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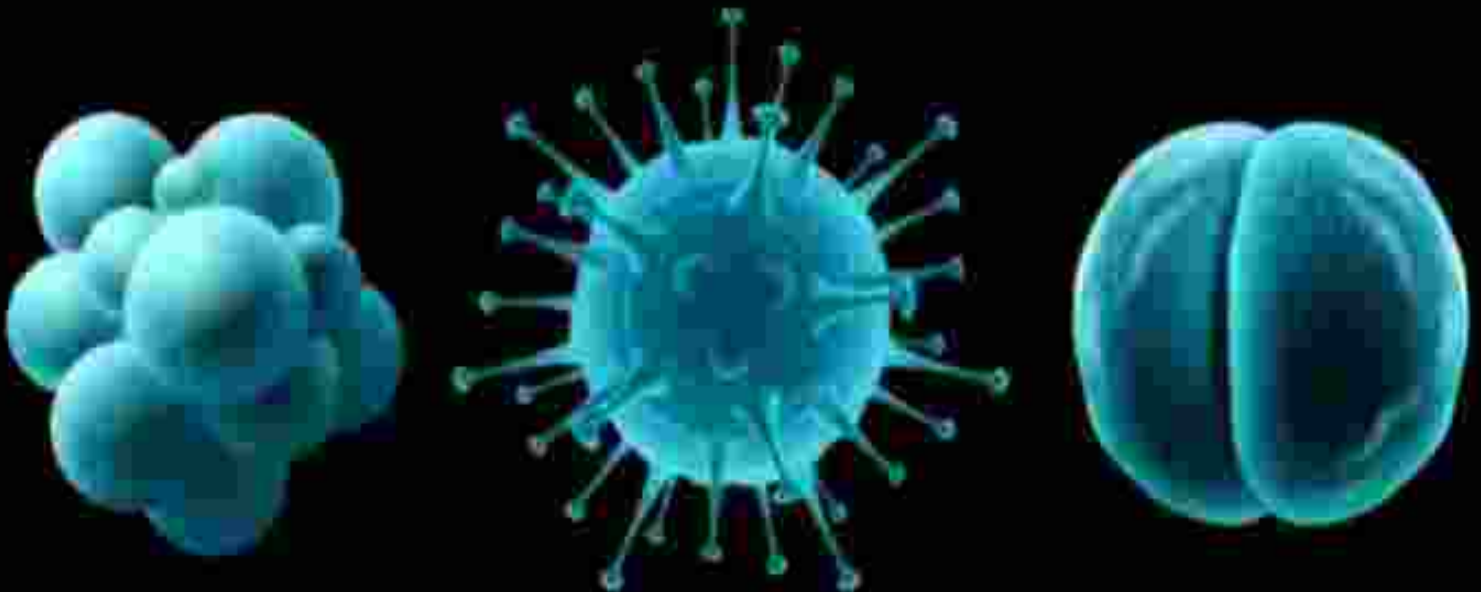
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YOUR HEALTH

An Official Monthly Publication in English of the Indian Medical Association since 1952 for the people to propagate Health Awareness in the Community

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disfunction any infection or virus**



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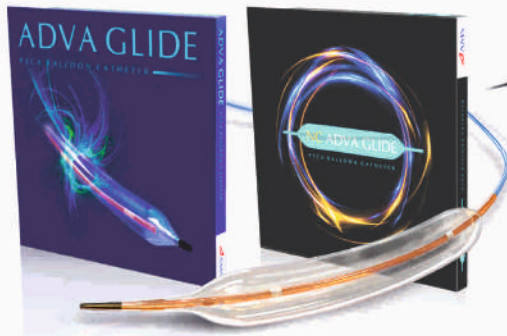
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YOUR HEALTH

OF INDIAN MEDICAL ASSOCIATION

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**Dr Samarendra Kumar Basu**

Monkeypox had become rampant in parts of the World after Covid and now the seasonal disease at the doorstep is Dengue.

Moneypox is a viral infection, though it is seen in parts of US, West and Central Africa, the disease is now being reported from other regions including India.

Moneypox was first identified in Monkeys in 1958. Later it was seen in humans in 1970 in Africa. A person with an unexplained acute rash, Swollen lymph nodes, Fever, Headache, Body aches, profound weakness is a suspect. Human-to-human transmission through large respiratory droplets generally requiring a prolonged close contact, through direct contact with body fluids or lesion material, and indirect contact with lesion material, such as through contaminated clothing or linens of an infected person. It can be transmitted from infected pregnant mother to fetus also. Animal-to-human transmission is also known by bite or scratch of infected animals.

Unlike Chicken pox, in Monkey pox rashes are seen in palm and sole. It can be diagnosed in laboratory after swab test or blood antigen examination.

Health care workers and members of the family active cases are at higher risk of infection. No vaccine exclusively for monkeypox is available as yet

Dengue fever is one of the dangerous vector borne diseases caused by a virus carried by *Aedes* mosquitoes. The virus can't spread directly from person to person.

The virus can cause fever, headaches, rashes, and pain throughout the body. Dengue fever is called "breakbone fever," which might give you an idea of the severe bone and muscle pain it sometimes can cause. Most cases of dengue fever are mild and go away on their own after about a week.

It diagnosed by Complete blood count, Dengue NS1 Mac Elisa, Dengue IgM Mac Elisa, Dengue IgG Mac Elisa.

It causes a high fever, Headache, Muscle, bone or joint pain, Nausea, Vomiting, Pain behind the eyes, Rash. Unlike other infections, where the end of fever signifies the end of infection, in dengue the critical phase starts after the fever ends.

Home based care and continuous monitoring is needed Paracetamol for fever, Plenty of fluids, Avoid sugar containing juices, cold drinks, Monitoring the urine output, Monitoring vitals like heart rate, oxygen saturations, blood pressures

Outside one should wear full sleeve shirts covering maximum of the body should be careful in the hours around dawn and dusk, when mosquitoes are most active.

Breeding of mosquitoes is to be controlled by public health measure and awareness. Mosquitoes lay its eggs in water, to get rid of standing water in containers and discarded tires, and be sure to change the water in birdbaths, dog bowls, and flower vases at least once a week. Neighborhood should be encouraged to keep the surrounding clean and free from stagnant water especially in the rainy season. Ask your local municipal office to be vigilant and keep spraying anti mosquito sprays at regular interval. Construction sites are particularly notorious for water logging and should be observed regularly.

Spread Awareness, be Safe!



Dr Sarbari Dutta
Hony. Secretary, Your Health



From the Desk of Secretary

World Breastfeeding Week 2022 :
August 1-7

Focus: Breastfeeding Friendly Hospitals In India (BFHI-India) Objectives Of WBW 2022

1. To draw attention of policy makers and programme managers to the importance of breastfeeding friendly hospitals in India.
2. To encourage hospitals with maternity facilities to adopt breastfeeding friendly practices.
3. To advocate that health and nutrition care providers are trained in lactation management skills needed to counsel and support women during the hospital stay.

