

Secretary Report ----- !

Knowing is not enough; we must apply.

Willing is not enough; we must do. -Goethe



Dear Members

Greetings from IAP Delhi!

It gives me immense pleasure to interact with you in New Year 2006 with new dawn and new hopes for IAP Delhi. I take this opportunity to share with you information on some important developments and activities under taken after taking over charge from past executive to make IAP Delhi a lively, interactive and dynamic

organization. Your suggestions and criticism (Positive or Negative) will be our strength. This initiative is for you, the honorable member, to participation in the IAP Delhi on going activities and projects. The following activities/projects are undertaken, few are new initiatives and few are implementation of past decisions of the GBM:

Meetings of the executive Board:

First introductory meeting of the new executive was held on 24-12-2005 in the Office and several important decisions were taken. Now, EB is meeting before every Monthly Clinical meetings as earlier. Beside these EB meetings a quarterly meeting in office will held to review the activities and past decisions.

Charge Handover Take Over:

Charge was taken over from past executive in the office of the Delhi IAP on afternoon of december31, 2005.

Monthly Clinical Meetings:

The monthly Clinical meetings were suspended due to formation of the branches. However, a large number of members were missing this monthly important event of IAP Delhi since its inception. The current EB decided to continue this monthly event as per earlier schedule in association with branches to increase their activities and participation in the organization. Every branch will be associated in two clinical meetings and these meetings will be their monthly activity as well.

Accredited on Monthly Clinical Meetings by DMC:

The Delhi Medical Council has accredited the monthly clinical meetings for "11/2 CME Credit Hours".

Meeting with senior members:

The president Dr. M.M.A. Faridi and I met with Dr. Veena Kalra, Dr. R. N. Salhan, Dr. S. K. Mittal, Dr. Subhash Arya, Dr. A. K. Dutta, Dr. Arvind Taneja, Dr. M.S. Prasad, Dr. A. P. Dubey to know their views, opinion and suggestion for dynamic and purposeful growth of the organization. Some very important suggestions have come from these members and that will be discussed in EB meetings and will be important guiding forces to give new direction to the Delhi IAP.

Disease Outbreak Response Committee:

A "Disease Outbreak Response Committee" has been constituted under chairmanship of Dr. A. K. Dutta with expert and eminent members from IAP Delhi, MCD, Delhi Government, NICD, GOI, WHO, AIIMS, UNICEF, NDMC, DFW etc. This

committee will be responsible to formulate the guidelines, policy document, advice measures to control disease outbreak, educate public and media briefings.

Renovation of the office:

The renovation of the IAP Delhi office has been undertaken after taking the charge. The following steps have been taken to improve and streamline the functioning of the office;

1. Reorganization of the record keeping and development of office procedures.
2. Condemnation of the old and irreparable items
3. Using of the old stationery lying in the office
4. A Legal adviser has been appointed to update the society's constitution.

Child friendly Delhi Initiative:

A Committee on Child friendly Delhi initiative has been constituted under chairmanship of Dr. R. N. Salhan, ADG and Medical Superintendent. Other members will be inducted very soon in consultation with Dr Salhan. Members requested to come forward and be part of very important and historical initiative of Delhi IAP. Very soon a lot of activities will be undertaken as part of this initiative.

Academic planner 2006:

An informative and comprehensive academic planner has been circulated to all members recently. Efforts have made to include all international, National and Local events being organized by Delhi IAP, Branches and members in Delhi. All important weeks of IAP and Days are part of this planner.

Revamping the Web site:

Steps have taken to revamp the official web site of the branch. The web site will have new design and features.

New Member's Directory:

The branch is intending to publish a new and updated member's directory. This time member's credentials will be published with their photograph.

Miscellaneous activities:

Introduction of printing of the monthly meeting notice on letter head of the Delhi IAP. 35 new members have been enrolled. List of total pediatricians registered with DMC has been procured and a campaign is initiated to enroll the left out pediatricians.

Strength of IAP Delhi as on 31-03-06

Life Members	955
Associate life	19
Affiliated	02
Ordinary	03
Total	979

At Your service
Dr. K. C. Tamaría
General Secretary

Message From Honorary Secretary General

Indian Academy of Pediatrics



Dear Colleagues

Greetings from the Indian Academy of Pediatrics !

It is my pleasure and privilege to be asked to write a piece for this IAP Delhi State Branch bulletin. Firstly, I am very proud to be part of this new concept, as I am aware of the time energy and effort required for a bulletin. My heartfelt congratulations to Dr Tamaría and the whole team and thank you for giving me this opportunity for being a small part in this mighty venture.

