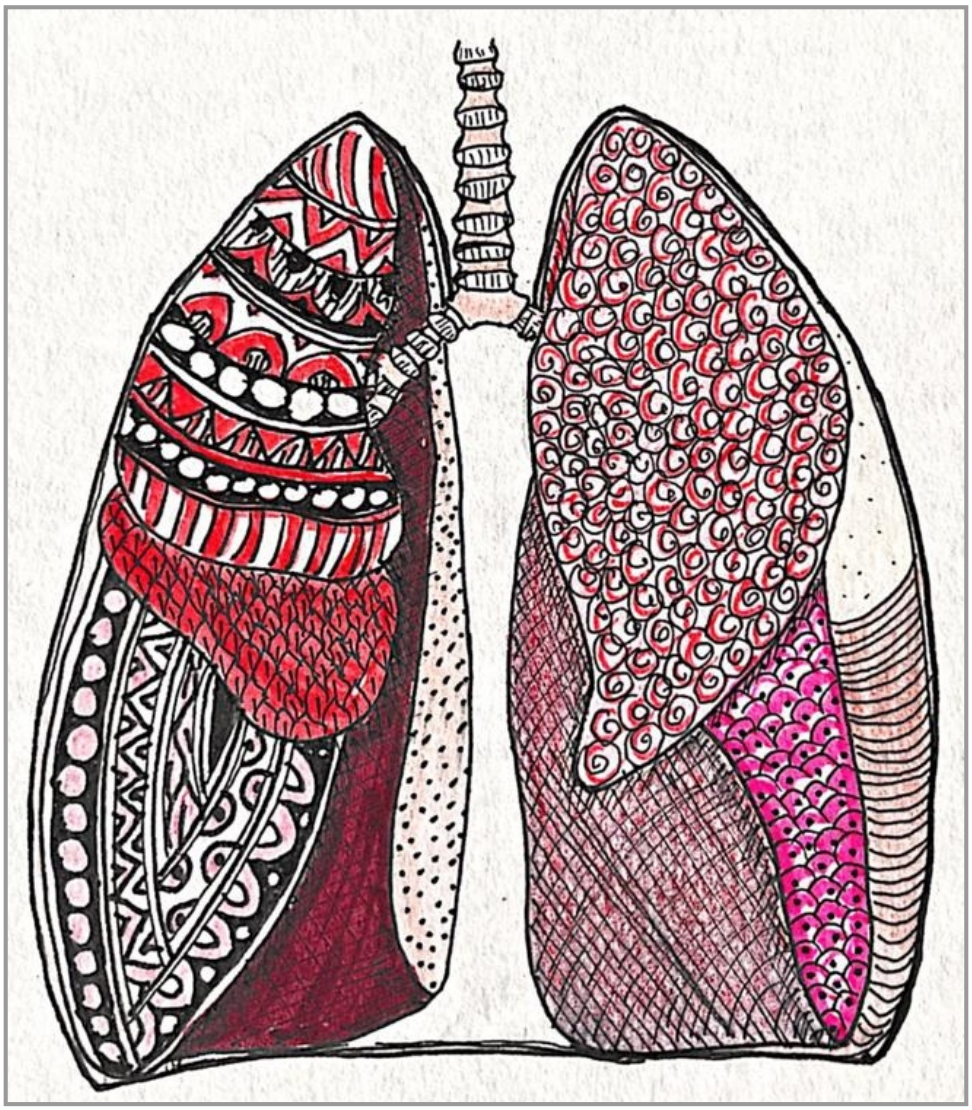
ISSUE - 3

IAP BPS

PEDISCAN

MONTHLY NEWSLETTER OF

IAP BANGALORE - BPS



Art by Dr. Gowri

MARCH - 2023

Its finally spring

Spring has set in,the days are longer,flowers are in full bloom, and theweather is warming up.Children are coping with exams and we are coping with the flu season and here's hoping that summer will bring an end to both!

The month began with events being held at teaching hospitals and medical colleges to increase awareness on World Obesity Day. This was followed by International Women's Day and our own Dr Sumitha Nayak was celebrated as Woman Achiever 2023 by the Federation of KarnatakaChamber of Commerce and Industry.

We have been experiencing an increase in number of viral illnesses from measles and chickenpox to influenza and adenoviruses. So many of our colleagues have been raising awareness in the public on the importance of timely vaccinations and keeping children healthy. Dr Chidananda, Secretary, IAP BPS brain stormed with the District Task Force on measles eradication.

International Adolescent Health Week (IAHW) was March 19-25thand the Bangalore Adolescent Heath Academy (BAHA) celebrated with their usual zeal and enthusiasm. This year's theme was With and For Adolescents: Building a Healthier and More Inclusive Future. We had adolescents and young adults from schools and colleges, including our medical colleges, participate enthusiastically and share with us their opinions on challenges that they face. It was heartening to see them also come up with their own solutions to these challenges. We just need to support them in their endeavors! A special shout out to BMRCI and their PG students guided by Dr Gayathri Devi and Dr Sosale for the number and quality of the events conducted this year.

The last day of the IAHW was also the inaugural day of the Karnataka state branch of the Adolescent Health Academy. Dr Kishore Baindur, Dr Prema and Dr Sosale were installed as the first office-bearers. Drs Sudharshan, Padmavathi and Gayathri were installed as Team BAHA 2023. Here's wishing them a very successful tenure!

We ended the month on a high note with the monthly PG teaching program at theMazumdhar Shaw Medical Centre, Narayana Health City where the practical aspects discussed and hands-on training were a boon for the students. This was followed by a fun and educative evening on pulmonology with a Xray quiz by Dr Subba Rao, a discussion on atypical pneumonia cases by Dr Nagabhushan and case presentation by Dr Divya Raghavendran.

In this issue we focus on Pulmonology. We bring you the 2022 GINA guidelines for asthma management in simplified manner and newer treatment options for asthma. Dr Vandana.BGiriddar and Dr Ramesh Santanakrishnan give us management guidelines on empyema thoracis in children.Weekend Musings by Dr Vinay KumarKonamme,pediatric surgeon, conveysto us the practical difficulties in achieving a balancedpersonal and professional life. The issue is filled with lot of varied and interesting topics, hoping to keep you glued.

Dr. Poornima
Editorial Team 2023, IAP BPS

GINA 2022 Update

Dr. Sowmya Natarajan
Consultant Paediatrician
Allergist and Immunologist.
Sanjeevini Specialist Clinic &
Motherhood Hospitals.

Objectives

1. Classify patient's symptoms to help in guiding step up/down therapy.
2. Role of spirometry and allergy test in the diagnosis of asthma.
3. Assess new recommendations in GINA 2022.

Introduction

Asthma is a heterogenous major airway disease characterized by variable airflow limitation, airway inflammation and bronchial hyper- responsiveness resulting in wheeze, chest tightness, shortness of breath and cough contributing to > 300 million people suffering across the world. It affects both children and adults. It has a direct and indirect bearing on the economic impact, in terms of medication cost, ER/doctor's visit, missed school/work and decreased quality of life respectively.

Clinical diagnosis in office practice (Pointers)

1. Cough :
   - o Nocturnal, or early morning
   - o Exercise induced symptoms, if any
   - o Recurrent, persistent
   - o Any chest tightness
   - o Breathing difficulty
   - o Wheezing on auscultation

2. Document variable airflow limitation whenever possible
   - o Spirometry
   - o Peak flowmeter (inferior to spirometry)

Clinical diagnosis of asthma likely

a) 3 episodes of wheeze/year
b) Wheezing reversed with bronchodilator or spontaneously
c) Rule out other causes of wheezing

Diagnosis of asthma unlikely when

a) Less than 6 months of age
b) Wet productive cough
c) Fever, failure to thrive
d) Minimal or no response to bronchodilators

Co-morbid diseases to be identified :

- Ø Allergic Rhinitis
- Ø Obesity
- Ø Adenoid hypertrophy
- Ø GERD

Triggers to be identified:

1. Aeroallergens- House dust mites, pollen, fungi, cockroach, pet epithelia
2. Irritants- Smoke, diesel exhaust, environmental tobacco smoke, mosquito repellants

Tests for diagnosis

1. SPIROMETRY recommended in children above 6 years of age.

-FEV1, FEV1/FVC ratio, FVC
(FEV1 will be reduced in asthma)
-Bronchodilator reversibility: to look for increase in FEV1> 12% and /or increase by 200ml - post bronchodilator (measured 15 minutes after administration of salbutamol 200 -400microgram MDI)

2. PEAK FLOW METER
-Good for monitoring in office practice
-Helps to decide further management
-Not ideal for diagnosis, has low sensitivity

TREATMENT

To start treatment, we should assess level of control first.

