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Editorial:
IMS Act and Health Workers

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In today's high tech era, almost any information is available at the very doorsteps through the Internet or websites. But, unfortunately most of the times this information may be nonspecific, biased and unscientific, which may not be edited/ screened by a qualified, experienced or a competent person. **Unethical, uncontrolled marketing practices** by commercial food manufacturing multinational companies have added further to the age-old confusions and misconceptions associated with lingering heritage of artificial feeding practices.

International Code was drafted in 1981 and approved by World Health Assembly (WHA) in May 1981 by 118 votes to 1 (United State not voting in favor). (1) The Code is mainly a recommendation to Government as a "minimum requirement" to be implemented "in its entirety". The Global Strategy for Infant and Young Child Feeding, adopted by the World Health Assembly (WHA) in May 2002, and by the UNICEF Executive Board in September 2002, calls for implementing programs on infant and young child feeding to be consistent with accepted principles for avoiding conflict of interests. (2)

Based on the recommendations of International Code and WHA resolutions; Indian government enacted:-

The Infant Milk Substitutes, Feeding Bottles & Infant Foods (Regulation of Promotion Supply & Distribution) Act, 1992 The Act was subsequently **amended in 2003**. (3)

The Act was enacted *"with a view to the protection and promotion of breastfeeding and ensuring the proper use of infant foods and for matters connected therewith or incidental thereto".*

After 1992, for many years, this Act as usual remained **a "paper tiger"** sleeping in the files of all the concerned and hence, it was amended in 2003. As the information and knowledge about implementing the Act started becoming more and more known to the authorities the reaction also started pouring in. In the mean time, the violation continues **either directly or indirectly**, through the parent company or through sister concern or division. The concerned companies tried to create **"the voices or spoke persons for the formula milk or Infant milk substitutes".**

What these health workers are promoting?

These health workers are promoting formula milk, IM substitute, baby food, junk food or even bottle feeding for the reasons best known to them. They don't leave any stone unturned for stopping the breastfeeding and promoting the artificial feeding. They try to

empower the mother by saying that your milk is either insufficient or harmful to your baby. The earlier you stop the breastmilk the better will be the health of your baby. They try to imprint in the minds of **the so called "Modern parents"** that either the present mothers have inadequate milk or it results in vomiting or diarrhea as it is rich in lactose. The simple, easier and best option to all this is a commercial preparation which can be used round the clock by any relative or baby care sitter thus relieving the mother from the stress of child rearing activities. The so called "highly qualified", overworked, modern, self-empowered mothers are easily convinced and misguided by these **"caring health workers"** who otherwise have no time even for talking to the mother. The mothers feel that these health workers are friend in need and friend indeed.

Is this evidence based?

All these above recommendations are not evidence based. The so called caring health workers have time and again failed to inform the incidence of lactation failure if all the proper steps for initiating the breastfeeding were taken. Breast-milk is not contraindicated even in most of the cases of proved lactose intolerance. There are no advantages of bottle feeding or artificial feeding. In fact in most of the cases bottle or formula can prove to be a **"deadly weapon"** to kill a normally developing child. (4) Introduction of bottle / formula and reduction of breastfeeding is known to increase the incidence of pneumonias and diarrheas (The major killer for children in developing world). These aspects of infant feeding are evidence based and there is no need or scope for trial and error as far as routine IYCF practices are concerned. We all know that marketing and promotion of food products that compete with breastfeeding and complementary feeding are important factors that often negatively affect the choice and ability of a doctor to practice optimal infant and child nutrition, including giving appropriate advice to a mother.

What do the authorities say?

The role of the government / policy makers does not end with the enactment of the law. They should take some bold steps to implement the policies and provisions of the act. In a letter, written by **Secretaries of** Ministry of Women and Child Development and Ministry of Health and Family Welfare, Govt. of India to the Health Secretaries of various State Governments they have sought the **cooperation in implementing this Act.** (5) Additional Director Health Services of the **Govt. of Maharashtra in a GR**; IMS Act Implementation / D-15, 59664-847/ 2010 dated 30 Aug 2010 has observed that many companies are organizing the meetings of the medical practitioners for the promotion and sale of their products. There is need to curb such tendencies, restrict such programs / meetings.

In a letter, written by Dr Shreeranjan (Joint secretary, Ministry of Women and Child Development, GOI) has reiterated that the organizations should stay away from sponsorship or support provided by the infant food manufacturing companies directly or indirectly. He also re-emphasized

and appreciated the stand taken in protecting and promoting breastfeeding which is crucial for the healthy growth and development of infants in our country.(6)

What companies are still doing?

The apathy on part of the government, lack of information and knowledge amongst health workers and the guiles of companies contributed to the inertia in the implementation of the Act. The loopholes were easily exploited by the IF manufacturers.

Despite assurances, **companies continue to violate it** in systematic manner and attempt to undermine its implementation. Research has shown that the companies will flout the Code where they can, but will curb their excesses when government acts. The battle is uneven. On one side we have large corporate entities, whose primary objective is to earn more profit for themselves and their shareholders; who have money and means to promote and protect themselves. On the other side are few concerned professionals, professional organizations, civil society organizations and lay persons, who apart from having ethical functioning of themselves and their organizations, have nothing to fight the corporate houses.

