limelight of our issue is a new concept of **Cover story of Our Mentors**, those who have always inspired us and guided us and worked for our association all through these years.

We shall be enlightening you with **Recent Updates**, our activities done at rural level, CMEs held and the sorts. Another feature is acknowledging and appreciating the **LAURELS** of our Colleagues, who inspite of being a busy Pediatricians, also spare time for his or her **Passion and Rocks at it!!**

A feature newly introduced is **KNOW YOUR MEMBER**, a small gesture to make our dear association members speak their heart out and make us know a bit more about them other than what we have always known them as.
Medical Quiz is a small trial to stimulate our grey cells, thereby helping you'll think out of the box.
Mind you!! There are **prizes for the winners too.**

I apologize if there are mistakes in the issue. If in case there are, they are purely unintentional.

Horrifying events have occurred with our Residents, Consultants and our Colleagues in Private Practice too, which have really shaken us. **'VIOLENCE AGAINST DOCTORS'** is on the rise. It a topic of major concern and but Thanks to our efficient team of Doctors, way back in 2004 an **Anti Violence Bill was proposed by State IMA and was passed in 2013**. Further on, the Goa Assembly has approved it and it has come up in the Government Gazette, so now it's a Law and our Goa Police are well aware. It's just that we need to file a complaint of the same in case such a situation arises and action can be taken immediate. The **PDF file is available on the site**. So in a way we are protected. Thanks to efforts taken by our previous office bearers from IMA. But definitely, it's a tricky situation when it comes to personally facing such an abuse and dealing with it effectively. On a lighter note, I feel we should all get trained in Martial Arts for our own very safety. Jokes apart, It's a serious topic and I am sure our concerned authorities all over India are taking proper steps to make the Work Place Conducive enough for the Doctors so as to provide their services efficiently to the Patients. **All the Very Best To Them All!!!**

Hope you enjoy the bulletin and would be enthusiastically waiting for the next issue.
Please do provide us a feedback.
Happy reading!!

Regards,
Dr. Siddhi Nevrekar, Dr. Vinda Arleker, Dr. Anagha Dubhashi

Life Story of A Legend: Dr. Laxmi N.N. Gaunekar

Without struggle, There is no Progress… It's a saying many people believe in and take all challenges in their stride. One such lovely and inspiring Lady is our Dear Madam **Dr. Laxmi Narsinha Naik Gaunekar Nee Dr. Sunita Prataprao Sardessai**
Born on **9th December 1943 at Panaji**, to **Mr. Apaji Prataprao Sardessai** and **Mrs. Sushila Prataprao Sardessai**, Dr. Gaunekar has always been a strong willed and determined person. She lost her father at an early age of 6 years.
She along with her 4 siblings was brought up in a joint family, wherein her aunt and uncle would take care of them like their own kids along with their own kids. Her mother who was ailing with Rheumatic fever, loved crochet and her work would be kept for sale.
Definitely the childhood was full of anxiety and hardships but there were wonderful memories and events too which help her fight all odds to be what she is today.

The key figure in her educational progress has been her Uncle, **Mr. Shivaji Prataprao Sardessai** , who supported and encouraged her at every step, be it basic primary education or further on to be a Renowned Pediatrician.
Madam shares a special bond with her uncle & aunt and is full of emotions while narrating the same.
It's well obvious that Madam was a topper always, I am certain no one will even doubt it.
Academic journey began in Goa and progressed to become DCH, MD Paediatrics from CMC, Vellore.
Her primary education was done in Marathi medium at Mustifund School, Panaji.
Later, further education till VII Standard was done at Kanyashala. She answered her SSC at Mumbai, in English medium.
In 1961, she completed her First year science at Miraj and joined Dhempe College, Panaji for Interscience in 1962.
Madam, joined Goa Medical College in 1963, passed MBBS in 1967 and after completing 1 year of Internship, shifted to Vellore for House-manship (AKA Short post) in Paediatrics.
Completed DCH at Vellore and thereafter joined MD in the same college, passed the exam with flying colours in 1974 and joined her Alma Mater as a Lecturer in 1974.

Beautiful Nostalgic Vellore memories

Thereon, she has been serving and catering to the needs of ailing kids with full dedication, love and care.
She has mentored several residents and has been a good Teacher who ensured Disciplined, Vigilant and Perfect order at work and in Academics at GMC.
It was under her that Neonatal Care Unit was established in 1975 at Goa Medical College, thereby reducing the Infant Mortality Rate to a large extent.
Also under her guidance and care mortality due to Tetanus was reduced drastically.
Many of us who have been trained by her will surely agree that Dr. Gaunekar was very methodical and apt in her approach and was professional at work. It's a quality we all should want to imbibe in us such that we could be like her.
As said earlier, struggle and challenges have been a part of her life, which she gracefully accepted and faced every situation with a smile; be it the weak health of her mother or a constant stressful health issues of her sibling, especially during her MBBS days. She smiles as she narrates small incidents from back then but the smile is that of a winner, who has passed that difficult phase without letting it affect her professional career, and yet managed to be strong, calm and composed otherwise too

In 1979, Madam got married to **Mr. Narsinha Naik Gaunekar**, a Renowned Chartered Account, who supported Madam all throughout her career. It was cause of his encouragement that Madam decided to start her own Clinic and Hospital in Panaji in 1985(**Naguendra Bal Shushrushelya**). Later she shifted to new premises at St.Inez where she still practices.

At the Inauguration of New Hospital Premises at St. Inez

She held the post of Assisstant professor and Head of department of Paediatrics when she left GMC to take a new path in her career. She was and is definitely a boon to Panaji people, and people would come to seek her consultation from areas outside Goa too.

Many people still narrate how madam has diagnosed sickness in their kids and treated them effectively and how they trust her totally. It's like how you say in Hindi, **'Bas Naam Hi Kafi hai!!!'**

Due to small, special gestures like giving a small gift to the kids after examining them, kids adored her and would be addressed by very lovely names, one such name I found quite interesting was **'Dotoramami'**. This specific sibling duo who called her so, would love to go to her clinic even though they were scared to get examined and getting injected. They shared with me some few fond memories of Madam. As in, she allowed them once to examine her using the stethoscope and let them hear her heart beat. The girl said, "I was so thrilled to hear the heart beat and was in love with Madam because she let me do it".

At her clinic, feeding sweet to the child after examining him

Giving Health Talk at a Social Gathering

Happy "Patientlets" waiting for their turn!!

Madam in an affectionate manner says, **"This was all possible because my husband supported me in this venture**" It was a very positive gesture on Mr. Gaunekar's part of allowing her to work by making things conducive for her to do so; importantly the home front management and so also Hospital administrative work was done by arranging help and efficient personnel who would aid Madam, making it easy for her to look after her Clinic and Hospital with full concentration. Madam being hardworking and basically being homely in nature could well manage her household chores and profession simultaneously. Not to forget, she gave time for her hobbies too, like crochet, sewing dresses for kids, gardening and many some.

She smiles wide and pleasant, when she talks about the hospital saying, "I love my work and enjoyed every bit of the working hours". She also adds," My hobbies were a sort of Stress reliever".

Beautiful time spent with family and special friends...Special Moments....

Being a kind hearted human being, she has been generous to provide her services to the needy and general public by being a part of social activities like camps, giving health talks, being resource person at conferences, being in advisory board for IAP Goa Chapter and also as a part of the team created to reduce the IMR in Goa. She has been felicitated with 'Lifetime Achievement Award' by IAP Goa Chapter in the year 2011 and also by IMA Goa State in 2004.

She is one of the founder members of IAP Goa State.

Even after achieving so much, and being exposed to so many hardships she is very humble and always ready to help others if need be.

Some at leisure time with friends... former residents and well wishers

A loving moment with her Husband, Mr. Narsinha Naik Gaunekar

A sweet picture of her son Santosh and Daughter in law Pritam

With passing years, as new responsibilities dawned, she altered her work and home management giving importance and keeping her focus on her son **Mr. Santosh Gaunekar**. He after graduation joined his father at Naik Gaunekar & Co and also owns a Stationary shop at Panaji
In 2011, Madam got promoted to the post of mother in law, with the arrival of a very talented and loving daughter in law**, Mrs. Pritam Gaunekar**. She too helps her father in law in the office.
Madam says she is blessed to have a Daughter in law like her.

Arrival of **Chirayu**, her loving grandson has made her life super happy and filled with lots of activities. She portrayed varied emotions while talking about her little champ. She says," It's a pleasure to look after my little darling and I enjoy this role of being a grandmother"
She says, "She would want to spend time with her family and relax a bit", so she has restricted herself to the clinic since the past 2 years. She is attempting to spend time at home and utilizing her free time to carry on with her hobbies.



With her darling grandson, Chirayu

Seriously, after talking to her, you always feel nothing is Impossible; you just need to try.
When asked what's her advice for today's Paediatricians she says **"Today's young blood needs to be more patient and observant. They need to lay emphasis on Clinical findings whilst making diagnosis, rather than depending on Investigations. Of course, they should take the help of the Diagnostic tests but shouldn't blindly rely on them. Clinical findings and History lay a strong basis while making a diagnosis"**
Truly it's a privilege to know such a Lady of High Spirits personally.
Wishing Madam a very Healthy and Happy Life!!!


'Mothers today have no faith in home remedies'

One of Goa's best known paediatricians DR LAXMI GAUNEKAR has spent her life nurturing the citizens of tomorrow

A Snap shot of her interview published in Viva Goa

CASE REPORT: AN INFANT PRESENTING WITH A TET SPELL AND HYPOCACEMIC SEIZURES AS A MANIFESTATION OF DIGEORGE SYNDROME

Authors: Dr.Abhijit Shanbhag, Dr. Sakthivel R, Dr. Lorraine De Sa

DEPARTMENT OF PEDIATRICS, GOA MEDICAL COLLEGE, GOA

ABSTRACT:

We report a 26 day old infant who presented with a Tet spell and Hypocalcaemia seizures with echocardiography suggestive of Pentalogy of Fallot. A hint to DiGeorge syndrome was in view of the cardiac defects and the Hypocalcaemia attributed to the absent thymus. Genetic analysis was done which confirmed the diagnosis of DiGeorge syndrome

CASE:

A 26 day old infant presented to our casualty with cyanosis associated with crying and respiratory distress. Infant was considered to be having a Tet spell and the infant was stabilized.

Echo revealed to have Pentalogy of Fallot, Large Mal-alignment, Sub aortic VSD with Bidirectional shunt, Overriding of aorta > 50%, Pulmonary Atresia, 3mm PDA with Left to Right shunt, 7mm OS ASD with predominantly Left to Right shunt, Pulmonary artery branches confluent and hypo-plastic (left pulmonary artery 4mm and right pulmonary artery 4mm) and mild aortic regurgitation. Child found to have episodes of seizures at the day of admission.

Laboratory investigations revealed the child to have hypocalcaemia. Serum calcium level was 5.6mg/dl and ionized calcium was 0.9mmol/l. Serum phosphorous was 5.4mg/dl and serum magnesium 1.2mg/dl.

There was absent thymus on Chest X- ray which was confirmed later by Chest Ultrasound.