WHO'S TEN STEPS TO SUCCESSFUL BREASTFEEDING?

Critical management procedures:

- 1 a. Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.
- b. Have a written infant feeding policy that is routinely communicated to staff and parents.
- c. Establish ongoing monitoring and data-management systems.
2. Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding. Key clinical practices:
3. Discuss the importance and management of breastfeeding with pregnant women and their families.
4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.
6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
7. Enable mothers and their infants to remain together and to practise rooming-in 24 hours a day.
8. Support mothers to recognize and respond to their infants' cues for feeding.
9. Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.
10. Coordinate discharge so that parents and their infants have timely access to ongoing support and care. (WHO, 2022)

There is substantial evidence that implementing the Ten Steps significantly improves breastfeeding rates. A systematic review of 58 studies on maternity and newborn care published in 2016 demonstrated clearly that adherence to the Ten Steps impacts early initiation of breastfeeding immediately after birth, exclusive breastfeeding and total duration of breastfeeding.

The "Your Health of IMA" is a publication of Indian Medical Association (IMA) for the masses from Kolkata. This August 2022 issue is dedicated to variety of **VECTOR BORNE DISEASES**. The different authors have done a marvellous job while composing the contents covering a vast field in Medicine. I am grateful to all concerned those who have contributed to bring out this issue. I hope this will be of great help to the common masses to understand the subject.



Dr Anirban Dalui, MBBS, MD, FCGP, FIAMS

Consultant Physician and Public Health Specialist

Trainer of trainers of different programs related to infectious diseases

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Season's Greetings!

It is very common now a days to find people around you having cough, cold, fever etc. These are mainly due to some infections caused by several bacteria or virus. Majority of them are preventable and can be controlled. A disease which is communicable in nature that means which spreads from one to another should be dealt with precautionary measures as well as timely attention.

Infectious diseases are caused by infectious organisms. Typically, these are bacteria, viruses, fungi, or worms/helminths. Under normal circumstances, when the immune system of the host is fully functional, disease symptoms may not develop. If the host immune system is compromised, or the infectious agent overwhelms the immune system, an infectious disease ensues. Most infections are caused by bacteria, viruses, protozoa, helminthes, rickettsia, and fungi.

Infectious disease emerged as a specialty in the past century after significant advances had been made in the field of antibiotic therapies to treat life-threatening contagious, postoperative, and trauma-related infections. Especially during the years after World War II, the industrialized world benefited from the development of chemotherapeutic agents, the expansion of public health practices, and profound discoveries in the field of microbiology and immunology, all of which led to significant decreases in the incidence of mortality and morbidity due to infectious processes.

A shift in the disease management focus of the general practitioner slowly took place as the scientific community was able to provide objective tools for disease recognition, vaccine, and other strategies for disease prevention as well as applicable treatments for an expanding number of disease-causing pathogens and conditions.

Common infectious diseases can be any of the following:

- | | | |
|----------------------------|--------------------------------|--|
| ☞ Chickenpox | ☞ Malaria | ☞ Severe acute respiratory syndrome (SARS) |
| ☞ Common cold | ☞ Measles | ☞ Sexually transmitted diseases |
| ☞ Diphtheria | ☞ Meningitis | ☞ Shingles (herpes zoster) |
| ☞ E. coli | ☞ Mumps | ☞ Tetanus |
| ☞ Giardiasis | ☞ Poliomyelitis (polio) | ☞ Toxic shock syndrome |
| ☞ HIV/AIDS | ☞ Pneumonia | ☞ Tuberculosis |
| ☞ Infectious mononucleosis | ☞ Rocky mountain spotted fever | ☞ Viral hepatitis |
| ☞ Influenza (flu) | ☞ Rubella (German measles) | ☞ West Nile virus |
| ☞ Lyme disease | ☞ Salmonella infections | ☞ Whooping cough (pertussis) |

Many infectious diseases have similar symptoms, like:

- fever,
- diarrhea,
- fatigue, and
- muscle aches.

They can also have very specific symptoms. These diseases are also treated differently depending on how severe they are and how much they affect your immune system.

While you may not go to the doctor for a cold, if your symptoms last longer than a few days, you should see a

doctor. You can also prevent some diseases by getting vaccinations.

Some basic steps to prevent infections..

1. Wash your hands with soap and water or use sanitizer before having food.
2. Use masks in crowded place to get rid of infections like Covid 19, Tuberculosis, common cold or flu etc.
3. Use mosquito net and clean your premises so that no stagnant water can be accumulated.
4. Get vaccinated at regular interval as per guideline.
5. Take care of the infected person with precautions.
6. Early diagnosis and timely treatment can reduce morbidity and mortality.
7. Healthy diet is always helpful to boost your immune system.

So it's a shared responsibility of all the stakeholders to fight against infectious pathogens. If each one of us

take the initiative and become responsible citizen, our fight against these deadly diseases will be easier and fruitful one.

Wish you all healthy and prosperous years to come...



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Dr Soumya Mitra

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Asthma (previously known as Bronchial asthma) is a very common disorder of the respiratory system. In our country it is very much under diagnosed and many a times it remains untreated even after diagnosis.

What is asthma?

Asthma is a disease that affects your lungs and the airways. It's a chronic (ongoing) condition, it doesn't go away and needs continued medical management.

Asthma affects more about 3% (30 million patients) of the total population in India, with a prevalence of 2.4% in adults aged >15 years and between 4% -20% in children. Asthma can be life-threatening if you don't get treatment.

When do you suspect that you have asthma?

People with asthma usually have obvious symptoms. These signs and symptoms resemble many respiratory conditions. The four classical symptoms of Asthma are-

- Wheezing
- Chest tightness
- Shortness of breath
- Coughing

More are the number of symptoms; more is the probability of having Asthma. Moreover, these symptoms vary remarkably throughout the year and throughout the day. The symptoms are greater at night and after waking up. The symptoms may also get aggravated by exercise, laughter exposure to allergens or cold air, viral infections etc.

What is an asthma attack?

Asthma attacks, also known as exacerbation or a flare-up, are episodes characterized by a progressive increase in usual asthma symptoms and a progressive decrease in lung function, i.e. they represent a change from the patient's usual status that is sufficient to require a change in treatment. In our country we often see exacerbation of asthma is the first presentation of the disease.

Who can get asthma?

Anyone can develop asthma at any age. People with allergies or people exposed to tobacco smoke are

Asthma: Do's and Don'ts

more likely to develop asthma. This includes secondhand smoke (exposure to someone else's smoking) and third hand smoke (exposure to clothing or surfaces in places where someone has smoked).

Statistics show that people assigned female at birth tend to have asthma more than people assigned male at birth. Asthma affects Black people more frequently than other races.