Does this means that there is need for more stringent legislations? This should be **food for thought and subject for discussion.** We have to act as a **"Watch guard"** on these issues.

What is our moral responsibility?

We, the qualified and empowered health workers have the moral responsibility to have the **vision for the future**. We must **learn from our past and plan for the future** of next generation of human race. There is no need to get misguided by unscientific, unethical, biased and commercially influenced propaganda as far as child welfare is concerned. It is our responsibility to awaken the consumers from such propaganda by the media and the commercial food manufacturing companies. We must discuss steps to be taken against a company that refuses to withdraw **misleading advertisements** or continues unethical promotion of its nutritional supplement in their respective area.

As a "Custodian" of the health of future generation we have **right to make our policy** on vision of promoting and protecting infant and child nutrition. We must sensitize our colleagues to have **self regulation and introspection** so that they don't play in the hands of multinationals. The Code / Act are the legal tools provided to us by the authorities for preventing unethical promotion of artificial food products. As a responsible citizen, we shouldn't let them become a mere ***"teeth less paper tiger".*** Hence we must become activists who can help our colleagues in understanding the **vision / spirit of the Act** looking beyond the actual words.

"We have wider role than to just stick on to wordings of the code/IMS Act."

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Hot Topic:
Cross System Medical Practice

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It is observed that Bonnisan liquid and Liv-52 preparations are being prescribed by some modern medicine doctors. Can practitioners of modern medicine i.e. allopathic practitioners prescribe ayurvedic medicines?(1) "The Apex Court in the Poonam Varma vs. Ashwin Patel case has ruled that if you are practicing any other system it is Negligence per se. The other side of this issue is that in many developing countries where rural health is important and qualified practitioners are not available the authorities are appointing community health workers (CHW). These CHW are provided with some of the common medicines which can be used for domiciliary management of common illnesses. Do they have the deep and complete knowledge of these illnesses or medicine? If an unqualified CHW can prescribe or dispense medicines why a graduate in medical curriculum (traditional or homeopathic) cannot do so? This issue also needs a countrywide medical and legal debate.(2)

Gulati has aptly stated that the Supreme Court (SC) ruling forbids the doctors of modern medicine from prescribing / administration of non-allopathic drugs (such as Ayurvedic, Unani, Siddha or Homeopathy) by rendering them liable to prosecution under both civil and criminal laws leading to cancellation of registration and/or imprisonment. As such they are liable to be labeled as 'quacks' per se without further evidence or argument.(3) Paradoxically, some High Courts eg. Tamilnadu HC (*Tamilnadu Siddha Medical Graduates Association, v. Smt. Letika Saran, Cont.P.No.775 of 2010,* decision dated 23 /7/ 2010) and State commissions *(Manpreet Kaur v. Dr Veena Ghumber I 2005 CPJ 63)* have pronounced that a practitioner of Indian system of medicine can prescribe drugs of modern medicine. But the overall situation has not changed much since then, cross-pathy is legally not allowed. In judiciary the decision of SC will always be binding on lower courts unless and until SC reviews its decision. The health care facilities in our country are dismal and far from satisfactory. There is mal-distribution of health care personnel in urban and rural set-ups. In the present circumstances the Government's CHW program can be accepted as need of the hour. If we accept this as ethical and scientific then our judiciary and Medical councils must also understand and accept this.

Legal issues

1. Supreme Court judgment: A person can practice only that therapy for which he/she has a degree / recognized qualification or experience.
2. Medical Council of India. Clause 1.1.3 of MCI prohibits the allopathic

practitioners to prescribe ayurvedic or homeopathic drugs.

The issues related to this are discussed here: Who is a genuine medical practitioner?

Any individual who has acquired a qualification / degree from an institute which is recognized by its registering authority, like Medical Council of India, Dental Council of India, Homeopathic, Ayurvedic or Unani System of medicine, and is registered with respective authority is a genuine medical practitioner for that specific system. In case an individual acquires degrees for two different systems, eg, a person who had passed BHMS and later studied and passed MBBS examination, can practice homeopathy as well as allopathy provided he/she is registered with both authorities. All other persons should be treated as quacks or fraudulent medical practitioners.

According to Supreme Court any person who claims to be expert is a quack unless he has an adequately standardized training / qualification for these supposed / specific specialties. There are many people who may be teachers, clerks or shopkeepers and claim that they have learned homeopathy as hobby, or many who claim they have learned the art of healing backache and many other ailments. Surprisingly the government has bracketed yoga experts and siddhs or naturopaths with ayurvedic, homeopathic and unani system qualified persons under AYUSH ie. ayurveda, yoga experts, unani, siddhs (naturapaths) and homeopaths.