The infant was initially started on IV 10% Calcium Gluconate infusions and later followed with oral calcium supplements along with calcitriol supplements of 30000 IU every 15 days. Repeat laboratory investigations revealed normalization of serum calcium levels.

Complete Hemogram of the infant showed a Total count of 19500 with a Differential Count showing 79 Neutrophils, 1Lymphocyte and 10 Basophils along with target cells and few Macrocytes.

However CD4 absolute count was 1195cells/ul with a CD4 percent of 44.19.

The infant was started on Cotrimoxazole and oral Fluconazole prophylaxis to prevent against opportunistic bacterial and fungal infections. However, the infant had one episode of bronchopneumonia with clinical sepsis during hospital stay. Blood BACTEC showed growth of MRSA species which was treated with appropriate antibiotics. Renal USG showed a normal right kidney and an absent left kidney. However the infant had no complaints as regards to the urinary system and had normal renal function tests.

Genetic analysis of the child was sent at Centre for DNA Fingerprinting and Diagnostics, Hyderabad.

DNA was isolated from Peripheral blood and was subjected to PCR using Salsa Multiplex Ligation Dependent Probe Amplification (MLPA) kit P064-C1 MR-1 to detect aberrant copy numbers on several chromosomal regions. Report came positive for Di George syndrome.

DISCUSSION:

DiGeorge syndrome is a well-known genetic disorder with a prevalence of 1:4000 live births. It was initially described by Angelo DiGeorge, a physician and a pediatric endocrinologist in 1968. DiGeorge is a developmental defect caused by a Micro-deletion of chromosome of 22q11.2; also known as Velvocardiofacial syndrome or CATCH 22 (C- Congenital Heart Disease, A-Abnormal Faces, T- Thymus Hypoplasia, C-Cleft palate, H- Hypocalcaemia due to Hypoparathyroidism). Autoimmune disorders, Renal disorders, Skeletal defects, Psychiatric and Behavioral abnormalities are associated with this syndrome . Variable hypoplasia of the thymus and parathyroid glands defines partial DiGeorge syndrome which is more frequent than total aplasia. Aplasia is present in ≤ 1% of patients with DiGeorge syndrome and defines Complete DiGeorge syndrome.

.....Continued

DiDeorge is an autosomal dominant syndrome but majority of patients have de novo mutations caused mainly by Micro-deletions of chromosome 22q11.2 which leads to developmental disorders such as failure of development of the pharyngeal pouch system. (5,6). These developmental disorders are the main cause of the classic features and clinical presentation of DiGeorge syndrome. (3,4)

Congenital Cono-truncal cardiac defects that involve trunco-aortic sac can present in 70% patients with DiGeorge syndrome. The most common cardiac anomalies are interrupted aortic arch, tetralogy of fallot, atrial septal defects and ventral septal defects. (7)

Hypocalcaemia is due to hypoparathyroidism and is present in about 60% of patients. Hypocalcaemia is a strong predictor of DiGeorge syndrome if it is associated with other clinical features such as cardiac defect and immunodeficiency. Hypocalcaemia usually presents as seizures in the neonatal period and a muscle cramps in the adulthood (8)

Immunodeficiency is rare in adults but it may present in up to 70% to 80% of patients with DiGeorge syndrome. Immunodeficiency occurs because of the low T cell count due to thymus hypoplasia. The function of T cells is usually preserved. Patients with immunodeficiency may have recurrent viral chest infections, systemic fungal infections and frequent bacterial infections.

The characteristic facial features of DiGeorge include Long face, Narrow Palpebral fissures, Broad Nasal bridge, Micrognathia and Asymmetrical crying face.

Other conditions that can be associated with DiGeorge are Atopic Disorders (Asthma and Eczema), Rheumatoid Arthritis, Autoimmune Thyroiditis and renal abnormalities such as Multicystic Kidney Disease and Vesico-Ureteric reflux.

REFERENCES:

1) Devriendt K, Fryns JP, Mortier G, van Thienen MN, Keymolen K. The annual incidence of DiGeorge/velocardiofacial syndrome. J Med Genet 1998;35:789-790.

2) Driscoll AD, Sullivan EK. DiGeorge syndrome; A chromosome 22q11.2 deletion syndrome. In Primary immunodeficiency diseases. 2nd edition. Oxford Uni. Press 2007;485-495

3) Butts SC. The facial phenotype of the velo-cardio-facial syndrome. Int J Pediatr Otorhinolaryngol 2009;73:343-350.

4) Cuneo BF. 22q11.2 deletion syndrome: DiGeorge, velocardiofacial, and conotruncal anomaly face syndromes. Current Pediatrics 2001;13:465-472.

5) H. B Robinsons, DiGeorge or the III-IV pharyngeal pouch syndrome : pathology and a theory of pathogenesis, 'Perspectives in Pediatric Pathology, vol 2, pp. 173-206,1975

6) Kirsten Molsted, Maria Boers and Inger Kjaer, ' The morphology of sella turcica in velvocardiofacial syndrome suggests involvement of a neural crest developmental field, 'American Journal of Medical Genetics A, vol 152, no 6, pp 1450-1457, 2010.

7) Marino B, DiGilio MC, Toscana A, Anaclario S, Gianotti A, Feltri C, Anatomic patterns of conotruncal defects associated with deletion 22q11, Genet med 2001, 3:45-48

8) Choi GH, ShinYL,Km GH, Seo EL, Park et all, 'Endocrine manifestations of chromosome 22q11.2 microdeletion syndrome, Horm Res. 2005,63(6); 294-9.

HYPERCALCEMIA; AN UNUSUAL PRESENTATION OF CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA: A CASE REPORT

AUTHORS: Dr. Rashi Agrawal, Dr. Sakthivel R, Dr. Divya Saraswat
Department of Paediatrics, Goa Medical College, Bambolim

ABSTRACT

Hypercalcemia is a metabolic abnormality that usually presents with nonspecific constitutional symptoms such as nausea, vomiting, abdominal pain, fatigue, malaise but can also present as a life threatening emergency. It is a common manifestation of malignancy in adults and in solid tumours of childhood. However, a very small percentage of hematologic malignancies in childhood also present with hypercalcemia. It is more commonly associated with Acute Lymphoblastic Leukaemia than Acute Myelogenous Leukaemia and may occasionally be the presenting feature of leukaemia.

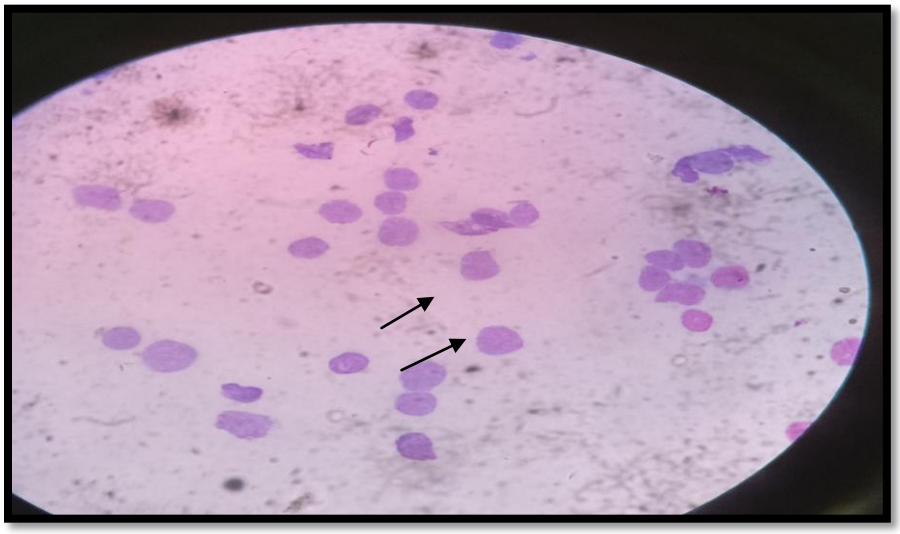
INTRODUCTION

Acute lymphoblastic leukaemia usually presents with pallor, prolonged fever, nausea, vomiting, malaise, bony pains, hepato-splenomegaly, lymphadenopathy, and anorexia and weight loss.
Hypercalcemia as a presenting feature of leukaemia occurs in less than 1 % of cases of paediatric malignancy compared to 20-30% cases of adult malignancy. [1,9] ALL accounts for 50 % cases in paediatric age group. [2]
In view of the non specific symptoms of hypercalcemia at presentation such as malaise, fatigue, polyuria, abdominal pain, constipation, decreased renal function, hypertension, diagnosis of ALL is usually delayed. [6]
Most cases are seen in older children who have symptoms over 4-6 weeks and the peripheral smear is not suggestive of leukaemia. However in this particular case, the patient presented with a history spanning only 15 days and had severe hypercalcemia to begin with, in the absence of other classical signs and symptoms of malignancy.

CASE REPORT

A 10 year old girl, presented with history of low to moderate grade fever for 4 days, 15 days back from the date of presentation and gradual progressive joint pains over last 15 days. The pain started in right knee and progressed to left knee over next few days ;which further progressed to bilateral elbows and ankles simulating a picture of migratory arthritis. On examination, the child appeared moderately malnourished without any signs of pallor, lymphadenopathy, hepato-splenomegaly or bony tenderness.
The initial laboratory investigations revealed hypercalcemia with Serum Calcium-14.6 mg/dl, Serum Creatinine -1.3 mg/dl, Blood urea – 49 mg/dl, Normal electrolytes: Serum sodium-136meq/dl, Serum potassium 3.6meq/dl and Serum Chloride 94 meq/dl. Serum Phosphate-4.8mg/dl and Serum Uric acid-8.3 mg/dl.
The blood routine revealed : Haemoglobin of 10.6 mg% with Leucocyte count of 16,100 per cumm with 49% Lymphocytes, 13%Neutrophils, 5 % Eosinophils and 30% Blasts with 1% Promyelocytes and 2% Myelocytes and 2.2 lac platelets per cumm. In view of Peripheral smear showing blasts, a Bone Marrow Aspiration was undertaken which revealed that the Marrow was almost completely replaced by blasts, which contained scanty cytoplasm with 1-3 nucleoli. Normal cell series were almost totally suppressed. Abdominal and renal ultrasound did not show any evidence of metastasis or nephro-calcinosis or enlarged kidneys.
The ECG did not show any evidence of QTc shortening or arrhythmias.
The flow-cytometry revealed a precursor B cell type ALL. The cytogenetic analysis however could not be obtained.
In view of Hypercalcemia and Hyperuricemia, child was started on Hydration with 5% Dextrose Normal Saline along with Oral fluids and Allopurinol at 20 mg/kg. Over the next 48 hours, the Serum Uric acid level dropped to 6.7 mg/dl. However, Serum Calcium level increased to 16 mg/dl and serum phosphate remained around 4.2 mg/dl.

Below is the bone marrow aspirate image of above patient where blasts are seen with scanty to moderate amount of cytoplasm with 1 to 3 nucleoli.