What causes asthma?

Researchers don't know why some people have asthma while others don't. But certain factors present a higher risk:

- **Allergies**
- **Environmental factors:** like allergens, toxins, fumes and second- or third-hand smoke. These can be especially harmful to infants and young children whose immune systems haven't finished developing.
- **Genetics:** If your family has a history of asthma or allergic diseases, you have a higher risk of developing the disease.
- **Respiratory infections:** Certain respiratory infections, such as respiratory syncytial virus (RSV), can damage young children's developing lungs.

What are common asthma attack triggers?

You can have an asthma attack if you come in contact with substances that irritate you. Healthcare providers call these substances "triggers." Knowing what triggers your asthma makes it easier to avoid asthma attacks.

For some people, a trigger can bring on an attack right away. For other people, or at other times, an attack may start hours or days later.

Triggers can be different for each person. But some common triggers include:

- **Air pollution:** like factory emissions, car exhaust, wildfire smoke and more.
- **Dust mites:** You can't see these bugs, but they are in our homes. If you have a dust mite allergy, this can cause an asthma attack.
- **Exercise:** For some people, exercising can cause an

attack.

- **Mold:** Damp places can spawn mold, which can cause problems if you have asthma. You don't even have to be allergic to mold to have an attack.
- **Pests:** Cockroaches, mice and other household pests
- **Pets:** Your pets can cause asthma attacks. If you're allergic to pet dander (dried skin flakes), breathing in the dander can irritate your airways.
- **Tobacco smoke:** If you or someone in your home smokes, you have a higher risk of developing asthma. You should never smoke in enclosed places like the car or home, and the best solution is to quit smoking. Your provider can help.
- **Strong chemicals or smells.** These things can trigger attacks in some people.
- **Certain occupational exposures.** You can be exposed to many things at your job, including cleaning products, dust from flour or wood, or other chemicals. These can all be triggers if you have asthma.
- **Emotional outbursts like anger, sorrow can also be a triggering factor for asthma attacks**

With asthma, you may not have all of these symptoms with every flare. You can have different symptoms and signs at different times with chronic asthma. Also, symptoms can change between asthma attacks.

WHAT YOU SHOULD DO WHEN YOU SUSPECT YOU HAVE ASTHMA:

First and foremost: YOU SHOULD CONSULT YOUR DOCTOR. You'll need to see a doctor to find out if you have asthma or some other condition. There are other respiratory diseases that make it hard to breathe or cause coughing and wheezing.

How do healthcare providers diagnose asthma?

Your doctor will review your medical history, including information about your parents and siblings, ask you about your symptoms. Your provider will need to know any history of allergies, eczema (a bumpy rash caused by allergies) and other lung diseases.

Your provider may order spirometry. This test measures airflow through your lungs and is used to diagnose and monitor your progress with treatment. Sometimes a chest X-ray, blood test or skin test may be needed.

What asthma treatment options are there?

Your healthcare provider may prescribe medications to control symptoms. These include: Bronchodilators, Anti inflammatory medicines and rarely biologic

therapies. The mainstay of Asthma treatment is inhalation therapy. You may breathe in the medicines using a metered-dose inhaler, nebulizer or dry powder inhaler. Sometimes our healthcare provider may prescribe oral medications.

What is asthma control?

The goal of asthma treatment is to control symptoms. Asthma control means you:

- Can do the things you want to do at work and home.
- Have no (or minimal) asthma symptoms.
- Rarely need to use your reliever medicine (rescue inhaler).
- Sleep without asthma interrupting your rest.

How do you monitor asthma symptoms?

You should keep track of your asthma symptoms. Your healthcare provider may ask to use a peak flow (PF) meter. This device measures how fast you can blow air out of your lungs. It can help your provider make adjustments to your medication. It also tells you if your symptoms are getting worse.

How can I prevent an asthma attack?

Though you can't prevent yourself from getting asthma, but you can avoid an attack. If you have asthma, you'll need to figure out what triggers an attack. Avoiding the triggers can help you avoid an attack.

What's the outlook for someone with asthma?

If you have asthma, you can still live a very productive life and participate in sports and other activities. Your healthcare provider can help you manage symptoms, learn your triggers and prevent or manage attacks.

What is an asthma action plan?

Your healthcare provider will work with you to develop an asthma action plan. This plan tells you how and when to use your medicines. It also tells you what to do based on your asthma symptoms and when to seek emergency care. Ask your healthcare provider about anything you don't understand.

What should I do if I have a severe asthma attack?

If you have a severe asthma attack, you need to get immediate medical care.

The first thing you should do is use your rescue inhaler. A rescue inhaler uses fast-acting medicines to open up your airways. It's different than a maintenance inhaler, which you use every day. You should use the rescue inhaler when symptoms are bothering you and you can use it more frequently if your flare is severe.

If your rescue inhaler doesn't help or you don't have it with you, go to the emergency department if you have:

- Anxiety or panic.
- Bluish fingernails, bluish lips (in light-skinned people) or gray or whitish lips or gums (in dark-skinned people).
- Chest pain or pressure.
- Coughing that won't stop or severe wheezing when you breathe.
- Difficulty talking.
- Pale, sweaty face.
- Very quick or rapid breathing.

WHAT YOU SHOULD NOT DO WHEN YOU HAVE ASTHMA:

- You should not get exposed to YOUR asthma triggers

- Avoid smoking, both active and passive
- Avoid alcohol consumption
- Do not ignore any symptoms, always think about the possibility of an Asthma flare up
- Do not use over the counter medications: oral or Inhaler. Remember inhalers are drugs which have a specific dose which can only be decided by your doctor.
- Remember, Asthma can't be cured, but it can be managed. So, never discontinue your inhaler without your doctor's approval.
- Do not over eat and avoid taking spicy food.
- Don't stop exercising but make sure you talk to your doctor about how to begin an exercise program safely.



Dr. Saheli Kapat
(MBBS, DNB-OBGY)

Pregnancy is a high risk condition

Pregnancy is a defining moment in a woman's life, it shows her how strong her body is, how powerful her mind is and how essential life is. Giving birth should be your greatest achievement not your greatest fear. It is the promise of every pregnant mother to her baby to protect the baby from any hazards.

Infection is one of the greatest fears in pregnancy and risks the health of both mother and baby in womb.

Common infections during Pregnancy

Infections are caused by pathogenic microorganisms (e.g., bacteria, viruses, fungi, parasites) that may be transmitted directly or indirectly by various sources. Some infections may be harmful, but some may be harmless; whereas all may be preventable. Changes in immune function may cause this increased risk of infection. If left untreated, it may lead to serious complications. Complications from severe infections during pregnancy may include preterm birth, low birth weight, birth defects, learning problems and possibly pregnancy loss. Prevention, early detection, and treatment are vital to help minimize and eliminate these complications. Infections are caused by

Infections in Pregnancy

pathogenic microorganisms that may be transmitted directly or indirectly by various sources (e.g., person to person, insects, animals, environment, food, water). Many viral infections during pregnancy are considered harmless but due to the immunological changes that are associated with pregnancy, the severity of viral infections may increase.