Issue raised by Tiwari and Navrange regarding community health workers prescribing or dispensing some medicines is very relevant and pertinent.(2) A compounder, nurse or auxillary nurse (ANM) has to pass examination after a stipulated period of training of 3-4 years, and then is supposed to administer any medicine which has been prescribed or advised by a doctor. Compounders and nurses are not permitted to administer any medicine on their own. But, community health workers are permitted to administer some medicines by themselves. It would be pertinent to have opinion of legal experts on this issue.

Ayurvedic medicines studied by allopaths

The modern medicine is evidence based, peer reviewed, technologically assisted, preferred by meritorious students and hence probably more accepted. Because of all these advantages and better avenues allopaths shall try to explore the talent and research in other systems for the benefit of human race. The SC forbids prescription or administration of drugs from other systems but research is not forbidden (in fact there are many drugs like Reserpine, Vinblastine etc which are herbal in origin). Many ayurvedic medicines have been studied by the allopathic experts in many institutions including All India Institute of Medical Sciences, New Delhi and found to be effective. It is no one's case that ayurvedic medicines are not effective. The scientific studies done in institutes have validated the efficacy of these medicines, and must have studied the safety aspect also. This point is

highlighted by manufacturers of ayurvedic drugs. But, this cannot be a reason or argument that, as, these medicines have been found to be effective and safe by experts of modern medicine so practitioners of modern medicine (allopaths) can prescribe these medicines.

If we allopaths justify prescribing those ayurvedic medicines which have been studies by the experts of our own system then a qualified practitioner of other system would have a stronger case to justify prescribing allopathic drugs. Their argument would be that in addition to our own drugs we prescribe or administer those drugs which have been found to be effective and safe by scientific studies. By this criterion a practitioner of any other system would be justified to prescribe an antibiotic as suggested by urine culture and sensitivity report.

Thus any person who prescribes a drug from other system is liable for legal action by a court of law and suitable punitive action by respective authority like Medical Council of India, Dental council of India, etc. An allopathic doctor cannot prescribe Liv 52 or Calcaria Phos, very popular ayurvedic and homeopathic drugs respectively. Similarly, a vaid or a homeopath cannot prescribe Amlodepine in hypertension, Valproic acid in epilepsy and any antibiotic.

Which products can be prescribed by anyone?

The products that are food supplements can be prescribed or purchased by any one, because no prescription is required. Thus over the counter (OTC) drugs like Strepsil, Vicks, Hajmola, Ferradol, Sharkoferrol, Chyavanprash and protein preparations can be prescribed by any one. In fact, most of these products are available and sold without prescription in general stores also. The Honorable SC in, *C A no. 3541 of 2002, Martin F. D'Souza v. Mohd. Ishfaq* has observed that; No prescription should ordinarily be given without actual examination. The tendency to give prescription over the telephone, except in an acute emergency, should be avoided. A doctor should not merely go by the version of the patient regarding his symptoms, but should also make his own analysis including tests and investigations where necessary. A doctor should not experiment unless necessary and even then he should ordinarily get a written consent from the patient.

Keeping an eye on various judgments of Supreme Court, there is need to prepare a list of some common drugs (may be 8-10) with specific indications from various systems (pathies) which can be included in curriculum and the basic pharmacology of these drugs are taught so that the practitioners can't be labeled as "Quacks" as pronounced by SC in Poonam Verma case. These can be used for domiciliary treatment of common illnesses like diarrhea, respiratory infections etc in rural / slum area with referral to higher centers for further management whenever required.

Licensed herbal products

Some therapeutic indices mention group of 'licensed herbal products' under many sections. Bonnisan is mentioned under section drugs for gastrointestinal system,

Liv52 under section drugs for hepatic disorders, Abana is mentioned under section drugs for cardiovascular system Eves Care for menstrual disorders and Septilin as immuno-stimulant in various infections. The word drug is derived from the French word 'drogue' a dry herb. Drug is defined as any substance used for the purpose of diagnosis, prevention, relief or cure of disease in man or animal. According to WHO "a drug is any substance or product that is used or intended to be used to modify or explore physiological systems or pathological states for the benefit of the recipient".(4) According to The Drugs & Cosmetics Act, it includes all the preparations, whether allopathic or ayurvedic. (5) A drug can be sold or supplied by the pharmacist or druggist only on the prescription of a "registered medical practitioner" defined under Indian Medical Degrees Act of 1916. The Indian Medical Council Act regulates modern system of medicine; the Indian Medicine Central Council Act, 1970 regulates Indian Medicine and The Homeopathic Central Council Act, 1973 regulates practice of Homeopathic medicine.

This issue has been raised with Central Drugs Standard Control Organization, New Delhi and Medical Council of India, New Delhi: "As per Medical Council of India (MCI) the practitioners of modern medicine i.e., Allopaths are not permitted to prescribe Ayurvedic or Homeopathic medicines. CIMS published by CMP Media India Private Limited, Bangalore (Jan-April 2010 issue) contains separate section of 'Licensed Herbal Preparations.' Does it imply that Allopaths are permitted to prescribe Ayurvedic drugs mentioned under licensed Herbal Preparation?"