Level of control has 2 components.

1. Symptom control
2. Future risk of adverse outcomes

Table 1- Symptom control> 6-11 years

Assessment of symptom control: Yes/No	Level of Asthma control
In past 4 weeks, patient has had	Well controlled – None
1. Daytime symptoms > twice/ week?	Partly controlled – 1or 2 of these
2. Any night waking due to asthma?	Uncontrolled – 3 or 4 of these
1. SABA reliever needed >twice/week?	
4. Any activity limitations?	

Table 2. Symptom control in < 5year olds

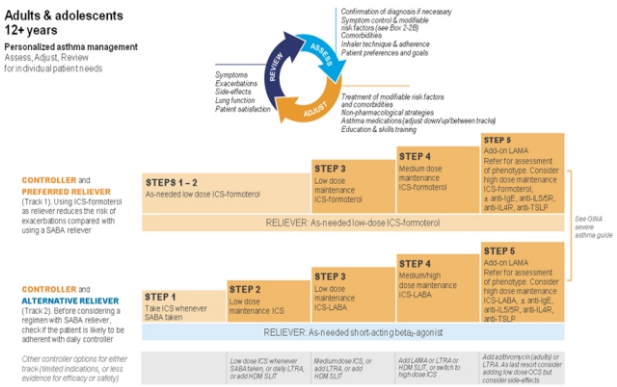
Assessment of symptom control: Yes/No	Level of symptoms of control
In the past 4 weeks, has child had	Well controlled: None of these
1. Daytime asthma symptoms more than few minutes, more than once a week?	Partly controlled: 1or 2 of these
2. Any activity limitation due to asthma?	Uncontrolled: 3or 4 of these
3. Reliever medication needed more than once a week?	
4. Any night waking or coughing due to asthma?	

Assessing new recommendations in GINA 2022

Background - the risks of Short Acting Beta Agonist(SABA)-only treatment

1. Regular use of SABA, even for 1–2 weeks, is associated with adverse effects.
2. Higher use of SABA is associated with adverse clinical outcomes.
3. Dispensing of ⩾ 3 canisters per year, i.e., daily use, is associated with higher risk of severe exacerbations (Stanford, AAAI 2012; Nwaru, ERJ 2021)
4. Dispensing of ⩾ 12 canisters per year is associated with much higher risk of death (Suissa, AJRCCM 1994; Nwaru, ERJ 2021)
5. Inhaled corticosteroids reduce the risk of asthma deaths, hospitalization and exacerbations requiring oral corticosteroids (OCS) (Suissa, NEJM 2000 & 2002; Pauwels, Lancet 2003) but adherence is poor, particularly in patients with mild or infrequent symptoms

GINA treatment figure for adults and adolescents (⩾ 12 years)



Asthma Treatment tracks in adolescents and Adults

Track 1 – Reliever is with low dose ICS-formoterol.

- Preferred strategy due to the evidence that using low dose ICS-formoterol as reliever reduces the risk of exacerbations as compared with SABA as a reliever.
- In step 3-5 ICS-formoterol used as controller treatment called as maintenance and reliever therapy (MART)

Track 2 - SABA as the reliever, is an 'alternative' (non-preferred) strategy.

- Less effective than Track 1 for reducing severe exacerbations.
- Use Track 2 if Track 1 is not possible; can also consider it if a patient is highly adherent with their controller and has

had no exacerbations in the last 12 months.

- Before considering a regimen with SABA reliever, consider whether the patient is likely to be adherent with ICS- controller therapy otherwise at risk for exacerbations with SABA-only treatment.

Other controller options

These have limited indications, or less evidence for efficacy and/or safety than Track 1 or 2 options.

Table 3 : Low, Medium and High dose of Inhaled Corticosteroids for 12yrs and above

Inhaled corticosteroid			
Adult and Adolescent	Low(mcg)	Medium(mcg)	High(mcg)
Beclomethasone dipropionate	100-200	>200-400	>400
Budesonide (DPI)	200-400	>400-800	>800
Fluticasone propionate (DPI)	100-250	>250-500	>500
Fluticasone propionate(HFA)	100-250	>250-500	>500
Triamcinolone acetonide	400-1000	>1000-2000	>2000

Indications of regular controller treatment in children aged < 5 years with asthma.

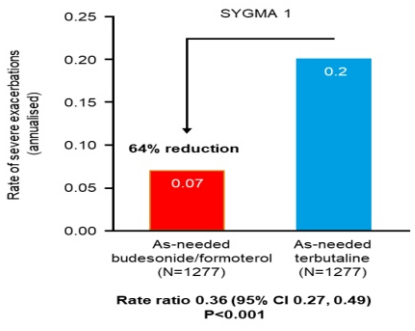
Goal of asthma management in young children is to attain good symptom control, maintain normal activity levels, and reduce the risk of future asthma exacerbations.

Intermittent or episodic wheezing of any severity can be caused by an episodic viral-induced wheezing episode, a seasonal or allergen-induced asthma, or an uncontrolled asthma. For all of these conditions, wheezing is initially treated with a short acting beta-2 agonist (SABA) every 4-6 hours as needed until symptoms resolve, usually within 1-7 days. If there is doubt about the use of additional drugs in these children, especially when the nature of the episode is unclear, we may have to initiate controller/preventor treatment. The indications include:

- Ø Regular controller treatment should be started, and the response should be assessed if the history and symptoms pattern indicate an asthma, respiratory symptoms are uncontrolled, and /or wheezing episode are frequent (e.g.,>3 episodes in a season).
- Ø Regular controller treatment might be considered if a child presents with less frequent but more severe episodes of viral-induced wheezing.
- Ø A trial of regular controller treatment should be considered to determine whether the symptoms are caused by asthma, if the diagnosis of asthma is uncertain, and inhaled SABA therapy or courses of antibiotics need to be repeated frequently, e.g., more than every 6-8 weeks. At this stage, the patient should be referred for specialist advice.

As-needed low dose ICS-formoterol in mild asthma (n=9,565) compared with as-needed SABA : The risk of severe exacerbations was reduced by 60–64% (SYGMA 1, Novel START)

Compared with maintenance low dose ICS: The risk of severe exacerbations was similar (SYGMA 1 & 2), or lower (Novel START, PRACTICAL)

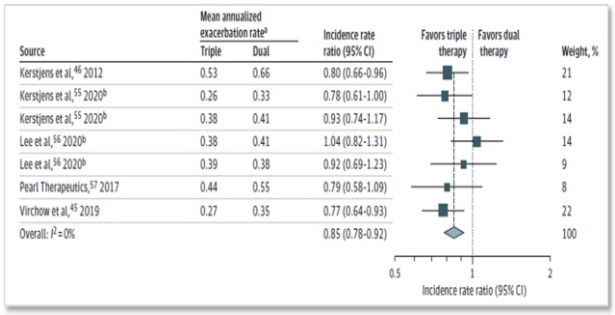


(Budesonide-formoterol 200/6 mcg, 1 inhalation as needed for symptom relief)

Other changes in medication recommendations for ⩾12 years

- Long-acting muscarinic antagonists (LAMA) should not be used as monotherapy for asthma ,i.e., without ICS, because of increased risk of severe exacerbations (Baan, Pulm Pharmacol Ther 2021)
- Adding LAMA to ICS-LABA: GRADE review and meta-analysis (Kim, JAMA 2021):
- Small increase in lung function (mean difference 0.08 L)
- No clinically important benefits for symptoms or quality of life do not prescribe for dyspnea
- Modest overall reduction in exacerbations compared with ICS-LABA (risk ratio 0.83 [0.77, 0.90])

Patients with exacerbations should receive at least medium dose ICS-LABA before considering add-on LAMA.