As always, I feel communication is key to any successful organization and usage of such bulletins will ensure that many people are regularly and ongoingly updated in invaluable information necessary for the growth of themselves and the society overall. This year the IAP Plan of Action will be packed brim with activities and meetings, all of which will be featured in bulletins such as this, and Academy Today thus

ensuring wide coverage and awareness of all mainstream events.

It is with huge appreciation of Dr Nitin Shah that we have already this year conducted so many meetings and will be continuing to conduct 180 plus city level workshops / CME's during the second half of this year.

Finally once again I wish Dr Tamaría and his team a successful endeavor and my congratulations to you all, keep up the good work.

With sincere regards,

Dr Deepak Ugra
Honorary Secretary General
Indian Academy of Pediatrics.

Message from President

IAP, Delhi State Branch



Dear Colleagues

Greetings to all fellow colleagues !

First, let me thank all of you for electing me as President of our vibrant association of eminent academicians, astute clinicians and excellent researchers. I am well aware that the Indian Academy of Pediatrics, Delhi State always had very efficient, upright and dedicated pediatricians as its presidents, who were men of letters in their own right. I wonder whether I will be able to carry forward, from where they left, let alone match their wisdom or do better than them. But one thing I can assure you that I will not be seen wanting in my sincere efforts to promote, support and protect the interest of the Academy in particular and that of children in general. I will ensure that all of us, in whom you have reposed faith to run the affairs of the Academy, follow rules and regulations of the Academy, both in letters and spirit. I will seek advice from each one of you and shall turn for guidance towards my seniors, if clear guidelines on any issue is not available in the constitution of the Academy.

Having promised so much, friends, I see IAP Delhi State as an effective tool to protect rights of children, as envisaged in the UN Charter, and to which our country is a signatory. In our state we can impress upon the government, private sector and non-governmental authorities and agencies, to also consider immediate and long term implications of any decision, on the over all growth and development of children, be it educational, social, cultural, health, civic or economic policy. We have decided to make Delhi a Child Friendly City. I am sure me and my team will get your unstinted support and cooperation, as you have been giving to my predecessors, to achieve this goal.

Other area of concern is, not having our 'own' office. Our vision is to have an IAP Bhawan with at least two double bed guest rooms. Sincere efforts have been made in this regard in the past and we will continue to pursue the matter. We will also need money for this and here comes the big question, "how to raise money?" Well, we are trying to pull purse strings tight, cutting down on expenses, and utilizing all available resources to the maximum. We have decided to implement IAP Delhi State decision to raise money from all events, in which it is a part. A system is being set up to streamline association of IAP Delhi State with all scientific activities. We will endeavor to infuse a blend of academics and socialization in the Academy so that all our members take pride to be associated with this great organization.

Recently we proposed to the state government to work with them to implement child welfare programs, like immunization. We got very encouraging response from them. I take this opportunity to request all of you to give your suggestions to raise visibility of our association in the public as well in the government.

May God give us strength. Ameen!

Jai Hind

DR M.M.A.Faridi
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Professor & Head Department of Pediatrics UCMS, Delhi

Basics of Mechanical Ventilation in Children

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Mechanical ventilation is a life saving method especially in acute problems where the disease process is reversible. It seems that it is very simple to put the patient on ventilator but it is not so, knowledge of respiratory system and the use of ventilators is of utmost importance.

VENTILATORY SUPPORT IN CHILDREN (BASICS)

The advent of modern ventilatory therapy in 1980, was a prominent milestone in the history of advanced paediatric intensive care. It is a sheet anchor of any modern Paediatric/Neonatal critical care unit, for reducing the mortality and morbidity. Optimal use of mechanical ventilation requires a thorough knowledge of physiology and applied mechanics of lungs and recognition of diverse mechanisms of respiratory failure. The recognition and understanding of each patient's pathophysiology combined with appropriate use of the available ventilatory options is the most vital element in decreasing mortality and morbidity induced by our supporting efforts.

(A) MECHANICS OF RESPIRATION:

Before explaining the Pulmonary mechanics in detail it is better to elaborate certain basic terminologies which will be used frequently. These include:

Inspiration : It is an active process. The contraction of respiratory muscles increases intrathoracic volume. The movement of diaphragm accounts for 75% change in intrathoracic volume during quiet respiration. The intra pleural pressure falls from minus 2.5 mm Hg to minus 6.0 mm Hg, pressure in the airways become negative, leading to airflow into alveoli. At the beginning of inspiration the intrapleural pressure varies, it is -2.5mm Hg at the base and -10mm Hg at apex. The lungs at apex are more inflated i.e they are more stiff (less compliant) at apex. During strong inspiratory effort the intrapleural may decrease further to -30mm Hg.