Employment of practitioners of other systems in hospitals

A hospital can provide services of practitioners of other systems along with practitioners of modern medicine (Allopaths) under the same roof, provided every practitioner follows her/his system of medicine. It is said that some private hospitals employ Ayurvedic or Homeopathic doctors as resident medical officers under supervision of consultants. As these are trained and qualified personnel their observations may be accurate but they have to administer allopathic medicines as advised by the consultant. In case it happens to be the fact, this could be considered fraud with the patients who attend that hospital for allopathic treatment by allopaths.

Cross practice in hospitals

Cross practice is not confined to individual doctors only. Verma et al. conducted a survey of OPD prescriptions of a tertiary care allopathic hospital and an ayurvedic hospital, both belonging to government setup.(6) The study found that the prescriptions from tertiary care hospital had 12% ayurvedic drugs, while prescriptions from ayurvedic hospital had 58% allopathic drugs.

AYUSH doctors in PHCs

DNA (Daily News Analysis) Jaipur edition dated December 29, 2010 under caption Union health review mission pulls up state dept over NRHM stated "The Common Review Mission (CRM) of the Union health

ministry which came in the state to review the National Rural Health Mission (NRHM) has suggested the state government to depute Ayush doctors at the primary health centers (PHCs) if doctors are not available in the state."

Primary health centers have allopathic medicines. Will these doctors from Ayush group prescribe allopathic drugs about which they are not well acquainted or their own medicines or alternatively prescribe medicines from two systems i.e. allopathic and their own system? In case a serious adverse reaction occurs following allopathic drug administered by Ayush doctor, he/she may not be able to handle the situation appropriately. Who shall be held responsible in such a situation: Ayush doctor or the appointing authority? It is further stated: "The CRM members were impressed with the performance of Ayush doctors hence they asked the state to depute them at PHCs." We all should pray that in case pilots go on mass leave in future the authorities will not depute 'good' bus drivers to fly the aircraft.

Home remedies

Many plant products have been found to be effective in many different ailments. For example clove or clove oil is effective in tooth pain, carraway a type of linseed, called ajwain in Hindi is effective in dyspepsia, Basil plant called tulsi in Hindi, fem liquorice, called mulethi in Hindi and honey have been found to be effective in cough and sore throat. Many more such products have been used as home remedies for centuries and are passed on to generations as grand mothers' formulae. Many people take the stand that these natural products have been found effective so these may be given as such or as ayurvedic medicines.

A possible solution to all these controversies may be to adopt an integrated approach and formation of AYUSH is probably a step towards this. If we want to achieve health for all, there is need for adequate training, capacity building, and providing infrastructure, empowerment of health workers (including nurses, ASHA, CHW's etc.) and upgrading of health care centers in rural areas. The practical approach and solutions to all these contradictions related to crosspathy can be:

1) To conduct integrated course, 4-5 commonly used drugs from different pharmacopeia may be included in the pharmacology syllabus.
2) An 8-12 weeks training or posting can be done in pathies other than the one in which the student are enrolled for under graduate medical education.
3) An expert or specialists from various branches can be deputed or posted in rural area by giving extra benefits / privileges to supervise the local health workers. A weekly / monthly visits or follow-ups can be planned to guide and empower the local health workers.
4) The possibility of implementing the concept of "bare foot doctors" in our country can also be explored.

Keeping in mind these background situation and the various contradictions related to health care facilities in our country, there is

need for authoritative opinion and guidance on following issues.

1. Licensed herbal products mentioned in the therapeutic indices.
2. Ayurvedic or homeopathic drugs being prescribed by the allopathic doctors.
3. Employment of Ayurvedic and Homeopathic doctors in the hospitals.
4. Some state governments have authorized Ayurvedic and Homeopathic doctors to prescribe allopathic drugs where there is shortage of Allopathic doctors.
5. Legal and ethical issues involved in permitting community health workers to dispense some medicines to people on their own.

There is need for the Government, judiciary and Medical Councils to look into these vital issues and to frame clear cut guidelines keeping in mind the situation and facilities in our country. There shouldn't be confusion or paradox in legal, ethical or evidence based scientific recommendations. This is important so as to prevent / decide the cases of medical malpractice and negligence in future.

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Review Article:
Haemophilus influenzae type - b vaccine

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Key Words: *Haemophilus influenzae vaccine, Pneumonia, Bacteremia*

The agent (background)

Haemophilus influenzae is a gram negative, non mobile coccobacillus described in 1982 by Richard Pfeiffer during an influenzal pandemic and was named after him as Pfeiffer's bacillus or Bacillus influenzae. In 1933 flu virus was isolated as the cause of influenzae.

Haemophilus influenzae (Hi) is a fastidious facultative anaerobe with some strains having a polysaccharide capsule. They are further classified from a to f (6 different serotypes) depending upon the biochemical behavior of their capsule.

Those who do not posses capsule are termed as non typable or non capsulated Hi (NTHi).

The most virulent strain is Hi type b (Hib) with its polyribosyl ribitol phosphate (PRP) capsule. It accounts for more than 95% of Hi invasive disease in children.

Occasionally Hia produces invasive disease, NTHi causes local infection like otitis media, pharyngitis, sinusitis etc.