During Pandemics

In pandemics such as influenza, Ebola, Zika, and COVID-19, it becomes challenging to prevent and treat these infections with the complexity. In such viral infections, main line of treatment are rest, isolation, maintaining hydration, maintaining personal hygiene, wearing mask and Paracetamol for fever reduction. If possible, Video consultations with your gynaecologist. At least three ultrasonography (USG) to be done ; at 11-12 weeks for NTNB (for checking chromosomal abnormality, if any), at 18-20 weeks for anomaly scan, at 32 weeks for fetal growth check and others if necessary.

Rt-PCR is preferable test for diagnosis of Covid-19 virus. Pregnancy itself is a thrombogenic state (increased risk of blood clotting) and it's risk increases even more in Covid. Blood thinner may be needed

after consulting with your physician and gynaecologist. Regular monitoring of heart rate, blood pressure and saturation is necessary. There is high risk for developing pneumonia, which is life threatening. So close monitoring and early interpretation of high risk signs (uncontrolled fever, chill, respiratory distress etc) are necessary. Till date there is no proven risk to the health of the baby due to Covid.

Travelling in high risk zones with zika virus should be halted. Testing is vital, as this infection may lead to severe complications, such as encephalopathy (brain damage) in newborns. Testing is recommended for symptomatic pregnant women who have traveled to areas with risk of Zika.

Fever with rash

Fever with rash is high alarming signs of viral infections like herpes, chickenpox, cytomegalovirus and some bacterial infection and Toxoplasma (a protozoan infection). If infection occur in early months of pregnancy, there is high risk of birth defects in unborn baby, which may be detected by serial ultrasonography. Some of those birth defects are incompatible to life and may need termination of pregnancy.

Chicken pox infection in pregnancy can be dangerous for both mother and baby, so it's important to seek advice early. There's a 90% chance of being immune to chickenpox infection. But if you've never had chickenpox (or you're unsure if you've had it) and you come into contact with a child or adult who does, speak to a Doctor immediately. A blood test will find out if you're immune.

Cytomegalovirus Infection (CMV) can be dangerous during pregnancy as it can cause problems for unborn babies, such as hearing loss, visual impairment or blindness, learning difficulties and epilepsy. CMV is particularly dangerous to the baby if the pregnant mother has not had the infection before. It's not always possible to prevent a CMV infection, but you can reduce the risk by washing hands regularly with soap and hot water (particularly after changing nappies) and maintaining personal hygiene. Toxoplasmosis can harm your baby. To reduce the risk of infection - avoid emptying cat litter trays while you're pregnant; if nobody else can empty the litter tray, use disposable rubber gloves, trays should be cleaned daily, avoid close contact with sick cats; even if you do not have a cat, wear gloves if gardening in case the soil is contaminated with faeces, wash your hands and gloves after gardening. If you do come in contact with cat faeces, wash your hands thoroughly; follow general food hygiene rules. Herpes infection causes painful blisters or ulcers on the genitals. Treatment is



available if your first infection occurs in pregnancy. If your first infection occurs near the end of pregnancy or during labour, caesarean section may be recommended to reduce the risk of passing herpes on to your baby. Another high risk for congenital infection is Rubella, which may lead to spontaneous abortions. But good thing in Rubella is, if one woman once infected with Rubella she develops immunity against it for lifelong. MMR vaccine do the same job. Vaccine is not recommended in pregnancy.

Pregnancy and HIV

When a pregnant woman infected with HIV goes into labor, the risk of transmitting HIV to the baby increases when the amniotic sac breaks. In order to protect the women's health and also to prevent mother-to-child transmission, antiretroviral therapy against HIV infection is recommended. Breastfeeding is not harmful for baby in HIV positive mother, benefits of breastfeeding outweigh the risk of infection. Mixed feeding of baby is not recommended.

Syphilis in the pregnancy if left untreated may cause severe complications such as stillbirth or deadly infection in the newborn. Screening is mandated early in pregnancy, and if tests are positive, treatment is necessary for prevention of transmission to the baby.

Asymptomatic urinary tract infections may occur in pregnant women and can lead to complications, including premature labor. A urine culture is best to be completed as part of the screening process during early pregnancy to help treat the infection early and prevent complications, such as pyelonephritis.

When malaria is left untreated, the infection can progress to severe complications even death of mother.

Pregnancy is a blessing, enjoy it!



Dr Soham Basu, Senior Resident
 Dept of Pathology, North Bengal Medical College

Cell Markers – a novel approach to diagnosis

Thirty seven (37) Trillion. Yes, that is the approximate number of cells that make up a human body. There are less stars in the galaxy than there are cells in our body. Imagine this number of cells, how many of them look the same? Same lineage, same shape, same cytosol, same nucleus. How difficult it will be then to understand which cell is which under the microscope? It is in this scenario that cell marker and its use in cell identification take a role of paramount importance.

What are Cell Markers?

Every cell synthesise proteins, lipids or various glycosylation products. These products are usually very specific and characteristic for the cell in which they are present. There are procedures by which we can identify the presence or absence of cell markers on the surface of as well as inside a particular cell. This in turn, help to categorise a previously unknown cell into a specific lineage and type.

For example, suppose there is a cell of myeloid lineage. Myeloid cells are white blood cells that help to fight infection and are the key cells in immune response of our body. There are various types of myeloid cells. Let us take two of them, B-Lymphocytes and T-Lymphocytes. In certain hematolymphoid malignancy, it becomes important to identify the cellular lineage due to variable treatment modality. Thus, to identify the cells, we have something called CD or Cluster Differentiation marker. T-Lymphocytes are CD 4,5,7,38 etc and B- lymphocytes are CD 19,20,22 etc. as well as common lineage markers.

This use of markers are not only limited to hematologic disorders but disorders anywhere in the body.

Why are cell markers important?

As stated above, “mark”-ing a cell as of origin/category can be done with the help of these specific cell surface or intracellular molecules. Suppose during a cytopathological examination (eg Fine needle aspiration cytology) of a tumor mass, we come across cells that appears mostly spindle in shape. Spindle shaped cells can be of variable origin – they can be of

vascular, neural, muscular or fibroblast, fibrohistiocytic in origin, etc. And in such cases it is often very difficult to identify cells based on their cytology alone. However in such cases knowing cell of origin is of paramount importance as the treatment modality, aggressiveness of the tumour and future prognosis all may change with a wrong diagnosis.