Expiration : It is a passive process.

Lung Volume : Total volume of air which is occupied by lungs.

Tidal Volume(Vt) : The volume of air that moves into

the lungs with each tidal breath

Inspiratory Reserve Volume (IRV) : The volume of air inspired with maximal inspiratory efforts in excess of the tidal volume.

Expiratory Reserve Volume (ERV) : The volume of air expelled by an active expiratory effort after passive expiration.

FEV1 (Timed Vital capacity) : Volume of air expired during the first second of a forced expiration.

Respiratory minute volume : The amount of air inspired per minute.

Maximal Voluntary Ventilation/Max. Breathing Capacity : The maximum volume of gas that can be moved in or out of the lungs in one minute by voluntary efforts.

Closing Volume : The lung volume above at which airways in the lower, dependent parts of the lung begin to close off because of the lesser transmural pressures in these areas.

Dead Space : The gaseous exchange occurs only in the terminal portions of the airways the gas that occupies the rest of the respiratory system is not available for gaseous exchange with pulmonary capillary blood. The dead space include:-

(a) **Anatomic :** The respiratory system exclusive of alveoli.

(b) **Physiologic :** Volume of gas not equilibrating with blood i.e. ventilation of non perfused alveoli.

(B) V/P Ratio in Different Parts of lungs:- In the upright position, ventilation per unit lung volume and blood flow is greater at the base than at the apex.

- The relative change in blood flow from the apex to the base is greater than the relative change in ventilation, so the V/P ratio is low at the base and high at the apex.
- The predominant factors which influence distribution of inspired gases are compliance of lungs, thoracic wall & airway resistance.
- The Normal Values of V/P ratio at rest in adult is

0.8 (4.2 lit. per minute / 5.5 lit. per minute).

(C) Compliance (CL) :

- Depends upon the elasticity of the lung tissue and on initial lung volumes before inflation. Stiff lung means less compliant lungs and expansile lungs means highly compliant lungs.
- Determined by elastic forces of the lung, chest wall & surface tension within the alveoli.
- Defined as change in volume (V) per unit changes in pressure (P)

$$CL = \frac{V}{P} \text{ (L/cm H}_2\text{O)}$$

Normal Value = .005 lit./cm. H₂O

- Diseased lungs may have reduced compliance e.g. ARDS, Pneumonia, Pulmonary Oedema.

(D) Airway Resistance (R) :

- It is defined as the inherent capacity of air ways and tissue to oppose airflow.
- It is the pressure difference between the mouth & alveoli.
- Resistance (R) to the flow of gases in the respiratory tract depends on the difference of pressure (P) between the mouth & the alveoli per unit flow (V)

$$R = \frac{P}{V} \text{ (cm H}_2\text{O/Sec)}$$

(expressed as cm in water/lit./sec.)

Resistance is inversely proportional to 4th power of radius of airways.

- The airway resistance is predominantly contributed by medium sized bronchi.
- Even minor degree of narrowing can cause significant increase resistance.
- Airway resistance varies with age. In children less than 5 yrs., resistance is more in distal airways and in children more than 5 yrs., the resistance is more in proximal airways because the growth of distal airway lags behind as compared to that of proximal airways.

(E) Time Constant (Kt)

Defined as time taken by airways pressure & volume changes to equilibrate throughout the lungs.

- It is the product of airway resistance (R) and

compliance and is measured in seconds

$$Kt = R \times C \text{ (Sec)}$$

- It is a measure of how quickly the lung can inhale or exhale or how long it takes for pressure delivered in the proximal airways to reach the alveoli. One Kt fills 63% of an alveolus & 2 Kt fill in 87% . three to 5Kt are required for complete filling or emptying of an alveolar unit.
- In a normal infant I Kt = 0.15 sec. & 3 Kt = 0.45 sec. Normal Kt = 0.005 X 30 = 0.15 sec.
- Various diseases can alter Kt. In normal lungs, the difference between the Insp. Kt & Exp. Kt is minimal, but it may be increased in various diseases e.g. in bronchial asthma.
- If sufficient time is not allowed in expiration air trapping will occur.
- Diseases causing decrease in compliance (Stiff lung) the Kt will decrease. Stiffness cause faster filling and emptying of the alveoli (fast alveoli). eg. in RDS.

Basic Terminologies Used In Ventilatory Care.

(A) Frequency/ Ventilatory Rate:

The rate of mechanical breaths per minute set on the ventilator.

(B) Inspiratory Time :

Time allowed for inflow of air gas mixture.

(C) Expiratory Time :

Time allowed for outflow of air gas mixture.

(D) I:E Ratio :

Ratio between inspiratory and expiratory time. Adjustment of the inspiratory time is the primary method by which I:E ratio is altered.