The important life threatening invasive diseases caused by Hib are meningitis, pneumonia and bacteremia. Rare diseases like Epiglottitis, Cellulitis, osteomyelitis and Arthritis does occur.

Pathophysiology

Most strains of Hi are opportunistic pathogens. Transmission is by direct contact or inhalation of respiratory droplets. Nasopharyngeal colonization with encapsulated bacteria is uncommon (2%-5%). Depending upon the bacterial load it causes effective bacteremia. The opportunity for invasion is created due to concomitant viral infection or reduced immune function in the host. The virulence of the bacteria is due to the polysaccharide capsule (PRP).

Presence of antibodies to PRP, complements and phagocytes determine the clearance of the bacteria, Newborns and infants in the earlier part of life are at low risk of infection because of acquired maternal antibodies. After waning out of transplacentally acquired immunity infants are at high risk of developing the disease. Infants are at high risk of repeat infection since prior episodes of Hi disease do not confer immunity. By 5 years of age most children have naturally acquired antibodies.

The NTHi strains colonies in the nasopharynx and spread by direct extension in and around the respiratory tract.

Epidemiology of Hib Disease

Infection with Hib represents a serious cause of vaccine preventable morbidity and mortality in children. Hib is responsible for 30-50% of confirmed bacterial meningitis in

children where the post meningitis morbidity is also high. It is also the second leading cause of bacterial pneumonia deaths among children below 5 years of age. According to WHO estimation 400, 000 to 500, 000 children below 5 years of age die each year from Hib infection. (1)

Diagnosis

Gram stain from infected body fluids may show gram negative coccobacillus.

Culture: Isolation of Hi from sterile body fluids is diagnostic. The organism should be cultured in chocolate agar plate with added IX and V factors in a CO_2 enriched incubator. In usual lab it is done with Blood agar media using sheep red cells. Bacterial culture is highly specific but less sensitive. The isolate is children should be serotyped to establish is it is Hib.

Latex particle agglutination test (LAT) can also be used.

Treatment & problems

In 1998 invasive bacterial infection surveillance (IBIS) network reported resistance to first line drugs up to 40 to 50%. In pneumonia and meningitis 3rd generation cephalosporins remained the antibiotic of choice. In spite of therapy case fatality rate is 75% in meningitis. However if the organism is sensitive to ampicillin or amoxicillin it remains the drug of choice. Chloramphenicol due to low cost is often used in many countries.

The resistance to Hib infection is because of Beta-lactamase. 60% are resistant to ampicillin, co-trimoxazole, Erythromycin in India by 2002. (2)

Local burden of Hib disease

A number of hospital based trials in India has shown that Hib is generally the most common endemic cause of bacterial meningitis in children based on the assumptions from that used in the WHO Hib rapid tool, the incidence of Hib meningitis in Vellore in 1996 was estimated around 50 - 66 cases per 100,000 children under 5 years of age. (3)

In Gambia and Chile Hib vaccine prevented about 5 times more radiographically confirmed pneumonia. This is regardless of the bacterial culture for identification of the organism.

Hib is a vaccine Preventable Infection

Several conjugate Hib vaccines with proven efficacy are available from 1988. They effectively prevent meningitis and pneumonia in children below 5 years of age. In many countries Hib conjugate vaccine has led to the near elimination of Hib disease in young children by direct protection and indirect blockage of transmission. The vaccines are available in combination with other childhood vaccines also.

Conceptual difficulties

Conservatively we understood a vaccine for a disease. But Hib causes spectrum of diseases and partly responsible for one particular disease. Poor disease surveillance and lack of hospital laboratories failed to detect the disease burden.

The cost of the vaccine is high in comparison to the standard EPI vaccines. It is also not incorrect that health systems in many countries are struggling to deliver the current vaccine in use in adequate amount.

The Vaccine Development

Pure polysaccharide vaccine (PRP) was introduced in USA in 1985. As the immune response to the vaccine was age dependent being effective only after 18 months and produced variable effect in older children. It was withdrawn from the market in 1988.

In 1988 Hib polysaccharide protein conjugate vaccine was introduced which is immunogenic in all age groups. Different types of vaccines were made available depending upon the variation in the protein conjugate. Tetanus toxin, diphtheria toxin and group - B meningococcal outer membrane proteins are used as protein conjugate with polysaccharide coat of Hib (PRP)

Apart from individual vaccine production many types of combination vaccines are licensed and available. WHO has certified several Hib vaccine combinations including pentavalent diphtheria - pertussis - tetanus-hepatitis-B, Hib for use in the developing countries.

Vaccine Components and Potency

The Hib polysaccharide protein conjugate vaccine has four components.

1. The polysaccharide (PRP) antigen
2. The protein conjugate
3 The adjuvant
4. Linkage molecule / spacer molecule

The polysaccharide: It is the outer membrane of Hib which is responsible for the virulence of the organism. The monosaccharide component is polyribosyl Ribitol phosphate. Depending upon the number of monomers present they are classified as large polysaccharide medium polysaccharide, small oligosaccharide or medium oligosaccharides are most effective as antigens. They consist of 20 to 22 subunits of PRP.