In such cases we generally employ a panel of antibodies against markers to detect the cell. For example,

CK, EMA	Vimentin	Desmin	S100/CD 57	CD34 Ulex	CD31/IV	Collagen	Cancer
+	-	-	-	-	-	-	Sarcomatoid SCC, Synovial Sarcoma
-	+	+	-	-	-	-	Smooth muscle tumor
-	+	-	+	-	-	+	Malignant Peripheral erve Sheath Tumor
-	+	-	-	+	+	-	Vascular Tumor
-	+	-	-	+	-	-	Other spindle cell tumor
-	+	-	-	-	-	-	Fibrosarcoma/

Thus in the above table we can clearly see how a combination of various markers can help us reach a conclusion as to the cell of origin when routine pathological examination are unable to provide a clear answer.

Another point to note that genetic expression which is ultimately what leads to differentiation of a primordial germ cell into a mature cell and in turn also causes expression of particular antigen in the cell (which act as marker) is different in different cells of the body. For example, two marker CK 7 and CK20 (CK = Cytokeratin) is expressed in a variety of tumors in our body. However they demonstrate a pattern of expression:

	CK 7+	CK 7-
CK 20+	Peri-diaphragmatic tumours (pancreas Biliary tree, stomach and urinary bladder)	Below the diaphragm tumor (Colorectal)
CK 20-	Above the diaphragm tumors (lungs, breast) and Female Genital Tract (Uterus, Ovary)	Simple Visceral (Liver, Kidney except Colon)

Thus we can see that cell markers can not only tell us what type of cell the tumor originates from and in case of metastatic (i.e. tumor at a far away site from where origin) tumor can actually help to understand the site of primary tumor as well.

How to identify cell marker?

Having gotten a glimpse of what and whys of cell marker, let us in brief talk about the test used to identify the markers. The two most commonly used test are

Flowcytometry: Flowcytometry is the study of flowing cells, like Blood cells in the body. It is laser-based technique used to detect and analyze the chemical and physical characteristics of cells or particles. The main advantage being multiple parameters can be quickly assessed.

Immunohistochemistry: That uses some specialized chromogen stain and antibodies against the antigens to be expressed. A biopsy specimen is directly visualised under the microscope and the stain can

directly detect the presence or absence of the marker in question.

The choice of test depends upon the tumor and the question we are looking to answer. And there are many questions that these test answer much more thoroughly than our conventional tests. Like how fast the tumor is growing, what is the response to therapy, what is the cancer load post therapy, what specific target therapy to be given etc.

The future is marked

The future is indeed going to be determined by these focused diagnostic tools to help look for specific marker (whether in the gene or in the proteins expressed) for the cell of interest. With further development of technology, even cells present in minimal amount can be identified. Development of biochips and bio-informatics can help narrow the gap in diagnostic and therapeutic tools and expected patient outcome.



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Dengue fever is a tropical disease prevalent in South East Asia caused by a virus carried by mosquitoes. The virus can cause fever, headaches, rashes, and pain throughout the body. Dengue fever is called "breakbone fever," which might give you an idea of the severe bone and muscle pain it sometimes can cause. Most cases of dengue fever are mild and go away on their own after about a week.

Dengue is spread by *Aedes* mosquito, when an *Aedes* mosquito bites a person who's been infected with a dengue virus, the mosquito can become a carrier of the virus. If this mosquito bites someone else, that person can be infected with the dengue virus and can then get sick with dengue fever. The virus can't spread directly from person to person.

Symptoms –

Dengue fever causes a high fever — 104 F (40 C) — and any of the following signs and symptoms:

- Headache
- Muscle, bone or joint pain
- Nausea

Dengue Fever in Children

- Vomiting
- Pain behind the eyes
- Rash

The fever may last up to 5 to 7 days. Unlike other infections, where the end of fever signifies the end of infection, in dengue the critical phase starts after the fever ends and usually lasts for 48 to 72 hours since the last peak of fever. Most of the dreaded complications occur in this stage

Laboratory diagnosis –

- Complete blood count – may reveal low WBCs, low platelet counts, high PCV
- DENGUE NS1 MAC ELISA - Used to diagnose dengue within the 1st 5 days of fever
- DENGUE IgM MAC ELISA - Used to diagnose dengue after 5 days of fever
- DENGUE IgG MAC ELISA - signifies past infection

Other lab tests like renal function tests, liver function tests, CPK, ferritin, coagulation profile



might be required in complicated cases requiring admission as per the treating physician's advice.

Home based care –

- Paracetamol for fever
- Don't use medicines like ibuprofen as it may cause bleeding
- Plenty of fluids
- Avoid sugar containing juices, cold drinks
- Monitoring the urine output
- Monitoring vitals like heart rate, oxygen saturations, blood pressures

Most of the children recover at home with cautious monitoring and oral fluid therapy. If the child is having dengue fever for a second time, then it's a matter of concern and chances of complications are more.

Danger signs –

- High fever persisting beyond 7 days
- Dengue below 1 year of age
- Decreased urine output
- Secondary dengue
- Severe abdominal pain
- Repeated episodes of vomiting
- Severe prostration
- Bleeding from any site
- Respiratory distress
- Overweight child
- Rising PCV, Falling PLATELETS
- Convulsions

If any of the above signs are present, contact your child specialist immediately and admit the child for better observation and iv fluids therapy. Remember, platelet count is not the sole prognostic factor in dengue fever and platelet transfusion is only indicated if the count is below 10000 or there is active bleeding.

Prevention –

- Use screens on doors and windows, and promptly

repair broken or damaged screens. Keep unscreened doors and windows shut.

- Have kids wear long-sleeved shirts, long pants, shoes, and socks when they go outside, and use mosquito netting over their beds at night.
- Use insect repellent as directed on kids. Choose one with oil of lemon eucalyptus.
- Limit the amount of time kids spend outside during the day, especially in the hours around dawn and dusk, when mosquitoes are most active.
- Don't give mosquitoes places to breed. They lay their eggs in water, so get rid of standing water in things like containers and discarded tires, and be sure to change the water in birdbaths, dog bowls, and flower vases at least once a week.

Encourage your neighborhood to keep the surrounding clean and free from stagnant water especially in the rainy season. Ask your local municipal office to be vigilant and keep spraying anti mosquito sprays at regular interval. Construction sites are particularly notorious for water logging and should be observed regularly.

Dengue vaccine: Future Hope –

Dengvaxia is the only dengue vaccine approved by the U.S. Food and Drug Administration and recommended for routine use by the Advisory Committee on Immunization Practices. It is made by Sanofi Pasteur. The vaccine prevents dengue caused by all four dengue virus serotypes. This vaccine is still not available in our country.

In conclusion, Dengue is a major cause of morbidity and mortality in our part of the world. From a pediatrician's perspective dengue is a disease even much more terrifying than COVID. With early diagnosis and proper patient education, we can definitely keep it definitely curb this mosquito borne menace.

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Monkeypox



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Monkey pox - a new disease?