Management of asthma in low- and middle-income countries

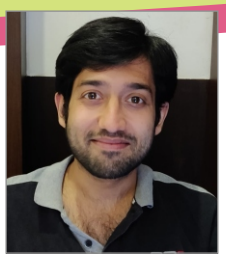
- 96% of asthma deaths are in low- and middle-income countries (LMIC) (Meghji, Lancet 2021)
- Much of this burden is avoidable, especially with ICS (e.g., Comaru, Respir Med 2016)
- Barriers include lack of access to essential medications, and prioritization of acute care over chronic care by health systems (Mortimer, ERJ 2022)
- Oral bronchodilators have slow onset of action and more side-effects than inhaled.
- Oral corticosteroids are associated with serious cumulative adverse effects (e.g., sepsis, cataract, osteoporosis) even with occasional courses (Price, J Asthma Allerg 2018)

GINA suggests :

- In the meantime, if Track 1 is not available due to lack of access or affordability, Track 2 treatment may be preferable, although less effective in reducing exacerbations
- If Track 2 options also not available, taking ICS whenever SABA is taken may be preferable to LTRA or maintenance oral corticosteroids because of concerns about efficacy and/or safety.
- Greatest overall benefit would be from increasing access to ICS-formoterol.

GINA states that it is not acceptable in 2022 to manage asthma with SABAs and oral corticosteroids instead of preventive ICS-containing treatments.

Weekend Musings of a Pediatric Surgeon….!



Dr. Vinay Kumar
Konamme, Pediatric Surgeon
Bangalore.

Tired and hungry after performing a day-long surgery on a Saturday evening, every bite of my home packed lunch seemed very satisfying. After completing the post operative evening rounds, my lovely wife and I left for our house located about 25 kilometres away for a two hour long journey on Bengaluru's traffic-laden highway.

Dinner was ready to be served as soon as we reached home at 8.30 pm. With the weekend approaching, I was excited to play tennis the next morning with a friend. My wife and the family also had their own plans and demands on my time and attention. The weekend seemed packed as much as exciting. As we were animatedly discussing the nuances of the next day, I received an emergency call from a junior colleague.

He stated in a matter of fact manner "Sir, we have an eight year old boy who developed shortness of breath after consuming fish this morning. The X-ray chestisinconclusive. However there is a possibility of a foreign body bronchus. I feel he needs an emergency bronchoscopy." I responded with a resigned tone "Alright, get things ready and inform the anesthetist and I will be there as early as possible.
Shift the child once the OT is ready."

As the traffic was slowly settling later that night, the commute took me about an hour and by then, the child was wheeled into the operation theatre following which he was anesthetised and was infused with the routine muscle relaxants. Following this,I intubated the child and inserted the bronchoscope to visualise the trachea and do the needful.

I ran a commentary to the team as I proceeded with the bronchoscopy: "Tracheaclear, no foreign body seen. I am now progressing to the right side. Main bronchus, upper lobe, middle lobe and lower lobe bronchi clear and there is no foreign body in the right chest and therefore am with drawing the scope back into the trachea and will slowly now advance to the leftside. Main bronchus, upper and lower lobe bronchiclear. On withdrawal, I checked for any fish bone stuck in the oropharynx.
…Negative again..!"

I finally declared "There is no foreign body or any intrinsic obstruction. We shall transfer him over to the medical side for further work up and management". I thanked all the staff for their co-operation and got ready to go home so that I could spend my left over weekend eve with my family.

As I was leaving I pondered "What did we achieve by this exercise? Was it justan unnecessary drill and a waste of time? Did I ruin my family's weekend plans? Will they understand my predicament?"

And thereby reflected on some facts of the various aspects of foreign bodies in the airway.

With regards to the parents, irrespective of their level of education or health awareness, they find it distressing to watch a helpless child with difficulty in breathing or

producing sounds with each breath. The symptoms and signs of an airway foreign body are often very subtle and the X-ray may show indirect evidence of a foreign body or nothing at all. CT scan may not be advisable in an urgent situation.

Hence, the index of suspicion for a foreign body aspiration should be very high as the mortality of an unsuspected FB is unpardonable. **Thus, the indication for bronchoscopy is just a suspicion and not necessarily a firm diagnosis of a foreign body.**

I reflected on several instances in the past and the innumerable anecdotes of my seniors, where a timely intervention saved scores of children. The satisfaction of foreign body removal and saving the life of a little child is unparalleled in the clinical practice of a paediatric surgeon.

It is always better to be safe than be sorry. There should neither be any hesitation for a pediatrician to refer a child with a suspected foreign body nor for a surgeon to do a bronchoscopy. Any personal or family matter can wait and prioritising this takes precedence over everything else in the life of a paediatric surgeon.

So, a negative bronchoscopy is not a negative feeling but a positive feeling that we ruled out a common cause of respiratory distress with certainty and that the further work-up and management will be smoother for the pediatrician.

A sense of pride and satisfaction came across my mind and so I decided tore-work my Sunday schedule.

It is indeed atruism that the child's safety is the top priority for a pediatrician and a pediatric surgeon.

Current Guidelines in the Management of Empyema Thoracis in Children

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INTRODUCTION:

The healthcare burden of pediatric empyema is significant; it is a major contributor to hospitalisation and surgical treatment in children. About 40% of all bacterial pneumonias are complicated by parapneumonic effusions, of which 5-10% are likely to evolve into empyema.There is limited data on the exact incidence of empyema in India, but a study published in The Lancet Respiratory Medicine (2017), estimated the incidence of empyema in children <15 years in low- and middle-income countries to be around 3.6 cases per 100,000 children per year.

DEFINITION:

Empyema is defined as the presence of pus in the pleural space,or presence of micro-organisms in the pleural fluid detected by smear or culture.

In the absence of micro-organisms, diagnosis is made with the following criteria:

- pH of pleural fluid <7
- LDH > 1000 IU/L
- Glucose < 40mg/dl
- Lactate > 45mg/ml

PHASES OF EMPYEMA: The evolution of pleural infection is divided into 3 stages. The stages are not sharpy delineated and are actually a continuumwith considerable overlap. The 3 stages are:

1. Exudative phase (1-3days) – This is the body's immediate response to infection characterised by outpouring of fluid into the pleural space. It is a simple parapneumonic effusion which is sterile, with normal pH and glucose. The fluid is very thin and serousand its cellular content is low. The lung is still easily re-expandable.
2. Fibrino-purulent phase (4-21days) – Large numbers of neutrophils and fibrin accumulate in the fluid. The effusion becomes purulent and viscous,pH and glucose fall and LDH level rises. Progressive formation of loculi and limiting membranes occur. Gram's stain and culture may show microorganisms.
3. Organising phase (>21days) - Fibroblasts grow on the pleural surfaces and form an inelastic membrane called “PEEL”. This peel interferes with the penetration of drugs and also causes lung trapping. This clinical picture is most characeristically seenin Staphylococcal infections.

INVESTIGATIONS AND DIAGNOSIS:

Empyema should be suspected in any child with diagnosed pneumonia who does not shows signs of improvement and continues tohave fever spikes even after 48 hours of appropriate antibiotic treatment.

Investigations which help in the diagnosis include:

- Baseline - Blood counts, CRP
- Diagnostic microbiology - Sputum culture, blood culture, pleural fluid culture and Gram's stain
- Pleural fluid analysis –Cytology, LDH, pH,glucose

Chest X-ray PA (erect) is usually the first-line radiological investigation. Obliteration of costophrenic angle or Meniscus sign (thin rim of fluid ascending the lateral chest wall) are early signs of pleural effusion. Sometimes, a lateral decubitus view may be useful in detecting minimal effusion and is a better alternative to a supine AP picture (in which the fluid is spread all over the chest without any demarcation).