The Protein: Tetanus toxin, diphtheria toxin or outer membranes of meningococcus are taken within the antigens. Modification of Diphtheria toxin has also been incorporated. The antibody response also depends upon the previous exposure to these proteins.

The adjuvant: Adjutants attract APC to process the antigen before presenting to the T cells. Time honored aluminum hydroxide ($ALOH_3$) is used as an adjuvant but it disrupts the coupling bond between PRP and Protein thereby reducing antibody formation. ALP04 does not have such interaction. This disadvantage is obvious when Hib vaccine is combined with conventional EIP vaccines.

The Immunologic Protection

PRP antibody more than 0.15 ug/ml offers immediate protection and more than 1.0 ug/ml offers a long term protection from Hib disease. The child is adequately protected with transplacentally acquired maternal antibodies up to 2 months. The naturally acquired antibodies start appearing from 24 months and after 5 years invasive diseases by Hib is uncommon.

Immunization started at 6 weeks to 2 months gives adequate immediate protection and also long term protection. Booster after 1 year of the last dose carries the long term protection till the child develops adequately its own antibodies.

The Doses

Given with DPT, Hib requires 3 doses 1 to 2 months interval. A Booster along with DPT can be given 1 year after the last dose. Hib vaccine should not be given before 6 weeks because it may result in not responding to subsequent doses. Beyond 5 years the vaccine is not required because of naturally acquired immunity but it can be given in immuno compromised hosts.

Below 1 year the child needs 2 doses and the booster, below 15 months one dose to be given with the booster. Above 1½ years one dose is sufficient.

The Safety Profile

The vaccine has an excellent safety profile. Adverse events following Hib conjugate vaccine are uncommon; the most common reactions are local reactions at the injection site, such as warmth, redness and swelling, occurring in 5% to 30% of recipients. Up to one out of 20 children may develop fever over 101^{O}F. Children who have ever had a life - threatening allergic reaction to a previous dose of Hib vaccine should not get another dose. Children having moderate or severe acute illness should postpone receiving the vaccine until their condition has improved.

The Criticism

- Critics say it is expensive and unnecessary. The Invasive Bacterial Infections Surveillance (IBIS) group multi-centric study revealed a remarkably low incidence of Hib disease.
- Study by Watt, Leving and Santosham in Tamil Nadu under the aegis at WHO, also concluded that the incidence of the disease in India is minimal.
- Bangladesh study is not a well comparable study as the group received vaccine is more affluent there by eliminating the effect of poverty and malnutrition in the experimental group. (5)

However with the reduction of the cost of the vaccine and local production it may be expected that, in coming days it will be more acceptable for universal immunization. Till that time it will be continued to be used as a vaccine with individual consideration.

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Research Study:
Attention Deficit and Hyperactivity Disorder (ADHD) in Primary School Going Children

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Abstract

The aim was to know the prevalence of Attention Deficit Hyperactivity Disorders (ADHD) among primary school children in the rural India. 609 children participated in a study using the 4th edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-IV). We explained teachers DSM-IV Diagnostic Criteria in their local language. Questionnaire was given to teachers who were observing the child for more than 6 months. Depending on teacher evaluation every item was scored on a scale. Those children score more than 6 were having symptoms of ADHD and included in study. The data reveal that out of 609 children, 44 children (29 boys and 15 girls) scored above the cut off for ADHD, giving prevalence of 7.2%. Children who have a higher score for ADHD symptoms have school performance poorer than those with lower scores. The study concludes that ADHD is found to be a common problem among school children in rural India.

Introduction:

During the past few decades, many reports have raised concerns about the issue of childhood hyperactivity and inattentiveness. ADHD may affect all aspects of a child's life. It is one of the leading causes of academic under achievement in school. The symptoms of ADHD are caused by neurological dysfunction within the brain, and the underlying physiological mechanism that causes ADHD is still not thoroughly understood. ADHD, which affects approximately 5% to 7% of school-age children, is a chronic behavioral disorder characterized by inattention, impulsivity, and hyperactivity. ADHD is one of the most common neurobehavioral disorder of childhood, one of most prevalent chronic health conditions affecting school –aged children, and the most extensively studied mental disorder of childhood. According to the 4th edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-IV), ADHD is characterized by : (1) inattention, including increased distractibility and difficulty sustaining attention: (2) poor impulse control and decreased self-inhibitory capacity: and (3) motor over activity and motor restlessness. Affected children commonly experience academic underachievement, problems with interpersonal relationship with family members and peers, and low self-esteem. Studies of the prevalence of

ADHD across the globe have generally reported that 5-10% of school-age children are affected. Development of the DSM-IV criteria leading to the diagnosis of ADHD has been applied mainly in field trials with children 5-12 yr of age.