Normal setting for Insp. Time range from 0.4 to 1.5 seconds depending on Vent. Rate and lung disease.

Expiratory times may be decreased to <0.5 sec. only in conditions with reduced compliance & shortened Kt.

(E) Peak Inspiratory Pressure (PIP) :

Highest pressure reached during the inspiration. It depends upon V_t., Inspiratory gas flow and compliance of chest & lungs.

PIP level is usually kept as low as possible because

of the risk of barotrauma.

(F) Tidal Volume (Vt):

Volume of gas that flows in and out of the lungs during quiet breathing. In children Vt-7-10 ml/Kg.

(G) Minute Ventilation:

Product of Vt and the ventilatory rate & reflects the volume of the gas moved in and out of lungs in a minute.

(H) Positive End Expiratory Pressure (PEEP)

It is the base line (minimum) positive pressure in the airway during expiration. It is designed to keep alveoli from collapsing at the end of expiration. Physiological PEEP 2-5 cm.H2O

- A minimal PEEP of 3 cm should be maintained.
- The application of PEEP while using ventilator is very useful when lungs are diffusely non-compliant & have tendency to a telectasis,

(I) FIO2

Stands for fractional inspired oxygen concentration where 100% O2 is represented as 1, oxygen in room air (21%) as 0.21 and so on.

(J) Map Mean Airway Pressure:

- (a) It is a measure of average positive pressure generated in the lung throughout the resp. cycle.
- (b) It is not a ventilatory setting.
- (c) Critical factor in determining oxygenation and

potential for barotrauma.

- (d) Determined by PIP, PEEP, Inspiration time and flow rate.
- (e) MAP- can be increased by increasing Insp. iratory Flow rate, PIP, I:E ratio and PEEP.
- (f) Increase in MAP is associated with improved oxygenation. Marked increase in MAP is counter productive, as it may lead to :-
 - (i) over distension of alveoli resulting in right to left shunting of blood in the lung.
 - (ii) Decrease in cardiac output and reduction in O2 transport to the tissues.

(K) Sensitivity/ Trigger

- (e) This refers to the ease with which a ventilator can sense the patient demands for a breath.
- (f) Usually expressed as the amount of negative pressure or change in flow that patient must create through spontaneous breathing efforts to 'SWITCH ON' the ventilator to deliver a mechanical breath.
- (g) Setting the trigger to low may lead to over triggering and the patient being over ventilated.

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Announcement

The executive board has decided to acknowledge/appreciate the works of the done by honorable members in the annual function for following activities:

1. Public Health Education talk on TV and Radio.
2. Write up by members in the news papers, news magazines etc.
3. Talk on Health issues in the schools.
4. Contribution to IAP Press Syndicate
5. Community oriented activity like health check-ups, Camps, rehabilitation works
6. Involvement of members in PPI, CSSM, UIP and ARI programs of GOI, Delhi Gov., WHO, UNICEF.
7. Any other significant contribution which help to achieve the objectives of the Branch.

Avian Influenza - Potential future pandemic in Humans

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Bird flu also known as Avian flu, Avian Influenza, and Fowl Plague is an infectious disease of birds caused by influenza virus belonging to the family orthomyxoviridae.

These viruses circulate among birds world-wide. But on rare occasions can infect other animals including humans. They are classified into three types A, B and C based on their matrix protein and ribonucleo proteins.

Influenza A-viruses are further divided into several sub-types based on two surface proteins known as haemagglutinin and neuraminidase proteins (H & N respectively). Until recently only 15 H types were known among influenza A viruses but now H-16 has been isolated from black headed gulls caught in Sweden and Netherlands in 1999 and was reported in 2005 like wise a total of 9 sub-types of N-proteins are known. Many wild birds carry these viruses with no apparent signs of harm. Other bird species, including domestic poultry, develop disease when infected. The infection can be lethal to them.

WHO has reported the outbreaks of highly pathogenic avian influenza in birds affecting a number of countries in Asia, the Middle East Europe and Africa.

All the H sub-types infect birds where as only H1, H2 and H3 infects human beings. However there are 3 sub-types which can infect both the species. These are H5, H7 and H9. To date all outbreaks have been caused by viruses of the H5, H7 viruses.

The first human case was reported in 1997 in Hong Kong when influenza A (H5N1) infection resulted in 18 cases with 6 deaths. This virus has re-emerged in 2003 in a number of countries in Asia in a slightly altered form of the virus and the number of human cases has been increasingly reported since then.

It seems that this virus is spreading very fast to affect other areas. It has now spread to many countries of the world by migratory birds and possibly through trade in poultry. Currently the strain which is circulating among humans is identified to be the (H5N1) strain of influenza A virus.