USG Chest: should be performed on all children with empyema. It is the best technique to differentiate between pleural fluid and consolidation. USGcan also:

- estimate the amount of fluid, echogenicity of fluid and grade complexity
- demonstrate the presence of fibrinous septations
- provide a guide for thoracocentesis or ICD placement
- but cannot reliably establish the stage of empyema

CT Chest: CT has a role only in complicated cases and is useful in cases with underlying lung problems. However, if surgery is being considered, a CECT is absolutely indicated todelineate the anatomy and as a road map for surgery.

MANAGEMENT:

All children with parapneumonic effusion or empyema should be admitted to hospital for further management.

Early initiation of treatment reduces length of illness and duration of hospital stay.

Proper counselling of parents regarding treatment options and prognosis forms an integral part of the management. The 4 pronged approach to treatment of empyema is as follows:

I. Intravenous Antibiotics

All children with empyema require intravenous antibiotics. Whenever possible, antibiotic choice should be guided by microbiology results. However as many cases are culture negative, the initial empirical antibiotic treatment is often continued, especially if clinical improvement is seen. There are no data from randomised trials on the appropriate length of treatment and no data on whether different organisms require different durations. Antibiotic choice also depends on whether the empyema was secondary to a community or hospital acquired pneumonia, whether it is postoperative or following trauma, and whether aspiration is likely to have occurred.

- Choice of antibiotics should cover Streptococcus pneumoniae and Staphylococcus aureus - 3rd generation cephalosporins or extended spectrum penicillins are the common choices.
- Broad spectrum and Gram negative cover is required for hospital acquired infections, as well as those secondary to surgery, trauma, and aspiration (piperacillin, carbapenems).
- Change antibiotics if indicated, once culture reports are available.
- Continue antibiotics till the child is afebrile or intercostal drain is removed. Oral antibiotics should be given for 1- 4 weeks, or longer if there is residual disease.
- Tuberculous empyema can result from progressive pulmonary tuberculosis. It has been reported to account for up to 6% of all empyema cases worldwide – anti-tubercular therapy should be started if there is strong circumstantial evidence + microbiological evidence of Tb.

- Mycoplasma is a rare cause of empyema and a macrolide need not be included routinely in the empiric antibiotic combination.

Commonly used antibiotics in empyema include:

(A) Following community acquired pneumonia

- Cefuroxime
- Co-amoxiclav
- Penicillin and flucloxacillin
- Amoxicillin and flucloxacillin
- Clindamycin (patients allergic to penicillin can be treated with clindamycin alone)

(B) Hospital acquired pneumonia and following surgery/trauma/aspiration

Broader spectrum agents are indicated to include cover for aerobic Gram negative rods – eg.piperacillin/tazobactam or meropenem, indicated by local antibiotic policy.

(C) Mycobacterium tuberculosis

Mycobacterial treatment should not be started empirically unless there is very strong circumstantial evidence. Every effort must be made to establish a microbiological diagnosis, Adherence to the BTS guidelines is recommended, and a tuberculosis specialist should be involved in the care.

I. Intercostal Drainage-

Tube thoracostomy is the least invasive and most common non-surgical modality for the treatment of empyema. Both the ACCP (American College of Chest Physicians) and the BTS (British Thoracic Society) guidelines recommend that the pleural space should be drained in all patients with exudative effusion with pleural fluid pH < 7.2 and in those who have frank pus in the pleural space. Intercostal drains (ICD) should be inserted only by adequately trained personnel, preferably under ultrasonographic guidance in order to reduce the risk of complications. The ICD should be inserted under intravenous sedation and close monitoring.Traditionally, rigid large bore drains have been used, though recent studies suggest that the position of the chest tube is more relevant than its size.

The site of insertion is ideally in the mid axillary line through the safe triangle - the boundaries of which are :

- Superiorly: apex of the axilla
- Anteriorly: lateral border of pectoralis major
- Posteriorly: mid axillary line (Previously: latissimus dorsi anterior border)
- Inferiorly: a horizontal line drawn at the level of the nipple

Chest X-ray should mandatorily be done after ICD insertion to confirm the position, after which the tube is secured with sutures.

Low pressure suction 5-10cm of H2O may be used if lung expansion is not adequate.

The maximum volume of fluid that may be drained is 10ml/kg in small children or a maximum of 1.5 litres in older children. The ICD is removed once the drainage is < 50 ml in 24 hours or ifvisible re-expansion of the lung is seen on chest radiography.

III. Role of Fibrinolytics:

The role of intrapleural fibrinolytic agents is equivocal, but they have been shown shorten hospital stay and need for surgery

when used in combination with tube drainage. They are recommended in children with thick empyema or effusion with loculations.They are most useful when used in the fibrino-purulent stage of empyema. Fibrinolytic drugs work by lysing the fibrinous strands in loculated empyemasand help to re-establish the normal dynamics of pleural fluid circulation.

Urokinase, Streptokinase and Alteplase (TPA) are the agents available. Only Urokinase has been approved for use in children. Urokinase is used at a dose of 40,000U/kg in 40 ml of saline every 12 hours, instilled via the ICD. A maximum of 6 such doses may be given. Side effects include hypersensitivity reactions and few reports of increased bleeding.Chest radiography must be repeated after 3 doses to look for response.

IV. Role of Surgery and Pediatric Surgeon:

Surgical consultation should be sought in multi-loculated empyema or when the ICD fails. Indications for surgery are:

a)failure of ICD, antibiotics, fibrinolytics

b)persisting sepsis beyond 7 days of antibiotics

c) persisting pleural collection despite chest tube drainage or complex or delayed empyema

d) broncho pleural fistula with pyopneumothorax

e) anaerobic infection, scoliosis and lung entrapment

CECT chest is mandatory before surgery to see the thickness of peel, underlying lung pathology and lung anatomy.

Surgical options for the treatment of empyema are:

1. VATS - Video-assisted thoracoscopic surgery (VATS) is a minimally invasive surgical technique that allows for direct visualization and evacuation of the infected pleural space. Though there is no consensus yet on the optimal timing of VATS, it is suggested that, in advanced stage empyema VATS has superior outcomes when compared to tube thoracostomy. Early VATS aids drainage of fluid under vision and lung expansion. VATS may be difficult to perform later in the course of the disease due to the thick peel and also after fibrinolytic therapy due to the loculi becoming very adhesive.

Contraindications to VATS - Thick PEEL, inability to develop a pleural window, and complex and chronic empyema.

2. Mini Thoracotomy - Debridement of the fibrinous material with evacuation of pus is done by an open procedure leaving a small thin linear scar.

Thoracotomy and Decortication - Persistent empyema refractory to standard therapies, including VATS, can lead to pleural scarring and fibrosis, adhesions, decreased lung compliance, and a restrictive lung disease pattern. These children should be considered for open window thoracostomy (OWT) with prolonged chest tube drainage or decortication. Delay in surgical intervention has been shown to be the most common predictor of conversion from VATS to thoracotomy. Decortication is also an option for lung re-expansion if symptoms are persistent 6 months after empyema resolution.

Follow up:

Children with empyema should be followed up until they are clinically and radiographically normal. Chest Physiotherapy with early mobilisation and

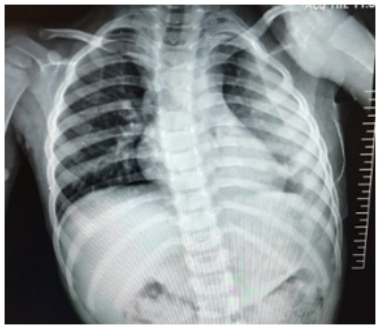
exercise is recommended after all interventions. Chest x-ray should be done at 4-6 weeks post procedure. Some children will require a CT chest after 3 months to ensure complete recovery.