What is Monkey pox?

It is a viral infection, commonly seen in certain areas of West and Central Africa. The disease is common in that area but recently cases are being reported from other regions including India.

Why is the name—Monkey pox?

The disease was first identified in Monkeys in 1958. Later it was seen in humans in 1970 in Africa.

Who is a suspected monkeypox case?

A person of any age having history of travel to affected countries within last 21 days presenting with an unexplained acute rash AND

one or more of the following signs / symptoms

- Swollen lymph nodes
- Fever
- Headache
- Body aches
- profound weakness

How it is transmitted?

- Human-to-human transmission is known to occur primarily through large respiratory droplets generally requiring a prolonged close contact. It can also be transmitted through direct contact with body fluids or lesion material, and indirect contact with lesion material, such as through contaminated clothing or linens of an infected person. It can be transmitted from infected pregnant mother to fetus also.
- Animal-to-human transmission: may occur by bite or scratch of infected animals like small mammals

including rodents (rats, squirrels) and non-human primates (monkeys, apes) or through bush meat preparation.

- Health care workers and household members of active cases are at higher risk of infection
- A patient can transmit disease from 1-2 days before appearance of rash and remain contagious till all the scabs fall off.

What are the signs and symptoms?

The disease is similar to Smallpox, but less severe. After infection, it may take 5-21 days for manifestation of disease symptoms. The person is not contagious during this period.

Fever stage- 1-4 days

High fever, swollen glands, sore throat, cough, headache, body ache, chills/sweats, fatigue can occur. Small lesions may occur towards the end.

Rash stage- 1-3days after the onset of fever. Starts with mouth, tongue then face and gradually spreads in trunk and limbs. Rash lesions evolve from macules (lesions with a flat base) to papules in 3rd day (raised firm lesions) to vesicles in 4th to 5th day (filled with clear fluid) to pustules in 6th to 7th day (filled with yellowish fluid). At end of 2nd week they dry up and crust. Scabs remain for a week before falling off. Lesions are often painful and after crust formation they become itchy.

Recovery- Crusts may take 3 weeks to disappear. Scars may remain after recovery.

How to diagnose the disease?

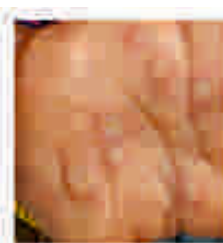
Can be diagnosed in laboratory after swab test or blood antigen examination.



Macule



Papule



Vesicle



Pustule



Crust

How can we differentiate it from Chicken pox?

In monkey pox rashes are seen in palm and sole, which is not present in chicken pox.

Can we treat a monkeypox patient at home?

Definitely, but under the guidance of a health care worker. Keep yourself hydrated, (Can take water, soup, tea, ORS) eat well, take rest. Breast feeding is a must for children below two years. In that case the caregiver must take precautionary measures like using masks and gloves.

Fever and pain management: Regular temperature monitoring, Sponging. In case of high fever and pain Tablet Paracetamol can be used.

Taking care of rash:

- Don't scratch the rashes.
- Clean your hands before and after touching lesions
- Keep your rashes dry. In case of painful ulcer clean moist bandages can be used.
- Keep rashes clean with sterilised water and antiseptics. Mupiroic Acid/Fucidin can be used.
- Cover with light dressing if extensive lesion present
- Rinse lesions mouth lesions with salt water. Vitamin C tablet can be used.
- In case of genital ulcer, warm saline sitz bath may reduce pain.
- In case of increasing pain and pus formation in lesions, oral antibiotics can be considered after consulting a doctor.

Care of eyes:

Protective eye pads, Antibiotic eye drops or oral antibiotics can be used along with Vitamin A supplements. Don't use steroid eye drops.

Taking care of mental health in isolation:

- o Do relaxing activities like meditation, reading books, listening to music
- o Can do light exercises also.
- o Stay connected
- o Do not hesitate to ask for help.

Regular monitoring needed for

Rash burden, Pulse rate, blood pressure, Oxygen saturation (if possible)

What are the Danger signs?

- o Rashes are getting painful.
- o Pain in eye or blurring of vision
- o Signs of infection—High fever, redness or pus formation
- o Increasing nausea, vomiting, diarrhoea

- o Difficulty in eating and drinking (Patient may need intravenous fluid)
- o Difficulty in breathing, chest pain, decreasing oxygen saturation. (Patient may need Oxygen),
- o Feeling dizzy, loss of consciousness, convulsion
- o Decrease in urine output

If any of the above signs develop, please transfer the patient to hospital.

How to protect others if a patient is in home isolation?

Avoid contact with anyone until all lesions have scabbed over, fallen off and a new layer of skin has formed. For daily supplies seek help from friends and family.

- o Isolate yourself in a separate room
- o If possible use a separate bathroom. Otherwise clean and disinfect with household disinfectants after every use
- o Clean hand frequently with soap and water/ alcohol based hand sanitizer.
- o Clean and disinfect frequently touched objects with soap and water / household disinfectants.
- o Avoid sweeping and vacuuming
- o Use separate utensils, towels, bedding and electronics.

If isolation in a separate room is not possible:

- Skin lesions should be covered to the best extent possible (e.g. long sleeves, long pants) to minimize risk of contact with others
- Use Well-fitted medical mask
- Avoid touching each other
- Clean hands often.
- Open windows.

Complications:

Pneumonia, Corneal infection and loss of vision, sepsis (Blood infection), Encephalitis (Inflammation of brain), miscarriage, death

Is it a life threatening disease?

It is a self limiting disease but can lead to severe illness and death (1-10%). Can be dangerous in Children.

Is there any vaccine for monkey pox?

No vaccine exclusively for monkeypox is not available. Previous small pox vaccination has proved to protective against it.

What should I do if I have a contact with a monkey pox patient?

Contacts should be monitored for 21 days in isolation for development of signs and symptoms.



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Since the last quarter of 2019, the people of the world have been facing a life threatening pandemic like they have not faced in the past hundred years, in the form of Coronavirus disease COVID-19 caused by SARS-CoV-2. While many families have lost their near and dear ones, a large percentage of the survivors (almost two-fifths) have been left permanently affected. Known as post-COVID conditions or long COVID, these affected multiple systems, and included cardiovascular, pulmonary, hematologic, renal, endocrine, gastrointestinal, musculoskeletal, neurologic, and psychiatric signs and symptoms. While for a complete list of conditions, we can refer to <https://stacks.cdc.gov/view/cdc/117411>, the most common incident conditions in both age groups were respiratory symptoms and musculoskeletal pain. This article focuses on the latter.