Countries with human cases in the current outbreak

To date human cases have been reported from many countries, most of them are in Asia.

Table 1 : Outbreaks of human disease due to avian influenza viruses (As of 13 march 2006)

YEAR	Strain	Country	Number of confirmed human cases	Number of confirmed human deaths
1997	A/H5N1	Hong Kong	18	6
1999	A/H9N2	Hong Kong	2	0
2003	A/H5N1	Hong Kong	2	1
2003	A/H7N3	Canada	2	0
2003	A/H7N7	Netherlands	84	1
2003	A/H9N2	Hong Kong	1	0
03-06	A/H5N1	Viet Nam,*	177	98

*including Cambodia, Indonesia, Iraq, China, Turkey, and Thailand

If human disease due to influenza A (H5N1) is continuous to occur a new pandemic is likely to erupt because the current world population does not have immunity to this new virus subtype as we were never exposed to it. As these viruses are highly species specific usually infect birds, human infections remain a rare event. The virus does not spread easily from birds to humans or readily from person to person But it is a reality.

This is not clear how this bird virus was able to cause disease in humans. One possible explanation can be genetic reassortment which means that there is exchange and mixing of the genetic materials when one species is co infected by both the avian and mammalian influenza viruses producing a new hybrid influenza virus. The population will have no immunity to this new sub-type and also existing vaccines can not confer protection. So it can be a source of potential future pandemic.

Influenza viruses are inherently unstable. As these viruses lack a genetic proof-reading mechanism, small errors that occur when the virus copies itself go undetected and uncorrected. Specific mutations and evolution in influenza viruses cannot be predicted, making it difficult if not impossible to know if or when a virus such as H5N1 might acquire the properties needed to spread easily and sustainably among humans. This difficulty is increased by the present lack of understanding concerning which specific mutations would lead to such changes.

Since 1997, when the first human infections with the H5N1 avian influenza virus were documented, the virus has undergone a number of changes.

It is suspected that, this virus jumped from avian species to human species for the first time in 1997 breaking the species barrier. The infection of humans coincided with an epidemic of Hong-Kong's poultry population during that time the following table shows other examples of such coincidences.

Table 2 : Example of co-occurrences with outbreaks of avian influenza in poultry to human disease due to avian influenza virus

YEAR	VIRUS	PLACE	TYPE OF BIRDS	MORTALITY
1997	H5N1	Hong kong	Chickens	1.5 million destroyed
2003	H7N7	Netherlands	Chickens	30 million destroyed
2004	H5N1	Vietnam	Ducks	27 million died or destroyed
2004	H5N1	Thailand	Chickens, ducks, Gease, Turkeys	27 million died or destroyed
2004	H7N3	Canada (British Columbia)	Chickens	Poultry workers became ill

Influenza virus has innate ability of initiating pandemics because of the phenomenon of genetic reassortment which is inimitable to this virus. This is attributed to its genetic material which exists as 8 segments of RNA allowing it to be exchanged and merged when given a chance.

H5N1 virus is probably circulating for the first time. Vulnerability to this would be universal if it somehow acquires transmissibility among humans though transmission has not continued beyond one person.

Moreover, it has now expanded its host range including cats for the first time in Thailand. These cats were fed infected carcasses. Outbreaks of H5N1 among poultry are ongoing in a number of countries and now it has hit our country too.

Transmission of the influenza A (H5N1) Virus in humans

The route of entry of the viruses in a healthy human is through the mouth and nose. Though it is

unlikely but now more than 170 cases have been reported. Transmission occurs in a similar way as in birds but so far there is no evidence of human to human transmission. Most cases have resulted from direct or close contact with infected poultry and surfaces. The viruses are present over mucous membranes of mouth and nostrils and in the secretions like saliva, sputum and droppings.

Spread within the country

The disease spreads easily from one poultry farm to another. Large amounts of viruses are secreted in bird droppings, contaminated dust and soil. Air-borne viruses can spread from bird to bird causing infection when the virus is inhaled. Contaminated equipment, vehicles, feed, cages or clothing, especially shoes can carry the virus from farm to farm. The virus can also be carried on the feet and bodies on animals, such as rodents, which act as "mechanical vectors" for spreading the disease. Limited evidence suggests that flies can also act as mechanical vectors.

So called "wet" markets, where live birds are sold under crowded and sometimes-unsanitary conditions can be another source of spread.

Clinical features

The onset is abrupt so much so that patients can recall the precise time they became ill. The spectrum of clinical presentations is wide, ranging from a mild, febrile respiratory illness to very severe manifestations like multiple organ dysfunction. Even cases with **atypical syndrome** have been reported.