High Power Field image under oil emulsion of bone marrow aspirate showing blasts with 1-3 nucleoli

DISCUSSION

Hypercalcemia is a rare and unusual presentation of Acute Lymphoblastic Leukaemia. In a study conducted in Yamanashi, Japan, 22 cases of childhood ALL accompanied by Hypercalcemia from 1990 to 2005 were retrospectively analysed, to understand the characteristics of leukaemia and mechanism of hypercalcemia. The clinical characteristics of our patient were similar to the cases studied in the past including individual case reports, in terms of age, signs and symptoms, White blood cell count. The only exception noted in this case is the appearance of Blasts in Peripheral smear which was characteristically Absent in all previous cases studied. It was found that precursor B-cell ALL was significantly associated with Hypercalcemia at presentation or during clinical course of the patient. It(17;19) is found to be associated with expression E2A-HLF and Parathyroid hormone related peptide. [5] Elevated levels of PTHrP with suppressed levels of iPTH owing to negative feedback are implicated in hypercalcemia. PTHrP is responsible for Cytokine mediated resorption of bones and decreased absorption of Calcium and Increased excretion of Phosphate by the kidneys. [3, 4, 5] Another mechanism of hypercalcemia is secondary to lytic lesions in the bones due to metastasis. Therapy with Pamidronate has shown some benefit in few individual case reports however, Dexamethasone along with specific Chemotherapy has helped in both Remission and correction of hypercalcemia. [7 ,8] Some refractory cases have needed Haemodialysis as the treatment for correction of Hypercalcemia. Aggressive therapy in the form of Haemodialysis was not instituted in our patient in view of the relatively asymptomatic presentation. However patient was started on specific Chemotherapy at the time of writing this report.

CONCLUSION:

A high index of suspicion is required to diagnose such cases of Malignancy and it is worthwhile for Paediatricians to be aware of such cases.

REFERENCES

1. Gholamreza Bahoush and Ghasem Miri-Aliabad, International Journal of Haematology Oncology and Stem Cell Research 2014; 8(2): 38–40.

2. Hibi S, Funaki H, Ochiai-Kanai R, Ikushima S, Todo S,Sawada T, Imashuku S; Hypercalcemia in children presenting with acute lymphoblastic leukaemia. Int JHematol. 1997 Oct; 66(3):353-357

3. Amita T, Timothy C, Simon B. Hypercalcemia in acute lymphoblastic leukaemia: an Overview. J Paediatric Hematol Oncology. 2009;31(6):424–427.
4. Z. Oloomi, Acute Lymphoblastic Leukaemia without Circulating Blasts presenting as Severe Hypercalcemia, Acta Medica Iranica, 45(1): 76-78; 2007

5. T Inukai et al, Hypercalcemia in childhood acute lymphoblastic leukaemia: Frequent implication of parathyroid hormone-related peptide and E2A-HLF from translocation 17;19, Leukaemia (2007) 21, 288–296

6. Ribiero RC, Pui CH. Acute complications in childhood leukemias. In: Pui CH, Childhood Leukemias. 1st ed.Cambridge: Cambridge University Press2000:443–462

7. Kerdudo, Cecile et al; Hypercalcemia and Childhood Cancer : A 7 year experience; Journal of Paediatric Haematology/Oncology: January 2005 – Volume 27 – Issue 1 – pg 23-27

8. Mathur M, Sykes JA, Saxena VR, Rao SP, Goldman GM. Treatment of acute lymphoblastic leukaemia induced extreme hypercalcemia with pamidronate and calcitonin. Paediatric Critical Care Med. 2003 Apr; 4(2):252- 255

9. McKay C, Furman WL. Hypercalcemia complicating childhood malignancies. Cancer. 1993 Jul 1; 72(1):256-260

PDA IN PRETERM, CURRENT APPROACH: Dr. Shivanand Gauns

INTRODUCTION

During fetal life, the ductus arteriosus (DA) diverts blood from the pulmonary artery into the aorta, thereby bypassing the lungs . After birth, the DA undergoes active constriction and eventual obliteration. A patent ductus arteriosus (PDA) occurs when the DA fails to completely close after delivery.

Preterm infants with moderate to large left-to-right shunts have a greater mortality rate than those without a PDA. They also have an increased risk of pulmonary edema and hemorrhage and Bronchopulmonary dysplasia, as well as a decrease in perfusion and oxygen delivery to end-organs. As a result, management of preterm infants with clinically significant PDAs has been focused on PDA closure and prevention. The management of PDA in preterm infants will be reviewed here.

OVERVIEW

Treatment and prevention:

Over the last several decades, research efforts have focused on preventing and closing PDA in preterm infants. Current practice is primarily focused on PDA closure, as the benefit of preventive measures to reduce the incidence of PDA appears to be outweighed by the adverse effects of prophylactic therapy.

The management of PDA in preterm infants includes three different approaches:

- Conservative management with supportive therapy alone
- Pharmacologic closure using Cyclo-oxygenase (COX) inhibitors (eg, Indomethacin, Ibuprofen)
- Surgical ligation

The support for either medical or surgical closure is based on data from studies in the 1980s and 1990s that demonstrated PDAs in very low birth weight (VLBW) infants (birth weight below 1500 g) were associated with Pulmonary edema, Bronchopulmonary dysplasia (BPD), Intraventricular hemorrhage (IVH), and Necrotizing enterocolitis (NEC). As a result, many preterm infants with a gestational age (GA) less than 28 weeks have received either medical or surgical therapy for PDA closure.

However, neonatal practice is continuously changing, and the increasing use of Antenatal Glucocorticoid therapy, postnatal surfactant therapy, and the adoption of lower targets of oxygen saturation may have affected both the incidence and impact of a clinically significant PDA shunt. Data is not available regarding the natural course of an untreated PDA in neonatal centers; where these practices have become standard of care. In addition, there are no randomized controlled trials comparing long-term outcomes of the three different approaches. Therefore, it remains unclear which approach is most advantageous for preterm infants and whether clinical parameters or settings may favor one approach over another. This uncertainty has led to variation in the management of PDA in preterm infants not only amongst different neonatal intensive care units (NICU), but often within a single NICU.

Screening:

It remains uncertain whether outcome of preterm infants is improved with universal Echocardiographic screening versus selective Echocardiographic evaluation based on the presence of clinical signs of PDA, advocates for routine screening suggest that early detection of preclinical PDA and treatment result in better outcome. Support for this approach was provided by a report from the EPIPAGE 2, a French national prospective population-based cohort study of extremely preterm infants (born at 24 to 28 weeks gestation) that found that screening for a PDA before day three of life versus no screening was associated with lower in-hospital mortality (14.2 versus 18.5 percent) and a lower risk of pulmonary hemorrhage (5.7 versus 8.4 percent). Observed PDA with a diameter ≥1.5 mm/kg was noted in 62 percent of the 847 patients who underwent Echocardiographic screening, and in 59 percent of the 541 patients who were assessed by echocardiography based on clinical findings. The higher mortality in the non-screened group was primarily observed in untreated infants; however, it is not clear whether or not all of these patients had a PDA. There was no difference in the rate of NEC, severe BPD, or severe cerebral lesions between the two groups. This observational study may be limited by a possible bias as the non-screening group may have included a greater proportion of more severely affected infants because performing the evaluation was based on the presence of clinical signs of PDA.

.....continued

Although these observational data do support routine screening for PDA in extremely preterm infants, the currently available evidence is insufficient to change our clinical practice of performing echocardiography based on the presence of clinical signs of PDA. Further studies, including a randomized control trial, are needed to determine the cost-benefit of universal versus selective screening.

SUPPORTIVE THERAPY:

All neonates with PDA should receive the following supportive care regardless of the approach chosen to manage their PDA:

- A neutral thermal environment and adequate oxygenation that minimize demands on left ventricular (LV) function.
- The use of positive end-expiratory pressure (PEEP) to improve gas exchange in infants with respiratory compromise. In a study in preterm lambs with a PDA, PEEP decreased left-to-right ductal flow and increased systemic blood flow.
- Maintenance of the Hematocrit at 35 to 40 percent may increase pulmonary vascular resistance and reduce left-to-right shunting, although no trials have evaluated the effect of blood transfusion on PDA closure.

Avoidance of loop diuretics:

We do **not** recommend routine use of furosemide or any other loop diuretic in the first week or two after birth, as this stimulates renal synthesis of prostaglandin E_2, a potent vasodilator that maintains ductus arteriosus (DA) patency. In a trial of diuretic therapy in preterm infants with respiratory distress syndrome (RDS), a PDA occurred more frequently in infants treated with furosemide compared with chlorothiazide (55 versus 24 percent). In a retrospective study of preterm infants below 32 weeks gestation, furosemide was associated with an increase in serum creatinine and hyponatremia, but not an increase in urine output. It's recommended to use Thiazide diuretics (eg, chlorothiazide) whenever diuretic therapy is being considered soon after birth.

Fluid restriction

Fluid restriction is widely used in management of neonatal PDA, although evidence for efficacy is lacking. As an example, in a small prospective study of 18 preterm infants (between 24 and 32 weeks) with significant PDAs whose fluid intake was decreased from 145 to 108 ml/kg per day, there were no changes in respiratory or hemodynamic parameters including fraction of inspired oxygen (FiO_2), blood gas values, DA diameter, left atrial/aortic root ratio, and blood flow-velocities in the PDA, left pulmonary artery, and aorta. However, decreases in systemic blood pressure, blood flow in the superior vena cava, and mean blood flow-velocity in the superior mesenteric artery were observed. These results may be limited as the study duration was only 24 hours, which may have been too short of a time period to show benefit or harm.

In contrast, excessive fluid administration (greater than 170 ml/kg per day) is associated with an increased incidence of PDA. Moderate daily fluid restriction between 110 and 130 ml/kg seems prudent to limit pulmonary edema in infants with hemodynamically significant PDA, especially in those with severe respiratory disease.

CYCLOOXYGENASE INHIBITORS

Prostaglandin E_2 (PGE_2) is a vasodilator that promotes ductal patency. It has been clearly established in randomized trials that the Cyclo-oxygenase (COX) inhibitors, ibuprofen and indomethacin, are effective in the pharmacologic closing of PDA in preterm infants. Ibuprofen is the preferred agent as it is associated with a lower risk of necrotizing enterocolitis (NEC) and transient renal insufficiency.

Agents:

- **IBUPROFEN**

  In systematic reviews of randomized clinical trials, Ibuprofen was as effective as Indomethacin in closing PDA and was associated with a lower risk of NEC and transient renal insufficiency, and a shorter duration of mechanical ventilation. In one meta-analysis, there was no difference in the incidence of pulmonary hemorrhage between patients treated with ibuprofen and those who received indomethacin.

.....continued

Dose: The dosing of Ibuprofen for PDA closure is an initial dose of 10 mg/kg followed by two additional doses of 5 mg/kg given at 24-hour intervals. Ibuprofen has been typically given as an intravenous (IV) preparation in developed countries. However, the IV preparation is expensive and many nurseries in developing countries use oral ibuprofen for PDA closure. In a systematic review, it appears that the oral administration of ibuprofen is equally as effective as IV administration.
Further trials are needed to assess the effectiveness of high-dose versus standard-dose ibuprofen, and continuous infusion versus intermittent administration of intravenously administered ibuprofen. In addition, follow-up studies are needed to determine the long-term outcomes of infants treated with ibuprofen.