How it started

The SARS-CoV-2 which has a high degree of genetic and conformational homology with the SARS-CoV-1 and MERS-CoV, target the ACE2 receptor. In the MSK system, this makes the skeletal muscle, adipocytes, and endothelial cells the potential targets. The cytokine storm raised up by the SARS-CoV-2 leads to SIRS and a pro-thrombotic state, aided by the long term limitation of mobility, and this plays part of the Pathophysiology. The presence of at least one circulating autoantibody in at least 45% of COVID-19 survivors, is leading to a number of autoimmune conditions like RA, SLE and psoriatic Arthritis.

How it manifests

Fatigue is the most prevalent manifestation, lasting for 2 to 7 months, followed by arthralgia and myalgia.

Osseous Manifestation

Articular and Peri-articular pains, often associated with osteonecrosis / avascular necrosis, precipitated by corticosteroid usage and hypercoagulable state. Risk factors include high dose, prolonged use, multiple types of steroids, male sex, smoking or alcohol usage, concomitant cardiovascular or cerebrovascular disease. Common sites are the femoral head, knee, humeral head, talus and calcaneum. COVID toes, also known as chilblain like or pernio like lesions, are localized acral cutaneous erythematous eruptions commonly involving the toes more often than the fingers. This is most commonly seen in teens and young adults, especially in immunocompetent

Post Covid Arthritis

patients or those with mild disease, probably caused due to vasospasm.

Muscular Manifestations

Myalgias and fatigue unrelated to disease severity. Severe muscle injury can be associated with multisystem organ failure. This includes myoglobinuria in the setting of rhabdomyolysis, which can lead to renal insufficiency, and involvement of respiratory muscles, which can worsen dyspnoea related to respiratory failure. The more severe diseases are more common in the critically ill and elderly patients.

Articular Manifestation

Arthralgias. Synovitis related to a primary post viral inflammatory arthritis or other auto immune rheumatologic conditions such as RA, SLE, or psoriatic arthritis. Reactive arthritis seen during the recovery phase is usually monoarticular or oligoarticular. Joints involved include but are not limited to large joints like knee, wrist, shoulder (adhesive capsulitis), ankle and small joints of hands and foot.

Hematologic Manifestations

Hypercoagulability and pro thrombotic state associated with COVID-19 accounts for these manifestations. Recurrent Deep Vein Thrombosis, Arterial Thrombus and spontaneous Musculoskeletal haemorrhage especially in the skeletal muscle.

Secondary Infections

Rare in the immunocompetent patient. Intramuscular abscesses, septic, periprosthetic infections and soft-tissue abscesses may occur in the immunocompromised patient and those with uncontrolled diabetes mellitus.

Peripheral Nerve Manifestations

Patients who are critically ill and require ventilation and may manifest with GBS, toxic neuropathy, critical illness polyneuropathy (CIP), compressive neuropathy, and position-related neuropathy. A significant increase in Guillain-Barré syndrome has been reported. Post COVID reactivation of herpes is debilitating and often disfiguring, and in most cases leading to permanent anesthesia. Extremity neuropathies most often involve the sciatic and common peroneal nerves or present as compression within fibro-osseous tunnels such as the carpal and cubital tunnels.



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Hand-foot-and-mouth disease

In recent few days, there is a surge in incidence of a particular viral infection mainly in children in community. The peculiar pattern of the symptoms are making parents worrisome. This viral infection is called Hand-Foot-Mouth Disease. Hand-foot-and-mouth disease is a mild, contagious viral infection common in young children. It is usually associated with fever, skin rash and flu-like symptoms.

What causes HFMD?

HFMD is most frequently caused by Coxsackievirus A16 and Enterovirus A71.

What are the symptoms?

low-grade fever, but sometimes temperature can go beyond 103 degree F.

sore throat

malaise

rashes (blisters) on the hands and soles of the feet, buttocks, Groin



painful vesicles/ulcers on the tongue, oral cavity, palate, lips.



Fussiness in infants and toddlers.



Loss of appetite.

How does it spread?

The illness spreads by person-to-person contact with an infected person's: Nose secretions or throat discharge Saliva Respiratory droplets sprayed into the air after a cough or sneeze Fluid from blisters Stool Most common in children because they need frequent diaper changes and help using the toilet. They also do not wash their hand properly and tend to put their hands in their mouths. Your child is most contagious during the first week of illness. But the virus can remain in the body for weeks after the symptoms go away.

Infected child can shed virus in stool for about 6 weeks after infection and from throat for about 3-4 weeks. So that means your child still can infect others. Adults can pass the virus without showing any symptoms of the disease. Outbreaks of the disease are more common early autumn and rainy season.

Who Can get infected?

The disease mostly affects children below 5-7 years of age, but anyone can get it. Children in child care settings are especially vulnerable because the infection spreads by person-to-person contact. Adolescents and adults can get HFMD though they have immunity and antibodies against hand foot-and-mouth disease.

Complications: The main complication of HFMD is Dehydration as the illness causes painful oral ulcer in the mouth and throat, making swallowing difficult. So, Encourage your child to drink more fluids to keep themselves hydrated or else if there is dehydration, the child needs admission and intravenous fluids. Hand-Foot-Mouth disease is usually minor and self-limited illness. Symptoms disappear after few days. But there may be some life-threatening complications to your child like:

1. Meningitis: infection and inflammation of the membranes (meninges) and cerebrospinal fluid surrounding the brain and spinal cord.
2. Encephalitis: this rare complication involves inflammation of brain.
3. Nail shedding: has been observed following HFMD.

What should you do?

You can lower your child's risk of hand-foot-and-mouth disease in many ways: Wash hands often and Properly
 a. Wash your hands for at least for 20 seconds sing soap and water. If soap and water are not available, use hand sanitizer. b. Be sure to wash hands after handling diapers/ using toilet. And also before making and eating food. Through wash is also needed after blowing your nose, sneezing and coughing. Use tissues to trap germs when you cough or sneeze. Teach Good Hygiene a. Show your children how to wash their hands properly and help them do it often. Teach them

...Contd on page 21



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Parental approach to vector borne illnesses: A stitch in time...

Fever is the commonest cause for parental anxiety and seeking health care attention at paediatric age group. The incidence is even higher at monsoon and early autumn, as part of India harbouring a tropical climate, invites a triple pronged attack of seasonal flu, malaria and dengue in this season. Though the first one is mostly airborne or aerosol borne malaria and dengue are vector borne diseases transmitted by mosquitoes. In this article we shall concentrate on various vector borne diseases those affect the paediatric population in India.

Mosquitoes are main culprit for vector borne diseases in our country. They ingest the micro organisms during a bloodmeal from the host which are allowed to be multiplied in its body and transmit it further to the targets during its subsequent bloodmeals. Thus, Anopheles mosquito causes malaria, aedes causes dengue and chikunguniya, culex causes Japanese encephalitis and filariasis.