Treatment failure:

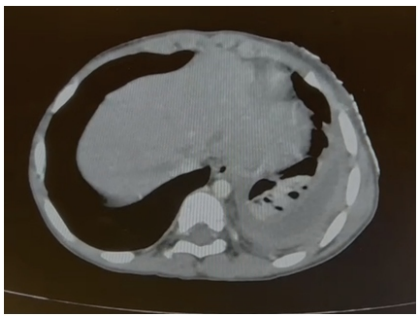
Persistent fever is the commonest indication of possible treatment failure, caused by either incorrect antibiotic choice or failure of the antibiotics to penetrate the infected lung tissue.Mal-positioning of the ICD is another frequent cause of treatment failure, which can be avoided by appropriate imaging and monitoring.

Complications of empyema such as cavitary necrosis, necrotising pneumonia, lung abscess and pneumatoceles can be seen on CT scans and are suggestive of treatment failure.

Bronchoscopy is indicated if there is persistent lobar collapse to rule out foreign body or mucus plug.



CXR PA: S/O of left empyema.



CECT Thorax: Suggestive of left pleural collection with thick enhancing pleura s/o empyema and underlying lower lobe consolidation.

Conclusion

Majority of cases of empyema in children are post-pneumonic and they contribute significantly to morbidity. Chest tube drainage, antibiotics along with intrapleural fibrinolytic are safe and effective methods of treating empyema thoracis in resource- poor settings and can reduce the need for invasive interventions. Patients presenting later in the clinical course and not responding to conservative management should be referred promptly for surgical intervention in order to improve outcomes.

Selected References & Further Reading:

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Newer treatment options for Asthma

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Newer treatment options for Asthma

Asthma is a dynamic disease with changing treatment options with every year, as and when the new evidence has evolved.

Clearly the direction is towards individualised treatment plans as per the phenotypic classification rather than general outline plans. With the evolution of the diagnosis of asthma, more and more diversity and dimensions have appeared for the phenotypic classification. Understanding of the appropriate biomarker for an endotype has helped improve precision in the diagnosis of Several phenotypes and tailored treatment. (1–3)

Inhaled corticosteroids, LABAs, LAMAs and LTRAs are established forms of treatment for Asthma, before stepping up treatment we need to consider inhaler technique, dose and adherence should be confirmed.

Add on treatments:

LAMA (Long Acting Muscarinic Agents); Tiotropium is an antimuscarinic M3 receptor blocker. It significantly improves lung functions and asthma exacerbations are reduced. All cause asthma and asthma emergencies were greatly reduced with the usage of LAMA as an add on treatment (4–7)

It also worked better than a placebo

It is also cost effective, as per NHLBI guidelines and GINA guidelines ICS-LAMA. Last accessed on 12th march 2022. combinations should be tried before considering Biologics.

Biologics:

Name	Mode of action
Omalizumab	anti-IgE
Mepolizumab, Reslizumab	anti-Il-5
Benralizumab	anti-Il-5 receptor
Dupilumab	anti-IL-4/IL-13 receptor
Tezepelumab	targets TSLP

Il - Interleukin, Immunoglobulin, TSLP-Thymic stromal lymphopoietin

Anti-Ig-E: Omalizumab can be used in moderate to severe persistent asthma >6 years of age, with Ig-E levels ranging from 70-300 IU/mL. It works best in T2 High asthma.(8,9)

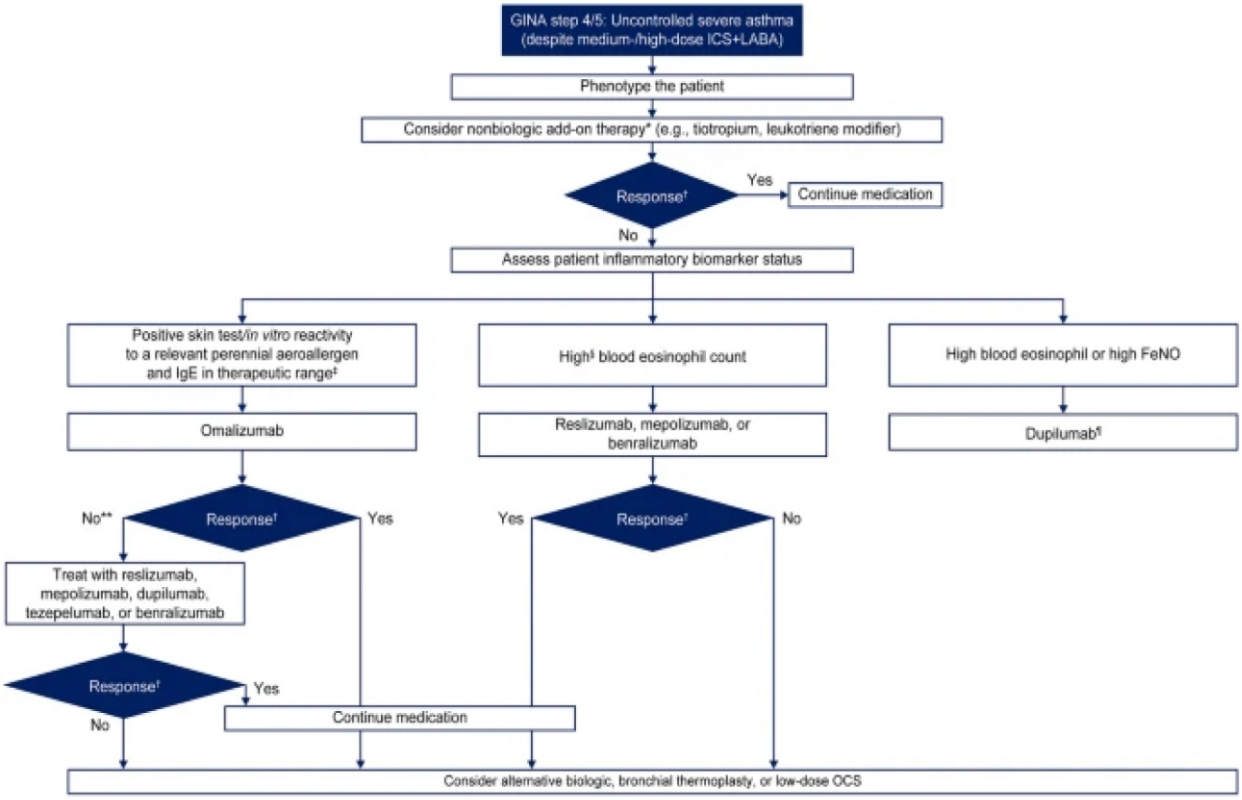
Mepolizumab and Reslizumab- These are considered as an add-on maintenance therapy in severe eosinophilic asthma. Mepolizumab is administered subcutaneously, reslizumab is only approved for intravenous administration.(10–12)

Benralizumab blocks IL-5 receptor α-subunit, hence preventing its attachment to the receptor. This is considered in children above 12 years, as add-on therapy for eosinophilic asthma that is >300 cells /µL. (13,14)

Dupilumab inhibits the IL-4 and IL-13 pathways, can be used in children above 6 years, moderate to severe asthma, even in those who are oral steroid dependent and irrespective of eosinophil count. (15–18)

Newer treatment options for Asthma

Algorithm to start biologicals:



Small molecules in asthma under investigation

Category	Drug	Route of administration	Clinical stage	Source
LAMA	Umeclidinium bromide (+ fluticasone furoate)	Inhalation	Phase 2b	https://clinicaltrials.gov/ct2/show/NCT03012061?term=NCT03012061&draw=2&rank=1
	Umeclidinium bromide (+ fluticasone furoate + vilanterol)		Phase 3	https://clinicaltrials.gov/ct2/show/NCT02924688?term=GSK573719+in+Combination+With+Fluticasone+Furoate&draw=3&rank=7
	Glycopyrronium (glycopyrrolate)		Phase 2/3	https://clinicaltrials.gov/ct2/show/NCT03358147?term=PT001&draw=2&rank=9
Leukotriene receptor antagonist/leukotriene inhibitor	Gemilukast	Oral	Phase 2	https://clinicaltrials.gov/ct2/show/NCT01536041?term=Gemilukast&cond=asthma&rank=2
	GSK2190915			https://clinicaltrials.gov/ct2/show/NCT01156792?term=GSK2190915&cond=asthma&rank=2