- **INDOMETHACIN** :
It has been clearly established both by observational studies and randomized trials that indomethacin increases the rate of PDA closure within 24 hours of its administration. Less clearly established are the optimal timing, dose, and duration of treatment.
Dose: The pharmacokinetics of indomethacin varies among preterm infants, and serum half-life decreases with postnatal age. In addition, ductal constriction and adverse effects of indomethacin do not correlate strongly with plasma concentrations. Although some studies suggest that obtaining indomethacin concentrations to adjust dosing may improve the rate of ductal closure, these measurements are not widely available. More than one dose is typically required for sustained constriction. Based on these data, indomethacin is usually given intravenously as multiple doses that range between 0.1 and 0.2 mg/kg per dose administered at 12- to 24-hour intervals. In our practice, we give three doses (0.2 mg/kg per dose) at 12-hour intervals.
Others recommend dosing based on age as follows:
● Infants less than 48 hours of age – 0.1mg/kg per dose
● Infants greater than 48 hours but less than 7 days of age – 0.2 mg/kg per dose
● Infants more than one week of age – 0.25 mg/kg per dose
Duration — Because indomethacin suppresses prostaglandin synthesis only transiently, a prolonged course of Indomethacin has been suggested to sustain ductal constriction while anatomic remodeling occurs. However, a systematic review of five randomized controlled trials showed that a prolonged (four or more doses) administration of Indomethacin compared with a short course of therapy (three or less doses) did not yield statistically significant differences in PDA closure, retreatment, re-opening, or surgical ligation rates . In addition, prolonged therapy appeared to be associated with an increased risk of NEC (relative risk [RR] 1.87, 95% CI 1.07-3.27), but a decreased risk of renal function impairment as demonstrated by a lower proportion of infants with diminished urine output (RR 0.27, 95% CI 0.13-0.6) and elevated serum creatinine (RR 0.51, 95% CI 0.33-0.77) . Based upon this analysis, a prolonged course of indomethacin cannot be recommended for the routine treatment of PDA in preterm infants because of the increased risk of NEC with no reduction in the rate of PDA closure.
Results from one trial support a strategy of discontinuing indomethacin if there is an adequate response based on functional echocardiographic findings following an initial dose (0.1 mg/kg). In this study of 74 infants, there were no differences in the rate of PDA closure or reopening or in the need for surgical ligation between the echocardiogram-managed group and controls treated with a standard two or more doses regimen.

Complications:
Indomethacin reduces cerebral, gastrointestinal, and renal blood flow. Reported adverse effects associated with indomethacin include increased risk of bleeding, transient renal insufficiency, NEC and spontaneous intestinal perforation.
Dopamine may improve indomethacin-related tubular dysfunction and result in higher urine volume and fractional excretion of sodium. In contrast, furosemide is of little benefit in reducing renal toxicity and is contraindicated when dehydration is present.

.....continued

Contraindications:

COX inhibitors are contraindicated in infants with the following:

- Proven or suspected infection that is untreated
- Active bleeding, especially those with active intracranial hemorrhage or gastrointestinal bleeding
- Thrombocytopenia and/or coagulation defects
- NEC or suspected of having NEC
- Significant impairment of renal function
- Congenital heart disease (CHD) in which patency of the DA is necessary for satisfactory pulmonary or systemic blood flow (eg, pulmonary atresia, severe tetralogy of Fallot, severe coarctation of the aorta)
- Hyperbilirubinemia — It appears that both agents interfere with the binding of bilirubin to albumin, thus potentially increasing the risk of kernicterus. Indomethacin affects bilirubin binding only at plasma concentrations that far exceed those seen clinically, whereas an in vitro study reported that ibuprofen interferes with binding at serum concentrations achieved by the usual doses of the drug. Two retrospective studies also demonstrated that average peak bilirubin levels were higher in patients treated with ibuprofen compared with those treated with indomethacin. However, in a prospective study of 32 preterm infants with baseline total bilirubin (TB) concentration less than 8.8 mg/dL , there was no difference in levels of TB and unbound bilirubin between baseline measurements and those measured one and six hours after administration of a standard loading dose of IV ibuprofen (10 mg/kg) . Infants with higher levels of TB were not allowed to participate in this study.

As a result, these results do not provide data for patients with levels of TB >8.8 mg/dl

Timing:

Although data on the optimal timing of COX inhibitor administration for PDA closure are limited, when pharmacologic closure is considered, we suggest administration of a COX inhibitor in infants with a significant PDA prior to the onset of signs of heart failure'

- A clinical trial that randomly assigned early treatment of ibuprofen or initial placebo (expectant) to preterm infants with subtle signs of PDA (murmur, bounding pulse, and metabolic acidosis) reported that half of the patients who received placebo did not require any additional medical (open label ibuprofen) or surgical treatment for their PDAs . The median age of ibuprofen treatment was three days in the early treatment group versus 10 days for those who received medical treatment in the initial placebo group. There was no difference between the two groups in the primary outcome of days requiring oxygen supplementation during the first 28 days of life. In addition, there was no difference in the administration of open label ibuprofen, surgical ligation, or mortality. These data support the use of COX inhibitor therapy only in patients with hemodynamically significant PDA (eg, hypotension, pulmonary hemorrhage, or respiratory deterioration). Of note, this study was terminated at two-thirds enrollment because of the recall of IV ibuprofen.
- A meta-analysis demonstrated that early (first two or three days after delivery) versus late (7 to 10 days after delivery) administration of indomethacin in preterm infants with PDAs was associated with shorter duration of mechanical ventilation and decreased risk of Bronchopulmonary dysplasia (BPD) (odds ratio [OR] 0.39, 95% CI 0.21-0.76), NEC (OR 0.24, 95% CI 0.06-0.96), and need for surgical ligation (OR 0.37, 95% CI 0.20-0.68) .
- Another study found no influence on timing of COX inhibitor therapy on the outcomes of PDA surgery, death, or BPD. Specifically, early (0 to 2 days) treatment outcomes were not different than intermediate (3 to 6 days), or late (>7 days) treatment.

Failure to respond:

A significant proportion of patients will fail to respond to an initial dose of COX inhibitors. Risk factors associated with a persistent PDA include lower gestational age (GA), lack of exposure to antenatal corticosteroid therapy, increased severity of respiratory distress, and intrauterine inflammation. These factors may be associated with increased COX activity.

Limited data suggest a second course of COX inhibitor therapy is associated with a 40 percent rate of ductal closure in patients who fail to respond to initial therapy as illustrated by the following studies:

- In one retrospective study, 70 of 160 patients initially treated with ibuprofen had successful ductal closure. In 80 patients who failed to respond, a second course of indomethacin resulted in closure in 32 patients (40 percent).

.....continued

The response rate was lower in infants with a GA <26 weeks compared with more mature infants for both first (28 versus 64 percent) and second courses of therapy (31 versus 60 percent).
● In a case series of infants (GA <28 weeks) with recurrent PDA after initial indomethacin treatment, a second course of indomethacin therapy was associated with permanent ductal closure in 14 of 32 infants (44 percent).
● In a third case series of 164 preterm infants, a closure rate between 55 to 60 percent was similar after the first (109 of 164), second (24 of 43), and third (6 of 11) course of ibuprofen . There were no additional side effects noted after multiple courses of ibuprofen.
Based on these data, administration of a second course of COX inhibitor is reasonable in infants who fail an initial course of therapy. However, if the patient fails to respond to two courses of therapy, a positive response to additional drug treatment is unlikely. Surgical ligation should be considered in infants with persistent significant PDA, whereas no further intervention may be indicated in those with small persistent PDA.
Outcomes using this approach were illustrated by a German retrospective study of 321 infants with PDA that reported a response rate of 78 percent (n = 253) to medical or surgical intervention. Of the remaining 68 patients with small PDAs that failed to respond to medical therapy and were discharged with a persistent PDA, 52 patients had spontaneous closure, five had catheter intervention to close the ductus, seven still had persistent PDAs at 36 months corrected age but were asymptomatic, two patients were lost to follow-up, and there were two deaths (unrelated cause in one, and severe pulmonary hypertension in the other). Although these results demonstrate that most small PDAs will spontaneously close after discharge, close monitoring is needed to determine if further intervention is needed to prevent mortality and serious complications (eg, pulmonary hypertension).

Feeding during treatment — Because of adverse effects of indomethacin or ibuprofen on the gastrointestinal tract, there have been concerns about initiation or continuation of enteral feeds during administration of either drug. However, several studies have shown that enteral feeds during COX inhibitor therapy appear to be safe, including the following:
● In a retrospective, case-control study of 64 preterm infants (GA <29 weeks) who received early human milk feeds; there was no difference in feeding tolerance between patients who received indomethacin and matched controls not treated with indomethacin.
● A large retrospective study from a Canadian tertiary center reported similar rates of NEC for infants who were not fed (n=229), who had reduced feeds (n= 142, <60 ml/kg per day) or continued with normal feeding volumes (n= 44, >60 ml/kg per day) of 6.1, 7.8 and 4.6 percent, respectively
● In a multicenter trial of preterm infants (GA ≤30 weeks) who were receiving COX therapy, infants (n=81) randomly assigned to trophic enteral feeds required less time to reach full enteral feeds than those (n=96) who were initially assigned to no feeds. There was no difference between the two groups in the incidence of complications including necrotizing enterocolitis, infection, or spontaneous intestinal perforation.
Based on these findings, it appears that continuation of enteral feedings during COX inhibitor therapy is safe.

- **PARACETAMOL** :

Both the non-selective Cyclo-oxygenase (COX) inhibitors (ibuprofen and indomethacin) and paracetamol inhibit prostaglandin synthetase, which has two catalytic sites [43]. The COX site is inhibited by the COX inhibitors, whereas it appears that paracetamol affects the peroxidase segment. There are limited data on the use of paracetamol (acetaminophen) to induce ductus arteriosus (DA) closure. In reviews of the literature, both oral and intravenous (IV) preparations of paracetamol have been reported to successfully result in PDA closure. In the included studies, paracetamol was administered as a daily dose of 60 mg/kg over a two- to seven-day period. However, this dose is considerably higher than recommended doses for pain and fever control in neonates, and there remain concerns regarding hepatotoxicity in the use of this medication as well as long-term effect on neurodevelopment. In addition, the quality of the included studies was judged to be poor to moderate.
Subsequent studies have published conflicting results:

- ❖ In one observational report using the same dosing (15 mg/kg every six hours) for a three- to seven-day
- ❖ period, paracetamol was not effective for PDA closure after treatment failure with ibuprofen .
- ❖ In the second observational study, intravenous administration of paracetamol was effective as both first-line therapy, used when ibuprofen was contraindicated, and as rescue therapy, used when ibuprofen failed .

.....continued

Further conclusive data are needed to demonstrate efficacy of PDA closure and safety of this medication in the preterm infant before recommending the use of paracetamol for PDA closure.