When to suspect a vector/mosquito borne illness:

Usually majority of these illnesses present with fever, diagnosis at initial stages become sometimes challenging even by experienced clinicians due to overlapping symptoms with seasonal flu. However, high grade ushering fever at specific intervals, sometimes with chills and rigor, appearance of yellowish discoloration of body surfaces, often point towards malaria. Dengue often presents as high fever with rashes between second to sixth day of fever, bone pain, muscle pain, eye pain while moving eyeballs. Chikunguniya on the other hand presents with a predominantly small joint pain, back pain and fever. Another vector borne disease scrub typhus also presents as fever with rash which is a notorious disease and may affect every organ and system in body. So any case of fever with rash must seek immediate expert opinion.

Care of a febrile child :parental education

Always document axillary temperature for three minutes with a digital thermometer.

Keep baby light clothed.

Hydrate your kid properly to ensure enough urine output. Don't force feed as it invites vomiting.

Use paracetamol to control fever as prescribed by your Paediatrician(15mg/kg every 4-6 hours). It's the safest drug to use for fever. It may not render the child completely afebrile always but it will bring down the discomfort level. Sometimes, ibuprofen may be used at judgement of your Paediatrician to control fever.

Tepid sponging (28-30°C) can be used as an useful adjunctive method to control fever along with medicines.

Important Don't s

No ice bathing

No mercury thermometer use in children

No self / OTC medication especially steroids, antibiotics and non permitted NSAIDS to obtain a 'Magic response'.

Be relaxed if

- Your child is playful while afebrile
- Having normal feeding or sucking
- Having normal urine output
- Seek immediate assistance if
- Child having altered mentation
- Rapid breathing
- Abnormal movement
- Jaundice
- Fever more than 104°F
- Recurrent vomiting, unable to feed
- Neck stiffness
- Black / red / poor urine output
- Severe pain abdomen
- Bleeding from any site

Remember, though almost all the diseases settle down after the fever is gone, dengue can have its critical phase starting when your kid has just become afebrile! Here lies the importance of investigation and diagnosis confirmation.

When to test

As per government policy, testing should be done at earliest opportunity. However for practical purposes fever that is not accompanied by any other localised

symptoms like runny nose, runny eyes, cough, stomach upset should be investigated for vector borne causes without delay. For all other cases, let your Paediatrician decide the need for investigation as case to case basis.

Prevention is better than cure:

As we know mosquitoes are the main culprits for vector borne illnesses our main focus would be avoiding mosquito bites over babies and children and to control the mosquito breeding sites at our locality.

Mosquito control:

We should keep our premises clean. Check all the potential water storage sources like empty vessels, flower pots, under freezer trays, tyres, cans, caps. Clear all unnecessary water storage materials. Change water of air coolers, flower pots at regular intervals. Use larvicidal fishes at waterbodies. Check for any clogged drains or rain gutters. Slightest water storage can harbour mosquito larvi and act as their breeding site. Lawn trimming must be done at regular intervals as it's a potential hiding site for adult breeders. Encourage use of mosquito repellent spray at indoor and outdoor premises. Local government bodies must be pushed for regular fogging of the locality at rainy season which will prevent the mosquito breeding to a large extent.

Personal protection measures:

We should install nets at households and classrooms windows to limit mosquito entry.

To keep your baby/child safe from mosquito bites :

Use of mosquito nets is highly recommended. Check whether it's well tucked under the bed and the top part must not collapse over your child. Also check for any holes in the mosquito net. Insecticide treated mosquito nets are superior options in this regard.

You can use certain mosquito repellent creams on exposed area of your child at the age over three

months. Don't apply it over the hands, eyes, face, lips and cuts. Follow package inserts or leaflets for more specific information. Always check by applying over a small area of skin first, to see if any allergic response occurs in first few days.

Mosquito mats or liquid vapourisers are effective options if used cautiously as the chemicals used are potentially non toxic. However they may be ineffective in case of power cuts and kids should enter a room after the vapourisers are switched off.

On the contrary, mosquito coils are to be used in a room with good ventilation and must not be used for children with bronchial asthma or reactive airway diseases.

Medication and vaccination:

Unfortunately no other vector borne diseases except Japanese encephalitis is currently having effective vaccination. Dengue vaccination is at its final trial phase and may be available soon. Both government and private sectors are offering JE vaccination starting from nine months which must be taken in endemic areas and in consultation with Paediatrician in the non endemic areas.

Like most of the other viral illnesses Dengue and Chikunguniya are self limiting diseases which just need early diagnosis and effective supportive management accordingly.

Malaria and scrub typhus needs to be diagnosed at the earliest opportunity as these two disease are having definitive treatment regimen with good outcome.

To conclude, we can win the battle against these vector borne diseases with public awareness about need for controlling vectors, active participation by government bodies, early diagnosis followed by appropriate treatment and following the preventive measures of vector control and personal protection meticulously at household and social level.

...Contd from page19

Hand-foot-and-mouth disease

not to put their fingers, hands or any objects in their mouth. b. Maintain good hygiene of all family members including your children. Avoid close contact a. As this disease is highly contagious, infected person should limit their exposure to others by avoiding close contact. b. Keep the children with disease out of their school/hostels/nursery. But as soon as they are feeling better, they can go back to school or nursery. There is no need to wait until all the blisters have healed.

Disinfection of surfaces and toys as feasible. Avoid

sharing of utensils and cups with infected persons. Proper disposal of wastes should be done meticulously. Consult with Doctor as soon as possible particularly if your child is below 6 months of age/ having fussiness/ painful oral ulcer making them difficult to swallow fluids. Control of fever with antipyretics(after consulting your doctor). Maintain good hydration with oral fluids. Avoid acidic drinks, such as fruit juice. Take liquid and soft foods like breastmilk, yoghurt etc. – avoid hot and spicy foods.

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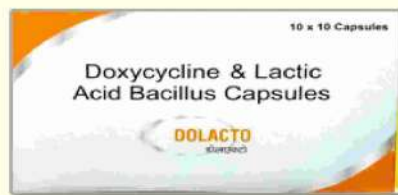
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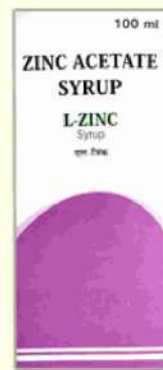
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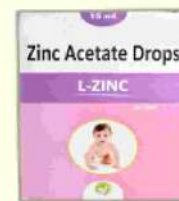
2GEN DRY SYP



DOLACTO



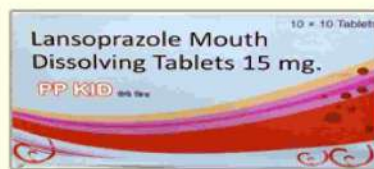
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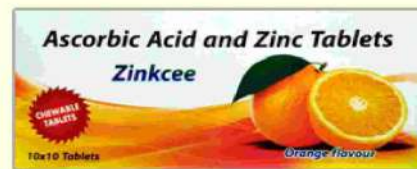
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