ADHD is often difficult to diagnose in preschoolers because distractibility and inattention are often considered developmental norms during this period

The objective of the present study was to assess the prevalence of ADHD in primary school children in rural India

Material and Methods

The study was conducted in Saint Antony Primary school in Wardha, Maharashtra 609 children participated in a study. DSM-IV Diagnostic Criteria for Attention-Deficit/ Hyperactivity Disorder (Table 1) was used. We already explained teachers DSM-IV Diagnostic Criteria in their local language. Questionnaire was given to, that teacher who was observing the child for more than 6 months. Depending on teacher's evaluation every item was scored on a scale. Those children scoring more than 6 were having symptoms of ADHD and were included in study.

Table 1: DSM-IV Diagnostic Criteria for Attention-Deficit/Hyperactivity Disorder

A. Either 1 or 2

1. Six or more of the following symptoms of inattention have persisted for > 6 months to a degree that is maladaptive and inconsistent with development level intention
   a. Often fails to give close attention to detail or makes careless mistakes in schoolwork ,work or other activities.
   b. Often has difficulty in sustaining attention in tasks or play activities
   c. Often does not seem to listen when spoken directly
   d. Often does not follow through instructions and fails to finish schoolwork, chore or duties in workplace
   e. Often has difficulty organizing tasks and activities
   f. Often avoids dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
   g. Often loses things necessary for tasks or activities (e.g. toys, school assignments, pencil, books, tool)
   h. Is often easily distracted by extraneous stimuli
   i. Is often forgetful in daily activities.
2. Six or more of the following symptoms of hyperactivity-impulsivity have persisted for > 6 month to a degree that is maladaptive and inconsistent with developmental level :

Hyperactivity

a. Often fidgets with hands or feet or squirms in seat
b. Often leaves seat in classroom or in other situations in which his remaining seated is expected
c. Often runs about or climbs excessively in situations in which it is inappropriate

d. Often has difficulty playing, engaging in leisure activities
e. Is often "on the go" or often acts as if "drive by a motor"
f. Often talks excessively
g. Often blurts out answers before questions have been completed
h. Often has difficulty awaiting turn
i. Often interrupts or intrudes on other

Results:

Out of 609 children 314 were boys and 295 were girls with ratio of M: F as 1.06:1. 44 children (29 boys and 15 girls) had symptoms of ADHD. Maximum number of children with ADHD were seen in the age group of 4-5 years i.e. 34 % and 5-6 years i.e. 34 % (Table 2). The mean age at presentation was 5.5 years. Male and female ratio was 2:1.

Age	Male	ADHD	Female	ADHD	Total	ADHD
3-4yr	87	8	64	2	151	10
4-5yr	79	12	61	3	140	15
5-6yr	61	7	72	8	133	15
6-7yr	41	1	39	0	80	1
7-8yr	32	1	37	0	69	1
8-9yr	14	1	22	1	36	2

Table No.2 Age and Distribution of ADHD

The data revealed that the children who had a higher score for ADHD symptoms were in the age group of 4 to 6. Children who had a higher score were judged by teachers as having poor performance than those with lower scores.

Discussion

ADHD is one of the most common neurobehavioral disorder of childhood, one of most prevalent chronic health conditions affecting school –aged children , and the most extensively studied mental disorder of childhood. According to the 4th edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-IV), ADHD is characterized by : (1) inattention , including increased distractibility and difficulty sustaining attention : (2) poor impulse control and decreased self-inhibitory capacity: and (3) motor over activity and motor restlessness. Affected children commonly experience academic underachievement, problems with interpersonal relationship with family members and peers, and low self-esteem. Studies of the prevalence of ADHD across the globe have generally reported that 5-10% of school-aged children are affected .(1)

This is one of few studies aimed at estimating the prevalence of, ADHD symptoms among school children in Wardha rural setting. Major finding of the present study was, a prevalence estimate of DSM-IV ADHD symptoms of 7.2% among a large, randomly selected group of school children aged three to nine years in Wardha. The estimated prevalence of DSM-IV ADHD symptoms of 7.2 % is in accordance with reported prevalence's of 2 to 14% among school age children from other parts of the world.

Bener A. et al in their study, had 112 boys (14.1%) and 33 girls (4.4%) (2)

Wang YC, et al, the estimated overall prevalence rate of ADHD among Kaohsiung primary school children was found to be

9.9%, while the rate in boys (14.9%) was 3.3 times higher than in girls (4.5%).(3) A.L. Hamed JH et al, estimated prevalence of ADHD was 16.4%, (4)

According DSM-IV Criteria for ADHD, score >6 were included in our study. There were 44 children had score more than 6. Of which 29 were male and 15 were female. In our study the rate in boys (65 %) was 2 times higher than in girls (35 %). All 44 children with ADHD were referred to the pediatrician and the psychiatrist for detail neurological examination and kept close follow up .

Conclusion

The study reveals that ADHD is found to be a common problem among school children in Wardha.

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Medical Education:

Faculty development – the need of the hour

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"***Give me six hours to chop down a tree and I will spend the first four sharpening the axe."***

Abraham Lincoln

Key words*: Medical Education, Faculty development, Curriculum, Medical Education Unit.*

Teaching skillfully may be less time consuming than teaching badly. Teaching well is more fun than teaching poorly. Thus some investment of time and attention to developing skill in teaching is likely to have substantial payoff in self satisfaction and effectiveness in your career.