SURGICAL LIGATION:

Surgical ligation may be performed if the patient remains symptomatic after one or two courses of Cyclo-oxygenase (COX) inhibitor or if COX inhibitor treatment is contraindicated. However, pharmacologic therapy remains the preferred initial treatment because ligation is associated with risks of blood pressure fluctuations, respiratory compromise, infection, intraventricular hemorrhage (IVH), chylothorax, recurrent laryngeal nerve paralysis, Bronchopulmonary dysplasia (BPD), and death . Because data are observational, it remains uncertain whether surgical ligation is a major contributor to morbidity and mortality, or if the patients who undergo surgical ligation are more severely compromised to begin with. However, there are data suggesting that patients are at risk postoperatively for a significant decrease in left ventricular (LV) output and hypoperfusion, because of decreased LV preload and increased systemic vascular resistance. It has also been proposed that surgical ligation may contribute to brain injury due to intraoperative compromise of cerebral oxygen saturation and postoperative hemodynamic instability.

As a result, in patients in whom surgical ligation is performed, immediate postoperative care must include continuous cardiovascular monitoring, and the use of volume support and inotropic agents to maintain adequate blood pressure and perfusion . Targeted echocardiography may be used to assess postoperative myocardial function and guide management.

PERCUTANEOUS TRANSCATHETER OCCLUSION:

Percutaneous PDA closure has been performed in both term and preterm infants, including some patients who weigh less than 1000 g . However, it remains unknown whether this intervention is as effective and safe as surgical ligation, especially in very preterm infants. At present, the transcatheter approach should be confined to institutions with extensive experience with interventional techniques in preterm infants until further data are available that shows it is equivalent to surgical ligation for both efficacy and safety.

CONSERVATIVE APPROACH:

Observational evidence suggests that conservative treatment using supportive therapy alone in preterm infants with PDA may be a reasonable option versus medical or surgical treatment :

- In an American study of very low birth weight (VLBW) infants (birth weight ≤1500 g), outcome measures were compared between treatment strategies used in two distinct time periods: traditional management of patients consisting of medical (i.e., course of indomethacin) and surgical treatment between 2005 and 2007 (era 1), and initial supportive care and observation between 2008 and 2009 (era 2) . The use of indomethacin and surgical ligation was decreased in era 2 compared with era 1 (indomethacin [26 versus 79 percent] and ligation [33 versus 45 percent]). There were no differences in the use of supplemental oxygen, nasal continuous positive airway pressure (nCPAP), or mechanical ventilation on mortality. However, the incidence of Bronchopulmonary dysplasia (BPD) was slightly higher in era 2 compared with era 1 (54 versus 40 percent).
- In a retrospective study from Korea that also reviewed outcomes from two time periods from 2009 to 2011 (mandatory closure either with medical or surgical treatment) and 2012 to 2014 (supportive therapy alone), there were no differences in mortality, necrotizing enterocolitis, or intraventricular hemorrhage . In contrast with the above study, the incidence of PDA was lower in the second time period of nonintervention.

'Supportive therapy'

Other experts in the field have also advocated conservative management of PDA in preterm infants based on the evidence that demonstrates a high rate of spontaneous closure and established adverse effects of both pharmacologic and surgical intervention, and the lack of evidence that treatment results in a decrease in neonatal morbidity . This was illustrated by a review of pooled data from treatment trials of PDA in preterm infants regardless of methodological quality that were published before 2010 . In this analysis, early trials with oral indomethacin suggested reduced mortality; however, subsequent larger studies that used intravenous (IV) indomethacin did not find a decrease in mortality.

COMPARISON OF MANAGEMENT APPROACHES

There have not been large randomized controlled trials comparing the different approaches of managing PDA in preterm infants.

Observational data are available, but often the treatment groups differ in gestational age (GA), birth weight, and severity of illness . This was illustrated in a study that evaluated 18-month outcome based on the management of PDA in infants with birth weights below 1000 g from the National Institute of Child Health and Human Development (NICHD) Neonatal Research Network Generic Data Base . This study included 403 infants who were treated conservatively, 1525 treated with indomethacin alone, 135 with primary surgery, and 775 who received indomethacin initially followed by surgery. The following findings were noted:

- Infants who underwent either primary or secondary surgical closure had lower GA, birth weight, and Apgar scores but were less likely to be small for gestational age (SGA).
- There were no differences in the measured demographics between infants treated conservatively and those who only received indomethacin.
- There also were no differences between the conservatively and medically managed groups in mortality, neurodevelopmental outcome at 18 months, the composite outcome of mortality and neurodevelopmental outcome, or the risk of Bronchopulmonary dysplasia (BPD) or necrotizing enterocolitis (NEC).
- There were no differences between the primary or secondary surgical groups, and indomethacin groups in the composite outcome of mortality and neurodevelopmental outcome or rate of NEC. Patients who underwent secondary surgical closure compared with those treated with indomethacin alone were more likely to have BPD and neurodevelopmental impairment, but had a better survival rate.

The study design, however, has a bias for increased survival in patients treated surgically because surgical deaths were only counted after the procedure, whereas deaths in the medically treated group were reported any time after the diagnosis of PDA.

In an observational study from the Canadian Neonatal Network of 3556 infants with PDA, 2026 were treated with indomethacin alone (57 percent), 626 with both surgical ligation and indomethacin (18 percent), 577 with conservative treatment (16 percent), and 327 with surgical ligation alone (9 percent).

Multivariate analysis showed the following:

- Higher mortality and morbidity (ie, BPD, grade 3 or 4 intraventricular hemorrhage [IVH], and stages 3 to 5 retinopathy of prematurity [ROP]) for patients treated with surgical ligation, irrespective of previous indomethacin therapy, compared with infants treated conservatively or with indomethacin alone.
- There were no differences in mortality or morbidity between the groups who were treated conservatively or with indomethacin alone.

In a population-based cohort Australian study of extremely preterm infants (GA <25 weeks), multivariate analysis showed greater risk of moderate-to-severe neurodevelopmental disability at two to three years of age for survivors with medically treated PDA (adjusted odds ratio [aOR] 1.62, 95% CI 1.20-2.20) or with surgically treated PDA (aOR 2.0, 95% CI 1.13-3.56) compared with those who did not have a diagnosis of PDA or did not receive intervention for PDA .

Large randomized controlled trials are required to truly compare the different treatment approaches in regards to mortality and complications and to determine if there is a subset of patients that require more aggressive management.

PROPHYLACTIC THERAPY:

- **Cyclo-oxygenase inhibitors:**

Although the use of prophylactic Cyclo-oxygenase (COX) inhibitors had been proposed to reduce the incidence of PDA and improve neonatal outcome, prophylactic COX inhibitors appear not to be more effective at improving mortality, pulmonary outcome, or reducing the risk of necrotizing enterocolitis (NEC) than early treatment of a symptomatic PDA . In addition, prophylactic treatment of infants that do not develop symptomatic PDA may actually increase the risk of Bronchopulmonary dysplasia (BPD) as illustrated in the Trial of Indomethacin Prophylaxis in Preterms (TIPP trial) . In this study, 999 preterm infants (birth weight 500 to 999 g) were randomly assigned to indomethacin prophylaxis or placebo at six hours of life.

.....continued

The following findings were noted:

- Infants who received indomethacin had a significant reduction in the incidence of PDA (21 versus 49 percent with placebo).
- Infants who received indomethacin had a similar incidence of BPD overall (45 versus 43 percent). However, among the subgroup of infants who did not develop PDA, indomethacin was associated with a higher incidence of BPD (43 versus 30 percent), a greater requirement for oxygen supplementation, and less weight loss.

The last two findings may have resulted from a decrease in urine output with indomethacin leading to fluid retention, which promoted the development of BPD .

A systematic review of 19 reports including 2872 infants treated with prophylactic indomethacin or placebo reported a significant reduction in symptomatic PDA (relative risk [RR] 0.44, 95% CI 0.38-0.50) and need for PDA ligation (RR 0.51, 95% CI 0.37-0.71). Prophylactic indomethacin also significantly reduced the incidence of severe intraventricular hemorrhage (IVH) (RR 0.66,95% CI 0.53-0.82). However, there was no reduction in mortality, the composite outcome of death or severe neurologic disability on follow-up at 18 to 36 months, BPD, or NEC.

Oliguria was almost twice as likely in the indomethacin-treated infants. Thus, while early prophylactic indomethacin may significantly reduce PDA, evidence of long-term benefit is lacking .

Several studies and a systematic review also showed that prophylactic ibuprofen versus placebo or no intervention decreased the incidence of PDA at day three of life and the need for therapeutic intervention . However, the use of ibuprofen was associated with adverse side effects.

Based upon these results, prophylactic treatment to reduce the incidence of PDA with COX inhibitors is not recommended because many infants who would not develop significant PDAs are unnecessarily exposed to drugs with potentially serious adverse effects and no evidence of long-term benefit.

- **Paracetamol**

A small trial of 48 patients reported that intravenous administration of paracetamol prevented symptomatic PDA without adverse side effects . In this trial, patients randomly selected to receive paracetamol were given a loading dose of 20 mg/kg within 24 hours of birth, followed by 7.5 mg/kg every six hours for four days.

The optimal dosing and the long-term safety of paracetamol remain unknown. As a result, prophylactic treatment to reduce the incidence of PDA with paracetamol is not recommended, because infants who would not develop significant PDAs are unnecessarily exposed to drugs, and there is no evidence of long-term benefit.

RATIONAL APPROACH

- **Symptomatic PDA**

Over the past several decades, management of symptomatic PDA has changed in many neonatal intensive care unit (NICU). Prior to the commercial availability of indomethacin in the 1980s, surgical ligation was performed in preterm infants with PDAs who were dependent on mechanical ventilation. Once indomethacin became available, management strategy changed to include frequent evaluations to detect PDAs using echocardiograms and to administer indomethacin therapy to all ventilator-dependent infants with PDA. A moderate approach based on initial supportive care and subsequent pharmacologic therapy to close PDAs in infants who remain dependent on mechanical ventilation is most commonly used. As noted above, there are no data to determine the optimal management of PDA in preterm infants. As a result, there is variability in the treatment of PDAs amongst different centers, and among neonatologists at a single NICU including our own institution.

The following is a consensus approach to the management of PDA in preterm infants :

- An initial conservative approach with supportive care that includes:
  - Daily fluid restriction between 110 and 130 ml/kg.
  - Use of permissive hypercapnia, low PaO_2 targets, and positive end-expiratory pressure (PEEP) in infants who are mechanically ventilated to facilitate weaning from the ventilator and extubation, thereby minimizing mechanical lung trauma that increases the risk of Bronchopulmonary dysplasia (BPD).
  - Chlorothiazide may be used to treat infants who become fluid-overloaded or with signs of increased interstitial pulmonary fluid.
  - Maintenance of a hematocrit above 35 percent.
  - Neutral thermal environment.