CRTH2 antagonist	GB001	Oral	Phase 2	https://clinicaltrials.gov/ct2/show/NCT03683576
PDE4 inhibitor	Roflumilast	Oral	Phase 2	https://clinicaltrials.gov/ct2/show/NCT01765192?term=Roflumilast&cond=ASTHMA&rank=1
	CHF6001	Inhalation		https://clinicaltrials.gov/ct2/show/NCT01689571?term=CHF6001&cond=Asthma&rank=1
Dual PDE3 and PDE4 inhibitor	RPL554	Inhalation	Phase 2	https://clinicaltrials.gov/ct2/show/NCT02427165?term=RPL554&cond=ASTHMA&rank=1
Protein kinase inhibitor	Imatinib	Oral	Phase 2	https://clinicaltrials.gov/ct2/show/NCT01097694?term=Imatinib&cond=Asthma&rank=1
	Masitinib		Phase 3	https://clinicaltrials.gov/ct2/show/NCT03771040?term=Masitinib&cond=Asthma&rank=1
Selective glucocorticoid receptor modulator	AZD7594		Phase 2	https://clinicaltrials.gov/ct2/show/NCT03622112?term=AZD7594&cond=Asthma&rank=2
Macrolide				
	Roxithromycin	-	Pre-clinical	[1]
	CSY0073			[2]
	MAC5			[3]
Statin	Atorvastatin	Oral	Phase 2	https://clinicaltrials.gov/ct2/show/NCT00126048?term=Atorvastatin&cond=Asthma&rank=2
Novel β_2-adrenoceptor agonist	MN-221	Intravenous	Phase 2	https://clinicaltrials.gov/ct2/show/NCT00838591?term=MN-221&cond=ASTHMA&draw=2&rank=1

CRTH2 chemoattractant receptor-homologous molecule expressed on Th2 cells, *LAMA* long-acting muscarinic receptor antagonist, *PDE* phosphodiesterase, *Th* T helper.

(19–21)

Newer treatment options for Asthma

Immunotherapy: It is a well-established form of treatment for asthma, depending on the sensitisation treatment can be offered to children. Both subcutaneous and sublingual forms are available and can be treated accordingly.

Allergoids: Chemically modified allergen extracts, known as allergoids, are commonly used for treating allergic patients, the concept of allergoids implies allergen extracts with a reduction of their allergenicity maintaining their immunogenicity. linked to their excellent safety profile and their convenience for a quick build-up phase, have made allergoids an excellent product for allergy treatment.

Bronchial Thermoplasty: Bronchial thermoplasty (BT) is a treatment for severe asthma approved by the FDA in 2010. It involves the delivery of controlled, therapeutic radiofrequency energy to the airway wall, thus heating the tissue and reducing the amount of smooth muscle present in the airway wall. The treatment uses heat to shrink the smooth muscle so it can't tighten and cause asthma symptoms. Available data is limited at this point, with promising results in those who have undergone the procedure. (22)

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Common Pediatric Sleep Disorders

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Sleep disorders are common in childhood and adolescents and are associated with neurocognitive and psychosocial impairments. Up to 50% of children will experience a sleep problem. Early identification of sleep problems may prevent negative consequences, such as daytime sleepiness, irritability, behavioural problems, learning difficulties, and poor academic performance. Obstructive sleep apnea occurs in 1% to 5% of children. Chronically disrupted sleep in children and adolescent can lead to cognitive dysfunction as attention, learning and memory problems[1]

Normal Sleep in Infants and Children :

During sleep, the body conserves energy, restores its normal processes, promotes physical growth, and supports mental development. Inadequate sleep at night leads to daytime sleepiness. Sleepiness in children commonly manifests as irritability, behavioural problems, learning difficulties, and poor academic performance [2-4]. Distinguishing significant sleep disruptions from normal age-related changes can be challenging and can ultimately delay treatment.

Sleep changes considerably during the first few years of life and parallels physical maturation and development. Newborns require the greatest total sleep time and have a fragmented sleep-wake pattern. Starting at five months of age, infants have the ability to sleep for longer periods. At six months of age, children are able to go without night-time feedings, but significant variation exists. Additionally, breastfeeding infants have more frequent awakenings, shorter sleep periods, and slightly shorter total sleep times[5]. As children age, sleep periods gradually lengthen, and total sleep time decreases.

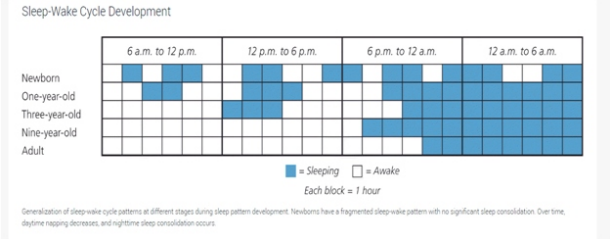

Table 1. Summary of Normal Sleep Parameters in Children

Age	Total sleep time	Naps (on average)
0 to 2 months	16 to 18 hours	3.5 per day at 1 month of age
2 to 12 months	12 to 16 hours Most children 6 to 9 months of age sleep through the night	2 per day at 12 months of age
1 to 3 years	10 to 16 hours	1 per day at 18 months of age
3 to 5 years	11 to 15 hours	50% of 3-year-olds do not nap
5 to 14 years	9 to 13 hours	5% of whites and 39% of blacks nap at 8 years of age
14 to 18 years	7 to 10 hours	Napping in this age group suggests insufficient sleep or a possible sleep disorder

Information from references 10 and 11.

A. Common sleep issues in children and adolescents :

Disrupted or deficient sleep impacts every aspect of a child's functioning. There are a number of potential causes for poor sleep in the young, including sleep disorders and sleep problems[6-14].

Sleep disorders include obstructive sleep apnea, parasomnias, narcolepsy and insomnia.

Sleep problems includebedtime problems, night wakings, sleep related anxiety, deficient sleep, and poor sleep hygiene.

It has been reported that up to 40% of children experience a sleep problem sometime between infancy and adolescence[15].

Common Pediatric Sleep Disorders

Evaluation of sleep complaints

Difficulty falling asleep	-Habitual bedtimes (sleep onset/offset on weekdays and weekends/holidays) -Time taken to sleep onset; "desired" bedtime -Inappropriate nap schedules
Difficulty staying asleep (and/or multiple nocturnal awakenings) + early morning awakenings	-Screen for mood and anxiety symptoms -Screen for primary sleep disorders (sleep apnea) -Family history -Use of alerting substances at bedtime
Excessive daytime sleepiness (EDS)	-Total duration of nocturnal sleep -Quality of morning awakenings -Difficulty to stay awake in the classroom, watching TV, eating meals Persistent use of stimulants (e.g., nicotine, caffeine) to stay awake -Medication use (long-acting psychotropic medications with "hangover" effects) -Substance use (alcohol and other illicit drugs, over-the-counter medications)
Poor sleep routine and sleep hygiene due to environment and psychosocial variables	-Social environment (co-sleeping/sharing bedroom, sleep patterns of parents and other children, pets in bedroom) -Housing (light, noise, and temperature) -Activities at bedtime (computer/telephone, homework completion, TV viewing) Substance use (caffeine intake, nicotine use, over-the-counter medications) Parental involvement (limit setting, adult supervision)

B. How to recognise sleep issues in children : Pediatric Sleep Questionnaire [16]

A. Nighttime and sleep behavior WHILE SLEEPING, DOES YOUR CHILD ...	Yes	No	Don't know
... ever snore?			
... snore more than half the time?			
... always snore?			
... snore loudly?			
... have "heavy" or loud breathing?			
... have trouble breathing, or struggle to breathe?			
HAVE YOU EVER ...			
... seen your child stop breathing during the night? If so, please describe what happened:			
... been concerned about your child's breathing during sleep?			
... had to shake your sleeping child to get him or her to breathe, or wake up and breathe?			
... seen your child wake up with a snorting sound?			
DOES YOUR CHILD ...			
... have restless sleep?			
... describe restlessness of the legs when in bed?			
... have "growing pains" (unexplained leg pains)?			
... have "growing pains" that are worst in bed?			
WHILE YOUR CHILD SLEEPS HAVE ...			
... brief kicks in one or both legs?			
... repeated kicks or jerks of the legs at regular intervals (i.e. about every 20 to 40 seconds)?			