- Systemic :- headache, Fever often high grade (38-41°C), chills, myalgia, arthralgia, malaise, cough, sore throat
- Ocular: - pain on movement, photophobia, burning eyes
- Pneumonia, shortness of breath which may lead to severe life threatening complications like respiratory failure. Sputum production is variable and sometimes blood stained.
- Physical Findings: - hot & dry skin, injection of mucous membranes, post nasal discharge, mild cervical lymph-adenopathy, wheezes & scattered crept in chest.

Chest radiographs show patchy, multifocal to diffuse interstitial infiltrates, consolidation and collapse of any extent.

The median time between exposure and onset of illness is 3 days (range 2 to 4 days). Any type of influenza tends to be more serious in children, elderly persons above 65 years of age and the chronically sick person.

Atypical symptoms

Above and beyond respiratory illness now it is known to cause some atypical presentations like severe diarrhea and encephalitis. 4 year old Vietnamese child with H5N1 avian influenza presented with 2 days history of fever, headache, vomiting and diarrhea (approx. 10 episodes per day), the stools were watery without blood and mucus.

Laboratory tests on admission were unremarkable and chest x-ray was normal. On 3rd day he became comatose, developed respiratory failure on 5th day. H5N1 influenza A virus was isolated from cerebrospinal fluid, fecal, throat, and serum specimens. The patient's 9 year old sister had died 2 weeks earlier from a similar clinical syndrome.

Children up to 12 years of age are infective from 1 day before up to 21 days after the onset of symptoms. However, adults and children more than 12 years of age are infective from 1 day before the onset of symptom and up to 7 days after the resolution of fever.

People at risk

Workers handling poultry in farms, markets and involved in culling activity, veterinary workers and health workers even the families of these workers are at higher risk of acquiring the infection.

Case Definitions for Influenza A/H5 Possible / suspect case of Influenza A/H5

- Person with acute respiratory illness, characterized by fever (Temperature >38°C) and cough and/or Sore throat & EITHER
 - Contact with a confirmed case of Influenza A/H5 during the infectious period
- OR
- Recent (less than 1 week) visit to a poultry farm in an area known to have outbreaks of HPAI
- OR
- Worked in a laboratory that is processing sample from person or animals that are suspected from HPAI infection

Probable Cases of Influenza A/H5 case

- Possible case
- AND
- Limited laboratory evidence for influenza A /H5 (H5 specific antibody detected in a single serum specimen)
- OR
- No evidence for another cause of disease

Confirmed Influenza A/H5 Case

Suspect or probable case with :

- Positive viral culture for Influenza A/H5
- OR
- Positive PCR for Influenza A (H5),
- OR
- Positive IFA test using influenza A/H5 monoclonal antibodies
- OR
- A 4-fold rise in H-5 specific antibody titer

Lab Diagnosis

Blood examination shows Leucopenia (particularly Lymphopenia), thrombocytopenia (mild-moderate),(if total leucocytes count >15,000 it is suggestive of superimposed infection), raised aminotransferases, raised creatinine, hyperglycemia often associated with corticosteroids use.

A number of tests can help in diagnosis

Detection of antigen in nasal secretions by :

- immunofluorescence test
- antigen capture ELISA with monoclonal antibody to the nucleoprotein
- Polymerase chain reaction

Virus isolation in :

- Cell line Madin-Darby Canine Kidney cell (MDCK)
- Egg inoculation

Serological test in paired serum samples :

In India, the facilities of laboratory diagnosis for avian influenza in humans are available in National Institute of Virology, Pune, and NICD, Delhi. For diagnosis in animals, the facilities are available at high security animal disease laboratory in Bhopal and other regional laboratories of the department of Animal husbandry and Dairying.

Treatment / management

This is a highly infectious upper-respiratory infection lasting for several days and requires only symptomatic treatment like treatment of fever with acetaminophen. Avoid salicylate in children because of risk of Reyes syndrome. For severe cases of influenza would require admission to the hospital, intensive care, monitoring of oxygen saturation and ventilator support.

As such there is no role of antibiotics except in the setting of secondary bacterial infection. In contrast to isolates of 1997, H5N1 isolates currently are resistant to M2 inhibitors i.e. Amantadine and rimantadine. Agents of clinical interest include oseltamivir, Zanamivir, Peramivir, long acting topical neuraminidase inhibitors, Ribavirin and possibly Interferon. Role of immunomodulators (Corticosteroids) is uncertain. Patients who do not require admission should be educated about personal hygiene and infection control measures.