.....continued

●A course of a Cyclo-oxygenase (COX) inhibitor is given to infants who remain dependent on mechanical ventilation after a few days and have a significant PDA confirmed by echocardiography. The preferred COX inhibitor is Ibuprofen. Do not routinely measure platelets prior to drug administration but do avoid COX inhibitor use in infants with coagulopathy. Do not use these drugs in patients with necrotizing enterocolitis (NEC) because of the risk of decreased blood flow to the bowel.
Feedings are withheld at the discretion of the individual attending clinician during drug administration.
Urine output is monitored and if oliguria is present, low dose dopamine is administered
●For infants with clinically significant PDA who also have NEC or renal failure, or are recovering from intestinal surgery, use ibuprofen for pharmacologic PDA closure.
●A second course of COX inhibitor therapy is given if follow-up echocardiograms show failure of closure and the infant is still ventilator dependent.
●Surgical ligation of the PDA is rarely performed and is reserved for infants that remain on very high ventilator settings with large PDAs who have failed medical therapy.

Prophylactic therapy

The use of prophylactic COX inhibitors (i.e., indomethacin and ibuprofen) to reduce the incidence of PDA is not recommended because many infants who do not have significant PDAs are unnecessarily exposed to the adverse effects of these drugs.

OUTCOME

Mortality is increased in infants with a persistent PDA especially in very preterm infants with a gestational age 28 weeks or less . The higher mortality rate is ameliorated with successful closure but persists in those with failed attempted closure. In a retrospective study of 252 infants born at or below 28 weeks gestation, survival outcomes were compared among infants who never had a significant PDA, infants whose significant PDA had been successfully closed medically, and those who had a persistent significant PDA after unsuccessful medical closure . Infants with a persistent PDA had a fourfold increased risk of death compared with infants who never had a significant PDA. There was no difference in mortality rate between the group of infants who had successful medical closure of their PDA and those who never had a significant PDA.
In another retrospective review from a single tertiary center in the United States, 41 very low birth weight (VLBW) infants with a persistent PDA (failed indomethacin therapy and not surgically ligated) had an eightfold increased risk of death compared with 260 infants with a closed PDA after adjustment for confounding factors that included perinatal factors, level of maturity, and disease severity .
In infants who receive intervention, it is unclear whether there is a difference in outcome between medical and surgical therapy.
●In a retrospective study of 426 extremely low birth weight (ELBW) infants with PDA from the Trial of Indomethacin Prophylaxis in Preterms (TIPP), there was a trend toward decreased mortality in patients whose PDAs were surgically closed compared with those who were treated without surgery . However, in surviving infants evaluated at a corrected age of 18 months, neurosensory impairment, Bronchopulmonary dysplasia (BPD), and severe retinopathy of prematurity (ROP) were more likely to develop in patients with surgically closed PDA compared with infants who were managed without surgery.
In view of limitations in study, it is difficult to determine whether medical or surgical treatment for PDA closure is superior in long-term outcome in preterm infants.
●A retrospective review of 446 infants (GA <28 weeks) from a single tertiary center reported the clinical outcome of a standardized protocol utilizing prophylactic indomethacin. After initial prophylactic indomethacin, 15 percent had persistent PDA. Twenty-seven percent developed symptomatic PDA and the attending neonatologist decided upon the subsequent choice of treatment (indomethacin versus surgical ligation). Results, which were adjusted for GA, demonstrated no differences in the rates of mortality, necrotizing enterocolitis (NEC), and ROP between patients treated medically or surgically In contrast, increased risk for BPD was associated with surgical ligation.

.....continued

SUMMARY AND RECOMMENDATIONS

Preterm infants with clinically significant patent ductus arteriosus (PDA) have a greater mortality rate than those without a PDA. PDAs also are associated with an increased risk of pulmonary edema and hemorrhage, and Bronchopulmonary dysplasia (BPD). As a result, management has been focused on PDA closure and prevention

- Management of PDA includes the following several different approaches .
  - Conservative management with supportive care alone .
  - Pharmacologic closure using Cyclo-oxygenase (COX) inhibitors, such as indomethacin and ibuprofen
  - Surgical ligation
  - Percutaneous transcatheter occlusion

- The optimal management approach is not known as there is a paucity of large randomized controlled trials comparing the three different therapeutic options. As a result, it remains unclear which approach is most advantageous and whether clinical parameters may favor one approach over another. This uncertainty leads to wide variability in the management of PDA amongst different neonatal intensive care units (NICUs) and even neonatologists who practice in the same NICU.

- Management approach for preterm infants with symptomatic PDAs, the following therapeutic decisions are based on the severity of respiratory disease and the continued need for mechanical ventilation.
- Provide supportive care for all preterm infants with PDAs. This includes providing a neutral thermal environment, using positive end-expiratory pressure (PEEP) to improve gas exchange, maintaining a hematocrit of 35 to 40 percent, fluid restriction between 110 and 130 ml/kg per day, and the use of permissive hypercapnia and low oxygen saturation targets to manage respiratory distress. If diuretic therapy is indicated, the use of thiazide diuretics (eg, chlorothiazide) is preferred over loop diuretics such as furosemide (Grade 1B).
- In infants with a PDA who remain dependent on mechanical ventilation after two weeks, a course of COX inhibitors is suggested over supportive care alone (Grade 2B). A second course of COX inhibitor is administered if follow-up echocardiograms demonstrate a persistent PDA and the infant remains ventilator dependent. If a COX inhibitor is used, we recommend ibuprofen rather than indomethacin for PDA closure (Grade 1B). Ibuprofen is equally effective but has fewer adverse effects.
- We suggest that surgical ligation only be performed in infants with large PDAs who remain on high ventilator settings and have failed to respond to COX inhibitors (Grade 2B).

- The use of prophylactic COX inhibitors to reduce the incidence of PDA is not recommended, because many infants who would not develop significant PDAs are unnecessarily exposed to drugs with potentially serious adverse effects (Grade 1B).

REFERENCES

Can be obtained by Email request ---- ' gaunsshivanand@gmail.com'

Pediatric ChessMaster: ***Dr. Rajdatta Timble***

Our very own member, ***Dr. Rajdatta Timble****, has a passion for this game – CHESS, for many years. He does give a certain part of his day to this game. A Stress Buster as he calls it. He rocks at it and that's proved beyond doubt by the no. of tournaments big and small that he has won.*

- *IMA Tiswadi Branch organized a Chess Tournament and Dr. Timble secured the Second place in the same.*
- *Recently IMA National Chess Tournament was held at Nashik, organized by IAP Nashik Branch where he won the 3rd place.*
- *In January 2017, he secured 7th place in Ponda Chess Champinionship. It was for all age groups.*
- *It's worth appreciating that He is* ***FIDE*** *(****Fédération Internationale des Échecs*** *or* ***World Chess Federation****) Rated International Player for the past 2 years.*
  FIDE is an organization which is a governing body to Conduct and keep a check on the National level Chess Tournaments held at various places.

Whilst receiving award at Chess Tournament organised by IMA Tiswadi

At Chess Tournament held at Nashik

Kudos to you Dear Dr. Rajdatta!!!!…Keep the trophies coming….

Passion to Cycle: *Dr. Suhel Nagarsenkar*

It's said that; If your Mind can Believe it, Your body can Achieve it....
So, *here we have Dr. Suhel Nagarsenkar, an Enthusiatic Triathloner who has been regularly Being of part such competitions held.*

- *Aspiring to achieve his Goals; Suhel wants to make a mark and a Name for himself in this field.*

- *His has to his credit of successfully completing a grueling* ***Half Ironman Triathlon*** *organized by* ***Chennai Trekkers Club*** *in Chennai in December 17. He managed to complete the same in a span of 7 hrs 37mins.*

- *In 2016, He has completed the* ***Goa Omlypic Thriathlon*** *in Feb 2016 in jus 3hrs 20mins.*

- *He has been a member of* ***Propedalrez Cycling Club of Margao*** *and take part in such events regularly*

At Triathlon held at Chennai

All the Best Suhel... May you keep your Passion on the High Always...

Activities:

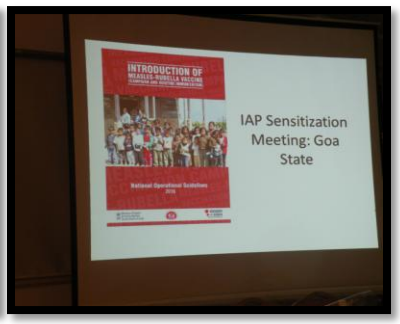
1. **IAP GSC Installation Ceremony with CME on Helmanthiasis Campaign and MR Campaign**

-Our tenure started in 2017 January with the **Installation Ceremony held on 29th Janaury 2017** at Treehouse Neptune Hotel. It was in association with DHS and WHO with the **chief guest Dr. Sanjeev Dalvi (Director of DHS)**. After the installation ceremony and handing over of the designation by our Awesome Trio **Dr. Sushma Kirtani (President), Dr. Poonam Sambhaji (Secretary) Dr. Chetna Khemani (Tresurer)** to the new Dynamic trio **Dr. Harivallabh Pai (New President), Dr. Kalapana Vaitheeswaran (Secretary) and Dr. Swapnil Usgaonkar (Treasurer)**, with **Dr. Santosh Usgaonkar** being the **Executive Board member for the year 2017-2018.**
The CME session began with a informative talk by **Dr. Vandana Dhume on The Helmenthiasis campaign** followed by Lectures and **Awareness about the new MR (Measles- Rubella) Campaign** launched. The Speakers for this session were **Dr. Rupa Naik (SEPIO) – DHS and Dr. Rahul Shimpi (SRTL, MH and Goa) – WHO**. The CME was followed by a very mind blowing interactive session. It was in all a successful launch with full house attendance.

Handing over ceremony

Chief guest addressing the house

Dr. Vandana briefing on Helmanthiasis Campaign



Information on MR Campaign being dispensed followed by a very resourceful discussion on the topic

2. <u>CIAP Derma Module</u>

-Our **Second meet** was held on **12th February 2017** at Treeshouse Neputune Hotel. It was a CIAP module on **Paediatric Dermatology** with very Renowned Dermatologist as the faculty.
Dr. V Anandan briefed us on Infections and Infestations, Dermatitis, Dermatologic problems in Adolescence, and Other prevalent common dermatologic problems encountered by us. **Dr. Vijaybhaskar** gave an informative talk on Cleansers, Approach to Hypopigmented patch, Emergencies encountered in Paediatric dermatology and Judicial use of steroids.

Dr. V Anandan addressing the crowd

Dr. Vijay bhaskar explaining salient points

Answering all queries enthusiatically

3. <u>CIAP Module on Pedicolegal Issues</u>

-Our **Third meet** held on **5th March 2017** at the same venue was on **Pedicolegal Issue**, a hot burning issue in today's Scenario. We had with us very resourceful faculty, wherein **Dr. SM Kantikar** started off the session by enlightening us as to **What is Negligence** thereafter spoke about **'Consumer Protection Act'** and **Professional Indemnity**.
Dr. Satish Tiwari guided us about **Legal issues in Critical care and Immunisation** and briefed regarding **Mob Violence**.
Dr. Sushma Kirtani highlighted about the importance of **Patient- Doctor Relationship and Communication Skills**.
Also we had a very **Interesting Role play conducted** to demo the same. **Dr. Arvind Almeida** spoke on a very importance topic of **Ethical issues and Professionalism.** It was a very fruitful CME indeed and as expect it has full house attendance.