AT NIGHT, DOES YOUR CHILD USUALLY ...	Yes	No	Don't know
... become sweaty, or do the pajamas usually become wet with perspiration?			
... get out of bed (for any reason)?			
... get out of bed to urinate? If so, how many times each night, on average? _____			
... sleep with the mouth open?			
Is your child's nose usually congested or "stuffy" at night?			
Do allergies affect your child's ability to breath to the nose?			
DOES YOUR CHILD ...			
... tend to breathe through the mouth during the day?			
... have a dry mouth on waking up in the morning?			
... complain of an upset stomach at night?			
... get a burning feeling in the throat at night?			
... grind his or her teeth at night?			
... occasionally wet the bed?			
Has your child ever walked during sleep ("sleep walking")?			
Have you ever heard your child talk during sleep ("sleep talking")?			
Does your child have nightmares once a week or more on average?			
Has your child ever woken up screaming during the night?			
Has your child ever been moving or behaving, at night, in a way that made you think your child was neither completely awake nor asleep? If so, please describe what has happened:			
Does your child have difficulty falling asleep at night?			
How long does it take your child to fall asleep at night?			
At bedtime does your child usually have difficult "routines" or "rituals," argue a lot, or otherwise behave badly?			

AT NIGHT, DOES YOUR CHILD USUALLY ...	Yes	No	Don't know
... bang his or her head or rock his or her body when going to sleep?			
... wake up more than twice a night on average?			
... have trouble falling back asleep if he or she wakes up at night?			
... wake up early in the morning and have difficulty going back to sleep?			
Does the time at which your child goes to bed change from day to day?			
Does the time at which your child gets up from bed change from day to day?			
WHAT TIME DOES YOUR CHILD USUALLY ...			
... go to bed during the week?			
... go to bed on the weekend or vacation?			
... get out of bed on weekday mornings?			
... get out of bed on weekends or vacation mornings?			
B. Daytime behavior and other possible problems: DOES YOUR CHILD ...			
... wake up feeling unrefreshed in the morning?			
... have a problem with sleepiness during the day?			
... complain that he or she feels sleepy during the day?			
Has a teacher or other supervisor commented that your child appears sleepy during the day?			
Does your child usually take a nap during the day?			
Is it hard to wake your child up in the morning?			
Does your child wake up with headaches in the morning?			
Does your child get a headache at least once a month, on average?			
Did your child stop growing at a normal rate at any time since birth? If so, please describe what happened:			

	Yes	No	Don't know
Does your child still have tonsils? If not, when and why were they removed?			
HAS YOUR CHILD EVER ...			
... had a condition causing difficulty with breathing? If so, please describe:			
... had tonsillectomy/adenoidectomy surgery? If so, did any difficulties with breathing occur before, during, or after surgery?			
... become suddenly weak in the legs, or anywhere else, after laughing or being surprised by something?			
... felt unable to move for a short period, in bed, though awake and able to look around?			
Has your child felt an irresistible urge to take a nap at times, forcing him or her to stop what he or she is doing in order to sleep?			
Has your child ever sensed that he or she was dreaming (seeing images or hearing sounds) while still awake?			
(If age appropriate) Does your child drink caffeinated beverages on a typical day (cola, tea, coffee, decaffeinated drinks, chocolate)? If so, how many cups or cans per day?			
(If age appropriate) Does your child use any recreational drugs? If so, which ones and how often?			
(If age appropriate) Does your child smoke, vape, or snuff tobacco? If so, which ones and how often?			

HAS YOUR CHILD EVER ...	Yes	No	Don't know
Is your child overweight? If so, at what age did this first develop?			
Has a doctor ever told you that your child has a high-arched palate (roof of the mouth)?			
Has your child ever taken ADHD medications, like Ritalin (methylphenidate), for behavioral problems?			
Has a health professional ever said that your child has attention-deficit disorder (ADD) or attention deficit/hyperactivity disorder (ADHD)?			

C. Differentials of sleep disorders :

International Classification of Sleep Disorders (ICSD) -3 classifies sleep disorders as [13]:

-Insomnia
-Sleep- related breathing disorder
-Central disorders of hypersomnolence
-Circadian rhythm sleep-wake disorder
-Parasomnias
-Sleep-related movement disorder
-Other sleep disorder

INSOMNIA:

a)Chronic insomnia: At least three weeks over a duration of three or more months
b)Short-term insomnia: symptoms present less than three months

Chronic insomnia disorder requires a report of a sleep initiation or sleep maintenance problem, adequate opportunity and circumstances to sleep, and daytime consequences as the result of the insomnia symptoms. The patient should have symptoms at least three times per week over a duration of three or more months.

In short-term insomnia, the symptoms present for less than three months.

SLEEP –RELATED BREATHING DISORDER:

a) Central sleep apnea syndrome
b) Obstructive sleep apnea syndrome
c) Sleep related hypoventilation syndrome
d) Sleep related hypoxemia disorder

Central sleep apnea (CSA) is a disorder characterized by repetitive cessation or decrease of both airflow and ventilatory effort during sleep. CSA can be categorized as hyperventilation- or hypoventilation-related. Most of the types of CSA is hyperventilation related. Hypoventilation-related CSA occurs when there is alveolar hypoventilation that is severe enough to cause central apneas occur when the patient falls asleep because the wakefulness stimulus to breathe disappears.

Central sleep apnea with Cheyne-Stokes breathing
Central sleep apnea due a medical disorder without Cheyne-Stokes breathing
Central sleep apnea due to high altitude periodic breathing
Central sleep apnea due to a medication or substance
Primary central sleep apnea
Primary central sleep apnea of infancy
Primary central sleep apnea of prematurity
Treatment-emergent central sleep apnea

Obstructive sleep apnea (OSA) is characterized by episodes of complete or partial upper airway obstruction during sleep, often resulting in gas exchange abnormalities and disrupted sleep[18].
The risk factors can be adenotonsillar hypertrophy, obesity, genetic or anatomical abnormality.
Pediatric criteria for Obstructive Sleep Apnearequires that at least one clinical finding (snoring, labored breathing, apnea, daytime sleepiness, hyperactivity, or other findings) is present.

Polysomnographic criteria require the presence of one or more obstructive events per hour of sleep or, alternatively, evidence of obstructive hypoventilation ($PaCO_2$ >50 mmHg for >25 percent of sleep time and associated snoring, flattening of nasal airway pressure waveform, or paradoxical thoraco-abdominal movement)

Sleep-related hypoventilation disorders: The criteria for sleep-related

hypoventilation require the presence of elevated PaCO2 levels either directly (by arterial blood gas measurement) or indirectly (by end-tidal CO2 or transcutaneous CO2 measurements).
This includes –
Obesity hypoventilation syndrome
Congenital central alveolar hypoventilation syndrome
Late-onset central hypoventilation with hypothalamic dysfunction
Idiopathic central alveolar hypoventilation

CENTRAL DISORDER OF HYPERSOMNOLENCE :
Narcolepsy Ty-1
Narcolepsy Ty-2
Idiopathic hypersomnia
Kleine- Levin syndrome
Hypersomnia due to medical disorder
Hypersomnia due to medication or substance
Hypersomnia due to psychiatry disorder
Insufficient sleep syndrome

The central disorders of hypersomnolence include those disorders in which the primary complaint is daytime sleepiness that is not due to another sleep disorder]. Excessive sleepiness is defined as daily episodes of an irrepressible need to sleep or daytime lapse into sleep [19].

In diagnosing central disorders of hypersomnolence, careful evaluation for sleep deprivation, i.e., insufficient sleep syndrome, should be carried out, especially in patients who may require longer sleep periods to achieve adequate daytime alertness.