Earlier only Roche, a Swiss pharmaceutical company had the patent to make Tami flu. But now it has sub-licensed an Indian company the Hetero group, Hyderabad, which is charging a rate of Rs.710 per strip of 10 capsules. Thus it has become the first company to produce Oseltamivir under the brand name Fluvir. It is already supplied over 7 lac doses to the Indian government (as on March, 18th 2006)

Another Mumbai-based pharmaceutical company, Cipla, is asking for Rs.1000 per strip of 10 capsules. Ranbaxy is also working on making the formulation.

According to WHO there is no direct clinical trial evidence that shows that oseltamivir is effective in H5N1 disease because such studies have not yet been conducted.[Web site www.who.int.] also it is important that it should be given within 48 hours of symptoms onset.[according to the WHO fact sheet on its web site].

ANTI - INFLUENZA DRUGS OF INTEREST		
	Neuraminidase Inhibitors	
Generic name	Oseltamavir	Zanamavir
Brand name Prophylaxis	Tami flu Older than 13yrs. Close contacts:75 mg PO once daily for at least 7 days; Community contacts: same dose & frequency but duration is prolong Older than 1yrs. start within 48 hours of symptom onset	Relenza Not approved
Treatment	15 kg : 30 mg po bid for 5 days; 15-22 mg: 45 mg PO bid for 5 days; 23-40 kg: 60mg PO bid for 5 days > 40 kg: 75 mg PO bid for 5 days;	7yrs. and older: 10mg (2 inhalations) via provided Diskhaler q12h for 5 days; start within 48 hours of symptoms onset
Formulation	75 mg capsule, 60 mg/5 ml suspension	5 mg powder for inhalation
Side Effects	GI (nausea, vomiting, diarrhea)	Pulmonary (cough,bronchospasm), CNS (dizziness,headache),

Discharge policy

- Child should not attend school during this period
- Family education about hygiene and control measure
- Infection control precautions should remain in place for a period of 21 days

Mortality

The over all rate of deaths due to infection is low but the mortality is higher among who need hospitalization. The case fertility rate was 89% as reported from Thailand. Death occurred on an average of 9 to 10 days after illness (cause being progressive respiratory failure High among hospitalized)

Situation In India

India also now has the experience of being included in the list of countries which have suffered from bird flu. The first case of H5N1 infection in poultry was reported from Navapur taluka in Nandurbar district, Maharashtra in the month of February. The latest out break occurred in backyard poultry in Jal- gaon District where H5N1 strain was confirmed to affect the birds. Jalgaon is 200 km from Navapur.

Even as the fear of avian influenza is gripping the entire nation, the Government has begun culling of birds to contain the spread of the virus. Now we have largely completed the process by culling more than 75,000 in four villages in Maharashtra.

Fortunately, there was no human case of avian influenza in the country and “the situation is under control” [according to health and family welfare ministry]. The Government is taking adequate precautions to segregate healthy birds from infected birds. Control measures as per international guidelines have already been initiated. The ministry assured that more vaccines for poultry and more doses of Tami flu medicine and personal protection equipment were ordered.

The ministry advised the people to maintain “proper hygiene and sanitation”. A control room was set-up in the department of Animal Husbandry in the Capital.

But the possibility of human infection can not be overlooked and it is a distinct possibility.

Efforts to produce vaccine candidates that would be effective against avian influenza A (H5N1)

viruses are under way. However, it will likely require many months before such vaccines could be mass produced and made widely & easily available.

Prevention

Precautions for health workers and poultry farm workers

1. Proper clothing and equipment for workers involved in the culling of poultry flocks.
2. Workers should wear proper clothings, preferably aprons or surgical gowns and gumboots
3. Use of N-95 respirator mask or standard well fitted surgical masks should be used.
4. The person exposed to infected chickens or poultry farms should be closely monitored
5. All the clinically suspected cases human cases should be treated in isolation with universal precautions.

Precautions for households & close contacts

- Use appropriate hand hygiene
- Should not share utensils
- Should avoid face to face contact
- Should consider donning high efficiency face masks & eye protection.
- Monitoring temperature & other symptoms for 7 days after the last exposure
- A person suspected of exposure should undergo proper diagnostic testing & chemoprophylaxis.

Vaccine

A vaccine against the current strain is not yet available, but it is under development at several places. It cannot be commercially produced on a large scale because this virus mutates rapidly and we cannot predict that when and which novel strain will appear in future or current strain will continue to infect. Vaccine for seasonal influenza is available but it will not protect against pandemic influenza. It should be given to people with high risk so that if there is co-infection with both the avian and human influenza virus, the seasonal influenza virus strain can be taken care of, to make the phenomena of genetic reassortment less likely.