Speakers- Dr. Tiwari, Dr. Kantikar, Dr. Sushma, Dr. Almeida addressing the gathering....
and answering to each query meticulously...at the same time entertained the audience with Role Play

Special gifts to the participants of Role play

Our other members have been doing their part and interesting activities, as follows:

4. <u>Activities Conducted by Members at Hospicio Hospital Margao</u>

- **MAA campaign** (**M**other's **A**bsolute **A**ffection: Hospicio Hospital Margao).

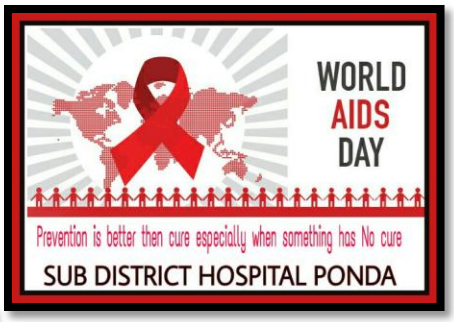


Health talks on breast feeding in paedo OPD, ward,

Nursing students, promoting breast feeding in postnatal ward.

5. <u>Activities done by member in Sub District Hospital, Ponda</u>

- **Health talks on HIV AIDS conducted at SDH Ponda.**



- **MR vaccine campaign** conducted from **1st Feb to 28th Feb 2017**.

It was supervised and conducted by our members working in Government sector
MR Campaign was held in various school, with prior awareness talks.



6. <u>Activities done by Member from IAP Margao in associtaion with IMA MArgao Branch</u>

- To create public awareness regarding **MR Campaign,** Health talks were conducted in Association with IMA Margao. Margao paediatricians played an active role in same. **Dr. Ramnath Naik** (Nodal officier incharge- PHC Carcora and PHC Tisk Usgaon) was the speaker. **Dr. Kamlesh Kepkar** also appointed as nodal officer for MR campaign.

Dr. Ramnath Naik (Left) and Dr. Martha (Right) addressing the people on MR Vaccine Campaign

7. <u>Dental camp organised by our member Dr. Swapnil Usgaonkar at Agassaim</u>

- **IAP Goa Chapter** conducted a **Dental Health camp** at St. Lawerence High School, in association with **Studio 32** at Agassaim
  It was conducted by a team of 5 doctors (Dental Practitioners). **Dr. Swapnil Usgaonkar** was also present during the camp.



Dr.Paresh Lotlekar, Dr. Sai Audi, Dr. Hema Kankonkar, Dr. Aarti Gadkari, Swapna Virdikar and Dr. Swapnil Usgaonkar were present for the camp session

8. <u>Camp conducted by Dr. Poonam Sambhaji At Margaret Bosco Bal Sadan</u>

- **Dr. Poonam Sambhaji**, conducted a camp for a boys home at **Margaret Bosco Bal Sadan, Uccasaim** for a group of 60 boys in the age group of 7 to 20 years. It was a general check up done with special emphasis on nutritional component. Talk was given on Adolescent issue and the kids and management were made aware about the importance of nutrition and hygiene. Multiple cases were identified and referred to respective specialties as needed.



Dr. Poonam Sambhaji examining the inmates of Margaret Bosco Bal Sadan

9. <u>Our Members as Resource persons for CME conducted for Goa- Sindhdurgh Belt</u>

- **Dr. Shivanand Gauns ,** gave a very informative talk on '**PDA in preterm, Current approach'** at a NICU Club Meet (Goa - Sindhdurgh Belt) on 18th – 19th Feb 2017. At the same Meet, **Dr. Maneka Fernandes Sapeco**, addressed the gathering on the topic of **'Surfactant Therapy in NICU- A Rational Approach'**

Dr. Shivanand Gauns and Dr. Maneka Fernandes Sapeco being welcomed and addressing the gathering

10. <u>Multispecialty Camp organised by Dr. Anant Kini</u>

- **Dr. Anant Kini** organised and participated in a Free Mega Camp held at Ramnathi Goa on 29th Jan 2017. It was a multispecialty camp.

Dr. Kini addressing and examining the patients at the Camp conducted

11. Activities conducted by Dr. Sushma Kirtani

- As a part of **Swachhta Pakhwara** from **1st to 15th March 17**, activities were done by **Dr. Sushma Kirtani**.

She held drawing competition on the topic '**Swacchh Bharat Abhiyan**' and spoke to kids on WHO handwashing technique, regarding cleanliness, Healthy diet, junk food.
She laid special emphasis on how to **Eat Healthy = Stay Healthy** and How to have a **Healthy Mind - Healthy Body**.
Mothers were addressed on diet, immunization, safe garbage disposal etc.

Dr. Sushma busy educating the kids in a loving manner on the occasion of Swachhta Pakhwara

- **Dr. (Mrs.) Sushma P. Kirtani i**n the position of **Chairman**, highlighted the Role of State Commission to monitor RTE Act, 2009 as one of the mandate of the Commission. She explained the physical, mental and emotional effects of Corporal Punishment and urged the participants to instruct the **Teachers and Primary school Headmasters** with take home message, so that corporal punishment can be abolished for the state of Goa.

Dr. Sushma addressing The Headmasters of Secondary School at a Workshop on Corporal Punishment held on the 24th March 2017

12. <u>Activities conducted by Dr. Purnima Usgaonkar</u>

- **Dr. Purnima Usgaonkar** conducted her **Regular Camps at Matruchaya and Sneha Mandir Mobile Camp.** Besides the above, there were Dermatology and ENT camps held at **Matruchaya** on 2 different occassions, wherein **Dr. Gaurish Laad (Practicing Dermatologist)** and **Dr. Laxmikant Naik (Practicing ENT Surgeon)** participated for the respective camps.

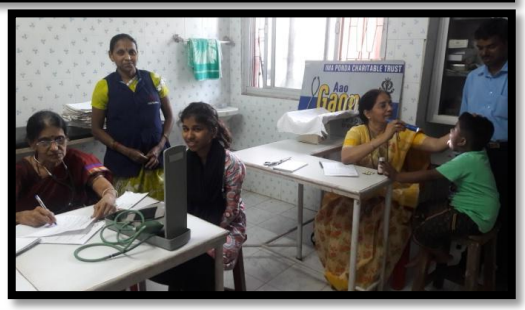
a) Health Talks on the topic of **'Health in Adolescence'** were given for students, parents and teachers of Government High School Ponda.

b) On occasion of **International Women Day** she addressed the topic '**Health of a women and her family'** at **Cadilla Zydus Pharma at Kundai.**

C) Also she gave a talk on '**Care of the Newborn and the Mother' in post postnatal period** at the programme of Baby Blessings. At the same programme **Dr. Nutan Dev** spoke on **"Breast feeding"**

d) A talk on **Cochlear implant** was arranged by Dr. Purnima for Sharada support group of parents of children with hearing impairment, at **Swaranaad Centre of Shree Sharada Granth Prasarak Mandal**. **Dr. Parag Sawant** was the ENT surgeon invited for the same.

Sneha Mandir Camp



Weekly Camps at Matruchaya, Ponda

Dermatology Camp Held at Matruchaya

Dr. Parag Sawant addressing on 'Cochlear Implant

Dr. Purnima giving talk at Cadilla Zydus Pharma

13. Activities help under Dr. Nandita D'souza

- **Sethu's activities - Dr. Nandita D'souza**

Sethu has had a hectic last quarter of FY 2016-17.

a) Training programs for diverse groups were conducted all through the last 3 months. Another batch of the **Asha Parent Toddler program** for young children with Autism with 7 toddler-mother pairs started in January. They attend twice a week and receive intensive training in social communication. **Sarah Cunningham**, a **volunteer psychologist** from the UK also conducted sessions on family coping for the mothers.

b) On **14th February**, 35 caregivers from child care institutions across Goa, including the Govt home Apna Ghar, received **training in respectful discipline methods. Dr. Nandita de Souza** emphasized the **importance of building good relationships with children** to avoid rebellion when rules are to be followed.

c) **Silvia Mascarenhas, the Child Protection Officer at Sethu**, conducted a session on **Sexuality for Teenagers** organized by **Margdarshak in Vasco on 28th February**. The young people used the opportunity to ask questions in this important area of development and clear their doubts and worries.

d) Sethu organized **CLAPS, a 3 day workshop** on **inclusive education for preschool teachers** from **1st to 3rd March** 2017. 17 Heads and teachers from 9 preschools across Goa attended the training and **learnt about multiple intelligences** and how these 8 paths to learning can lead to truly inclusive education for all.

e) On **11th March 2017, Dr. Preeti Bakre, Sethu's consultant psychiatrist** and resource person for **Universal Active Mathematics**, conducted **Mathemagic**, for 25 teachers, parents and people interested in primary school education. This workshop showed how Maths can be made fun, enabling a proper understanding of number concept, place value and other mathematical operations through learning by doing.

f) **Sethu staff** were resource persons at the **Continuing Rehabilitation Education** program organized by **Sanjay School,** Alto Porvorim for special educators on **16th March 2017**. The theme was **Multiple Disabilities** and various topics like **use of Alternative Augmentative Communication, Behavior Management and Sensory Integration** were covered.

g) On **24th March 2017, Dr. Nandita de Souza** addressed over 100 Headmasters of Government and Aided schools at a program organized by the Goa State Commission for Protection of Child Rights in collaboration with Sarva Shiksha Abhiyan, Goa. She spoke on **Learning, Behavior and Success,** emphasizing that it is only through the practice of inclusive education that schools in Goa can offer successful outcomes to all students.

h) **IMA Tiswadi** organized a talk **on Anger Management in the Home by Dr. Nandita de Souza on 31st March 2017**. She shared strategies for effective discipline and anger rules which everyone in the home should follow. It is normal to experience anger.
However the **3 rules** we should always follow are **1) Do not hurt yourself 2) Do not hurt others and 3) Do not hurt property.**

As Sethu enters the new financial year 2017-18, the organization is gearing up for a massive fundraising drive to raise Rs. 5 crores for a permanent home for its work. To find out more about the Build Our Bridge campaign and donate, do check out the Sethu website www.sethu.in.

The speech therapist talking about AAC approaches to special educators at the CRE program on Multiple Disabilities at Sanjay School, Alto Porvorim

Teachers present a demonstration multisensory class at CLAPS workshop for preschool teachers

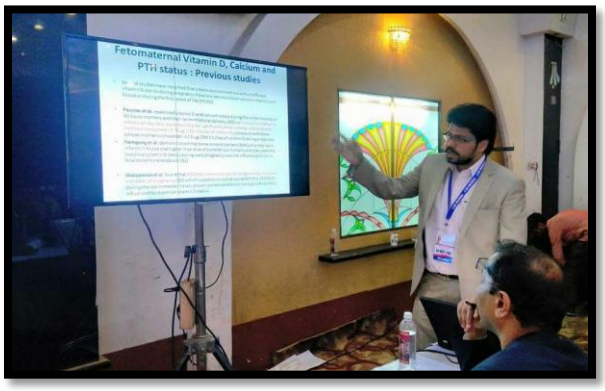
14. <u>Activities conducted at Goa Medical College by our Members</u>

- **World Down Syndrome** day was celebrated at **Goa Medical College on 21st March 2017**.