Sleep logs and/or actigraphy for at least a week prior to evaluation of objective sleepiness with a Multiple Sleep Latency Test (MSLT) help verify a regular sleep-wake schedule

Narcolepsy : Narcolepsy type 1 includes patients with excessive sleepiness plus cataplexy and/or hypocretin-1 deficiency in cerebrospinal fluid (CSF).In type 2 Narcolepsy there is hypersomnolence without cataplexy.

Idiopathic hypersomnia — Diagnosed when the patient has subjective sleepiness with mean sleep latency of ⩽ 8 minutes with fewer than two sleep onset rapid eye movement periods on the MSLT plus the overnight polysomnogram, along with the absence of cataplexy or hypocretin-1 deficiency (if measured)

CIRCADIAN RHYTHM SLEEP-WAKE DISORDER:
Criteria:
a)Chronic or recurrent pattern of disturbed circadian rhythm
b)Presence of excessive insomnia or sleepiness
c)Associated distress or impairment

PARASOMNIA: Parasomnias are undesirable physical events (complex movements, behaviours) or experiences (emotions, perceptions, dreams) that occur during entry into sleep, within sleep, or during arousals from sleep [19].

NREM- related
REM –related

The general criteria for the NREM-related parasomnias include:

- Recurrent episodes of incomplete awakening associated with abnormal behaviours and/or experiences

● Absent or inappropriate responsiveness

● Limited or no cognition or dream report, and

● Partial or complete amnesia for the event

Confusional arousals, sleep terrors, and sleepwalking are the most significant parasomnias associated with non-rapid eye movement (NREM) sleep. Typically, they occur at the transition from deep NREM (stage N3) sleep into the lighter stages of NREM sleep (N1 or N2) or into the awake state[20].

REM-related parasomnias: Include nightmares, REM sleep behaviour disorder (RBD), sleep paralysis.

SLEEP –RELATED MOVEMENT DISORDER:
Restless leg syndrome
Periodic limb movement disorder
Sleep- related cramps
Sleep- related bruxism
Sleep- related rhythmic movement disorder
Benign sleep myoclonus of infancy

D. How to pick up sleep issues earlier

	Toddler/preschool 2–5 years	School age 6–12 years
Bed time problems **(B)**	Does your child have any problems going to bed or falling asleep?	Are there any problems at bedtime?*
Excessive day time sleepiness **(E)**	Does your child seem overtired or sleepy a lot during the day? Do they still nap?	Does your child have difficulty waking in the morning, seem sleepy during the day or take naps?*
Awakenings during the night **(A)**	Does your child wake up a lot at night?	Does your child seem to wake up a lot at night? Any sleep walking or nightmares? Is there trouble getting back to sleep?*
Regularity and duration of sleep **(R)**	Does your child have a regular bed time and wake time? What are they?	What time does your child go to bed and get up on school days? Weekends?*
Snoring **(S)**	Does your child snore a lot or have difficulty breathing?	Does your child have loud or nightly snoring or breathing difficulties at night?*

E. Treatment modalities available [21]

Behavioural treatment:

1.Age appropriate and consistent bedtime and sleep schedule for all children

2. Bedtime routine as 2–3 relaxing activities (bath, story) and should be in the bedroom not more than 30 minutes. For younger children or developmentally delayed children, incorporate picture charts.

3. Extinction in younger children. Child is placed in bed or crib while still awake, then parents are instructed not to respond to cries or protests.

4. Graduated extinction. Child is placed in bed or crib while still awake, then parents leave the room and wait

increasing numbers of minutes before re-entering the room for a brief, neutral interaction with the child.

5. Positive routines. Implement bedtime routine that is positive and enjoyable parent-child interaction with oneor two of child's preferred activities, but if child refuses a step or throws tantrums, the routine is ended, child is put to bed, and interaction ceases.

6. Faded bedtime. Child is put to bed close to time he or she is most likely to fall asleep. Once falling asleep within 15–20 minutes, bedtime is moved 15 minutes earlier every 2–3 nights until desired bedtime is reached.

7. Scheduled awakenings. Establish baseline pattern of awakenings using sleep diary

Pharmacological Therapy:

1. Alpha-agonists (clonidine, guanfacine): 0.05mg at

bedtime (titrated by 0.05mg every 5 days)

2. Melatonin: 0.5–3mg/day (administered 2–3 hours prior to sleep onset)

3. Antihistamines – Diphenhydramine (0.5mg/kg, with

maximum dose of 25mg/day), Hydroxyzine (0.5mg/kg)

4. Antidepressants -Trazodone at lower doses (12.5–50mg/day)

Tricyclics (amitriptyline, nortriptyline)

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INTERNATIONAL ADOLESCENT HEALTH WEEK

Dr. Padmavathy Narayan
Hon. Sec., BAHA 2023

International adolescent health week is a global initiative celebrated annually. It is a grassroots initiative for young people, their healthcare providers, their teachers, their parents, their advocates and their community to come together to celebrate young people, with an ultimate goal of working collectively that aims to promote the health and well- being of the adolescents around the world.

IAHW was founded by Laura Offutt MD, FACP., and started as Teen Health Week in the US in 2016. It is now an official event hosted by the International Association of Adolescent Health and the work is led by members of the International Association of Adolescent Health in collaboration with the Society of Adolescent Health and Medicine(SAHM)
This event was introduced to India by Dr Preeti Galagali, Honourable Secretary of the International Chapter of SAHM 2023-26. This week-long event is celebrated every year in the month of March.It provides an opportunity for individuals, organisations and governments to come together and address the unique health challenges faced by the young people in the country and to inspire adolescents and their community to advocate for a successful transition into adulthood.

Adolescence is a critical period in a person's life and in India it is estimated that there are over 243 million adolescents in the age group of 10 to 19 years. During this age, they are vulnerable to a range of health issues including mental health problems, substance abuse, sexually transmitted infections. IAHW in India aims to address these issues by promoting healthy behaviours, providing access to quality health care services, including mental health, sexual and reproductive health, substance abuse treatment and raising awareness about the importance of a healthy lifestyle. This includes encouraging them to eat a healthy diet, exercise regularly and avoid risky behaviour like smoking and substance abuse and by encouraging adolescents to develop good habits that will benefit them throughout their life.

Government of India has taken several initiative like Rashtriya Kishore SwasthyaKarykram(RKSK) that aims to provide comprehensive healthcare services to adolescents.
We have Youth Ambassadors who campaign during this week and we are proud that they were from Bangalore in 2021 and 2022. The Youth Ambassadors from India were Ms Tanvi Nair, was a first year psychology postgraduate student from KristuJayanti college Bangalore for 2021 andMs Tanishqua Sanjay, daughter of our own Pediatrician Dr Sushma Sanjay, for 2022.
On this occasion,the Bangalore AHA in association with IAP BPS, in 2021 and 2022, have conducted various programs for pediatricians, parents and teachers of adolescents and adolescents in Medical Colleges, Hospitals, clinics and in schools to promote the health and well-being of the adolescents and successful transition to adulthood.

ACTIVITIES OF TEAM IAP BPS IN MARCH

Grand Master Kasi on vaccine at Mlore pedicon

Dr. Basavaraj delivering MR Shenoy oration

Dr. Jagadish Chinnappa being conferred with Dr. Sanjeev Rai

Dr. Bhaskar and Dr. Basavaraj are in action in Vaccicon 2023.

Federation of Karnataka Chamber of Commerce and Industry the apex body of all the trade associations in Karnataka honoured our Dr Sumita Nayak with Woman Achiever 2023 award in the Professionals category at their womens day event. Hearty congratulations and well deserved Sumita !

ACTIVITIES OF TEAM IAP BPS IN MARCH

GLIMPSES FROM MANGALORE PEDICON

Monthly Camp at Rajarajeshwari Nagar

Upcoming Events

Topic : **Pediatric Dermatology**

Monthly CME on 16.04.2023 will be related to Pediatric Dermatology.

PG Teaching Program on Nutritional Disorders at KC General Hospital.