Key messages

- Consumption of properly cooked poultry and egg is safe.
- No cause for panic over bird flu.
- Antiviral drugs are available with the government of India.

REFERENCES

1. World Health Organization. WHO interim guidelines on clinical management of humans infected by influenza A (H5N1). <http://www.who.int/csr>. March 2, 2004. (Web Page.)
2. World Health Organization. Avian influenza- fact sheet http://www.who.int/media_center/fact_sheets/avian_influenza/en. feb,2006.
3. De Jong MD, Van Cam B, Tu Qui P, et al. Fatal avian influenza A (H5N1) in a child presenting with diarrhoea followed by comma. N Engl J Med 2005; 352:686-91.
4. Hien TT, Liem NT, Dung NT, et al, Avian influenza A(H5N1) in ten patients in Vietnam. N Engl J Med 2004 March 18; 350(12): 1179-88.
5. WHO commulative number of confirmed human cases of avian influenza A (H5N1) as of 13 March 2006.
6. WHO Advice on use of oseltamivir. @ http://www.fda.gov/cder/foi/label/2005/021246s017_021087s030lbl.pdf.
Chotpitayasunondh T, Ungchusak K, Hanshaoworakul W, et al. Human disease from influenza A(H5N1), Thailand, 2004. Emerg Infect Dis 2005



Dr. A. K. Datta

Dr. A. K. Datta

***Director Professor & Vice Principal
Lady Hardinge Medical College, New Delhi***

Represented GOI in the biregional meeting of WHO, 29-30 March 2006 at Kuala Lumpur, Malaysia.



Dr. Sanjeev Bagai

Dr. Sanjeev Bagai,

Senior Consultant Paediatrician, Nephrologist

has been awarded the prestigious PADMA-SHREE award, for the year 2006, by the Hon'ble President of India, Shri A.P.J. Abdul Kalam.



Dr. Rajesh Mehta

Dr. Rajesh Mehta

has been appointed National Officer (Adolescent Health) in India Country Office, WHO, Nirman Bhawan, New Delhi - 110 011

10th IAP Practicing Pediatricians Quiz

The IAP is planning to hold the "10th IAP Practicing Pediatricians Quiz" this year as per below mentioned schedule:

Local Rounds	latest by 31 st July 2006
State Rounds	latest by 30 th September 2006
Zonal Rounds	Latest by 15 th December 2006
Final Round	PEDICON 2007

Criteria for participants are as follows:

1. The participant should be an IAP member not attached to any teaching institution either full or part time. They should be doing private practice only. However, they may have nursing home or attached to private hospital.
2. They should be minimum 5 years in practice i.e. must have passed DCH/MD/DNB on or before 30th June 2001.

The IAP Delhi is willing to participate in the **10th IAP Practicing Pediatricians Quiz** with full enthuse and zeal. We solicit active support and cooperation from our members who fulfill above laid down criteria. For further information and to participate in local rounds please contact following local quiz coordinators:

Branch	Coordinator	Mobil:	Email:
Central Delhi	Dr. Anju Seth	9871055213	anju_seth@yahoo.com
East Delhi	Dr. Sanjiv Mehta	9810340430	drsanjivmehta@hotmail.com
West Delhi	Dr. Deepak Singla	9810079484	drdeepak2512@vsnl.com
South Delhi	Dr. Nomeeta Gupta	9810267018	n.g@rediffmail.com
North Delhi	Dr. Chander Kant	9818133863	dr_chanderkant@rediffmail.com

The honorable members who are eligible are requested to participate in large number and make this IAP activity a success. The winner teams will get prize and appreciation certificate and be able to participate in State level round in August/September 2006. The winner team at State level will be send to Zonal Round.



Pedicon - 2006

Dear Fellow Members of IAP Delhi.

I am very happy to inform you that PEDICON- 2006 witnessed an unprecedented success in the history of IAP with a record number (6500) of delegates.

Inauguration program with "Punch Tatva" and soul tickling "Jugal Bundi" of Pandit Birju Maharaj was a memorable event. Scientific activities, 6 different CMEs running together on first day and 11 concurrent sessions other days with packed halls and warm discussion suited to the need of every member.

Banquet at the Garden of Five Senses was no less than a pilgrimage. People enjoyed not only a variety of food but also a variety of cultural programs.

The valedictory function was a sombre affair. The attendance was phenomenal. The presence of special children on the stage not only touched the hearts of every one but also made us realize our duties towards such children.

Every member of IAP Delhi deserves a bouquet for this immensely successful conference. I, on behalf of the Organizing Committee wish to thank all of you for your kind co-operation.

With warm personal regards,

(DR. A. K. DUTTA)
Organizing Secretary
PEDICON - 2006