The celebration was held at the library auditorium.
Dr.Mimi Silveira welcomed the chief guest **Dr Steven Rodrigues** , Head of department Pedodontics.
Dr Mimi also welcomed the Down Syndrome children and their parents .She pointed out that identification of the talents in this children and training them would benefit their overall development.
The special guests **Mrs. Lian Gama**, in charge of **Atma Vishwas School for Vocational Rehabilitation** in Verna spoke on the different opportunities available for the differently abled children.
Miss. Samantha, PE teacher and Special Olympics guide, highlighted the importance of sports and training them in them.
Mr. Savio D'Gama, a **Down Syndrome adult**, who has received **National award for playing Guitar** was felicitated on the eve .He displayed his talent by playing exceptionally.
Vishram was also felicitated on the occasion; He has won the **Gold Medal at the Special Olympics in Los Angeles USA in 2015** and has down syndrome.
Dr. Steven, spoke of Dental Health and hygiene in the Down Syndrome patient s.
There were some dance performances by some Down syndrome patients.
The vote of thanks was given by **Dr. Aparna Wadkar**; administrative in charge of Pediatric Neuro-rehabilitation Centre.

World Down Syndrome Day celebrated at GMC

- **Dr. Ashwin Sardesai** presented a paper at **Pedicon 2017** on ***Correlation of Cord blood Vitamin D with Parathyroid hormone, Alkaline phosphatase and Calcium status of newborns.***



Knowing our Member: *Dr. Mimi Silveira*

1. **When is your birthday?**
   - 10th September

2. **What does you name mean?**
   - My actual name is Maria da Piedade which means Mary of Piety. Mimi is my pet name.

3. **Why Peadiatrics?**
   - I love children. I typically get "my fill" each day at work. It's the joy of seeing them go from sick to well.

4. **What do you like most about your profession?**
   - The fact that it rewards you with long – term relationships that you build with children and their families who everyday make you feel like a small hero. It is also very challenging. It often feels like searching for a needle in a haystack!. Hidden in a sea of URI's, fevers, rashes etc. there could be another more serious malady.
     There are enough cases to keep you on your toes to make everyday clinics interesting.
     It also gives me a chance to be an educator, which I love.

5. **If not a doctor, what would you have been?**
   - I know it is a cliche but yes I would have chosen engineering for I love to watch the working of things, the how and Why-- as now I am fascinated by the way they are building the bridge over the Mandovi.

6. **Your favourite hobby? Would you like to pursue it as a Profession?**
   - My favorite hobby is cooking, but for pleasure. The kitchen is my research laboratory & my excitement starts with the planning of a party!

7. **What is your favourite cuisine and eat out place?**
   - I enjoy continental food the most.
     At the moment my favourite eat out place is Maracas & Barcode both in Porvorim.

8. **Besides Goa if you had been given an option to live somewhere else it, where would it be?**
   - In Bangalore.

9. **Your most treasured memory?**
   - That's a tough one! There are so many…..The children's first smile! Their graduation…. Our lovely holidays and trekking expeditions with Edgar…..

10. **Your worst nightmare?**
    - The day two of my kids fell into the swimming pool & it was just my maternal instinct that saved them.

11. **Your 5 most cherished possessions?**
    - They are not my possessions but what I cherish the most in my life are my children.
      I am not too attached to anything in particular but I love my garden and my house.

12. **What creatures/things scare you?**
    - COCKROACHES! - the flying ones.

13. **What irritates you most?**
    - Not being a "Doer"

14. Your strongest personality trait?

- I think I am approachable, adaptable, agreeable, open conscientious.

15. What is your Definition for a) Being Famous and b) Being Successful?

a) Being famous: Means having a widespread reputation usually of a favourable nature, being renowned.
b) Being successful: For me being successful means having values in life that make you a happy person. Having a life full of joy & happiness with my family, being able to see the "Wow" in most of the things.

16. What are you most thankful about in your life?

- I am most thankful for being blessed with wonderful, caring & responsible children.

17. If you were given power to change what would you change in a) World b) India c) Pediatrics?

a) World: The consumerism plaguing the society today.
b) India: The level of cleanliness
c) Paediatrics: Strengthen Peripheral Centres and have home visits to detect health issues early and even prevent them. In the medical college teach skills with simulators so that children are not hurt by inexperienced trainees.

18. Your best childhood memory?

- Having a roomful of mangoes & eating them morning, noon & night!!

19. Your most favourite games in Childhood?

1) Gulli danda
2) Tennikoit
3) Badminton

20. Who inspires you most, in other words who is your Idol?

- Undoubtedly my father!

21. What comprises of an ideal Vacation?

- An ideal vacation is one where you go around, exploring, relaxing, meeting new people, eating OMG!!Yes trying new cuisines!. I simply love that on a vacation!, having fun and enjoying things around you in the company of family and friends.

22. What you prefer?

- Messaging/Calling up: Calling up
- Watching a movie or watching a drama: Love theatre better but unfortunately there are not many
- Vacation at a hill station or beach or safari: Safari
- Read a book/ Watch TV: Love reading a book but lately been watching TV instead.
- Facebook/Whatts App/ Twitter/ Snapchat/ Instagram: WhatsApp
- Travel by car/plane/bus/train/cruise: Cruise. I love the water

23. If you could go back in time, which year would it be?

- Don't know really

24. If a Genie granted you 3 wishes what would you ask for?

1) Good Health
2) My family's happiness
3) Ability to travel and see places

25. Do you have a Bucket list? What hits the list?

- Not really. I don't have a bucket list. At one point visiting Switzerland was a must. I have only managed to see it from the sky and the airport!

26. Do you talk to yourself?

- No.

27. Is crying or venting out your feelings a sign of weakness?

- No. Not at all

28. Advice to GenX Peadiatrics?

- Not to lose touch with humaneness and clinical acumen.

29. What is your favourite quote?

- I often tell my residents that **"The eyes will see what the mind knows".**

But I love the following quote, "**I slept and dreamt that life was all joy, I awoke & saw that life was but Service. I served and understood that service was Joy"**. It is by R. Tagore

30. How do you want people to remember you?

- I would like people to remember me as a happy person whose smile brought joy and solace to those around; someone who strived to do her bit to alleviate children's suffering & someone who took pride in the achievements of her students.

Medical Quiz:

1. A 3 week old male, newborn was brought to the clinic by mother for routine checkup.
   BABY IS EXCLUSIVELY BREAST FED. Mother is a vegan. Plans to exclusively breast feed the child till 6months then wean to solids – Vegan diet.
   Which vitamin deficiency is the child mostly likely susceptible to?

2. Identify the case:

3. What is A-A-B-C Approach?

4. Choose the right answer:
   Short lasting and self limiting skin lesions
   a) Measles
   b) Sepsis
   c) Steven Johnson syndrome
   d) Kawasaki disease

5. Amongst abnormal body odours, in which condition do you get Putrid body odor?

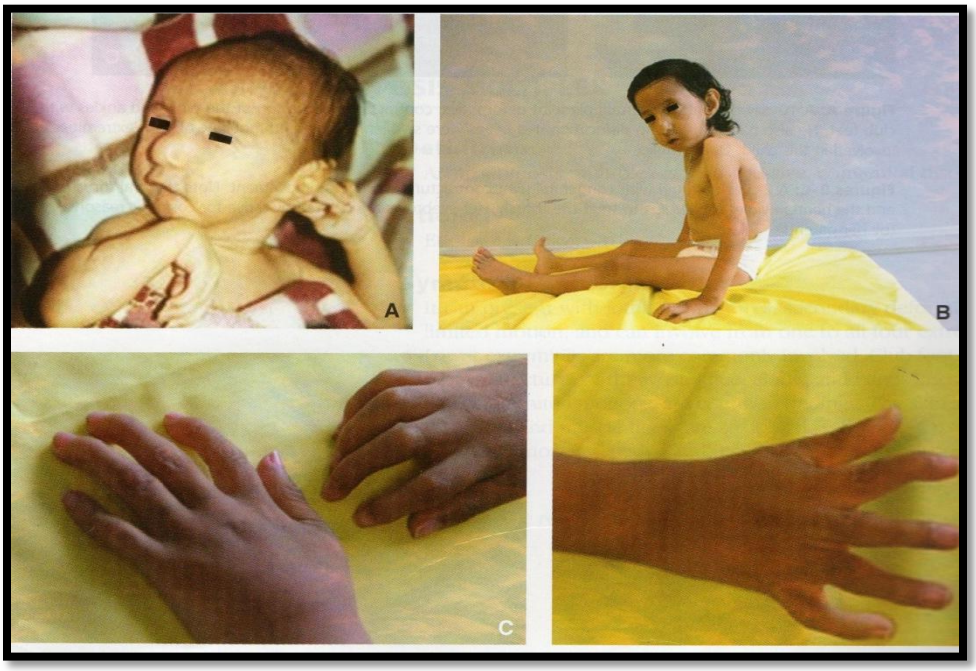
6. Complete the sentence:
   - Fabrey's disease presents predominantly with_____

7. A case of unknown substance abuse was admitted in the casualty. The child was 11 years old. She was noted to be drowsy with incoherent speech and excessive salivation. There were multiple puncture marks on her hands.
   Besides she was shabbily dressed and intermittent facial muscle twitch was noted.
   On examination she had marked bradycardia with hypotension with respiratory distress. Mother gave history that she used to visit the fields regularly. What is the possible diagnosis?

8. On a Chest Xray brought to the clinic of a child suffering from congenital heart disease following were the findings:
   - Cardiomegaly
   - Apex beat mid clavicular line at LV
   - RAE: Absent
   - LAE: Absent
   - PVH: Present

   What could be the heart lesion?

9. This is 1 month old, term at bith with IUGR with IDM. Head circumference and weight are in 10th percentile currently, height is in 50th percentile. Child has prominent ear crus with short palpbral fissures, epicathal folds, prominent bulbous nose, nigh nasal bridge and micrognathia. His Karyotype is normal. On follow up at 3 years of age, following features were prominent Arachnodactyly, Clinodactyly, camptodactyly and pectus carinatum.
There was decrease range of motion at hips, knees and ankles woth abducted thumbs and decreased muscle mass in extremities. What could be the possible diagnosis?



10. **True or False**:

a) Intermittent intussuception is differential diagnosis of GERD
b) Congenital Hyperinsulinemia is due to genetic mutation
c) Hyperventilation helps compensate Metabolic alkalosis
d) One of the T's in the causes for Cyanotic Heart disease is Tetra logy of Cantrell
e) DFX (Desferrioxamine) has poor bioavailability and low GI absorption
f) Enterococcus is one of the causes of LOS.

Send your answers without Googling or using any search aids to the siddhi.usg@gmail.com within 15 days of the bulletin release. Winners will be decided on Basis of First mail First Serve order.
The first one to send the all correct answer will win exciting Prizes.
Remember Honesty is the Best Policy. All the best!!!