India has the highest number of medical colleges in the world and consequently the highest number of medical teachers. The unprecedented growth of medical institutions in India in the past two decades has led to a shortage of teachers and created a quality challenge for medical education. There is a need for well trained faculty who will help improve programs to produce quality graduates. (1) The need of faculty development is not unique; have found them to be effective in developing teaching skills, initiating curricular changes, building relationship with colleagues and contributing towards an overall academic advancement.(2-5) The globalization of education and India's potential as a destination for higher education have made faculty development program as an urgent need of hour in the fast changing scenario.

The mission of MCI Vision 2015 is to develop systems which could continuously assess the needs, aspirations, enhance the quality and standards of medical education and training in India. Its aim is to standardize the output of graduate medical education in the form of an "Indian Medical Graduate" a skilled and motivated basic doctor. The large gaps in health care accessibility in many parts of the country, the need for enhanced clinical competency and, limited opportunities for post-graduate training are its major concerns. The Government of India recognizes Health for all as a national goal and expects medical training to produce competent "Physicians of First Contact" towards meeting this goal. However, the medical education and health care in India are facing serious challenges in content and competencies. The most significant challenge for regulatory bodies like the Medical Council of India has been to balance the need for more medical colleges with the maintenance and improvement of quality standards. The globalization of education and health care and India's potential as a destination of choice for quality education and health care has brought the issue into sharper focus.(6)

The biggest concern expressed is that the medical curriculum is not in tune with the

health needs of the society.(7) Overemphasis on the acquisition of knowledge by discrete lectures as against development of skills and attitudes; especially communication and managerial skills, lack of integrated approach to the teaching learning, and outmoded assessment system that lacks validity, reliability and transparency are the factors responsible for the deficiency. (8-10) This can be corrected with proper implementation of faculty development.

The first step towards understanding faculty development program consists in knowing the meaning of the words Faculty, Faculty Development and assessing the perspectives of the faculties.

What is Faculty?

The literal meaning of the word "faculty" is "an inherent power of ability". This refers to academic staffs of an institution. Anybody who is in a position to teach the medical students in any way is faculty.

What is faculty development?

Faculty development refers to "that broad range of activities institutions use to renew or assist faculty in their many roles."(11) That is, faculty development is a planned program to prepare institutions and faculty members for their academic roles and to improve an individual's knowledge and skills in the areas of teaching, research and administration. The goal of faculty development is to teach faculty members the skills relevant to their institutional setting and faculty position, and to sustain their vitality both now and in the future.(12)

Bland defines faculty development as a "process which seeks to modify the attitudes, skills and behavior of the faculty members towards greater competence and effectiveness in meeting student needs, their own needs, and the needs of the institution".

Content of Faculty Development activities (7)

The National Teachers Training Courses (NTTCs) were designed to sensitize medical teachers on systematic educational planning and to motivate them in establishment of medical education units in their Institutions. The courses assisted teachers in the formulation of educational objectives, select and use appropriate teaching methods and media, review the strengths and weaknesses of the present system of examination and suggest improvement thereof. The participants were expected to identify a specific problem related to medical education and prepare a plan of action for solving the same. Overwhelming majority of the Medical Education Units (MEU) also address the core areas of medical education viz., educational objectives, teaching learning, assessment and role of media in medical education and education technology.

Initially, MEUs concentrated on the training of medical faculty. Gradually training was extended to the postgraduate students and interns. Programs such as research methodology, scientific writing, etc for resident doctors, and integrated teaching for MBBS students became popular. Even within the faculty development workshops, topics such as management of change,

problem based learning, computer assisted learning/e-learning, ethics, behavioral sciences, communication skills, evidence based medicine and scientific writing has been added. Topics of national health importance such as rational therapeutics, health economics, HIV/AIDS, disaster preparedness, RCH, gender sensitivity etc. MEUs established after 1995 as a mandatory requirement by MCI have a tendency to organize activities such as integrated Methodology of Faculty Development and Course structure seminars, guest lectures, CME activities etc. possibly to justify the existence of their units.

The model propagated by NTTCs in early seventies' strongly emphasized workshop approach based on experiential learning and 'hands-on' experience rather than didactic instruction. This trend is being continued except in case of a few newly established MEUs, which arrange guest lectures, and CME presentations to cover large number of faculty and students in a short time. This development is not conducive to develop necessary skills and competencies required for effective teaching.

FAIMER (Foundation for Advancement in Medical Education and Research, Philadelphia) and NTTCs, both make use of projects in their training program. FAIMER utilizes project as the vehicle for understanding and applying educational principles. Its curriculum combines basic education principles, teaching skills, leadership and research skills, as well as networking with fellow educators from all over the country and international experts in its program. Presently, it is being offered in collaboration with three regional centers at Christian Medical College, Ludhiana, GS Medical College, Mumbai and PSG Institute of Medical Sciences, Coimbatore and has successfully taken these activities to a large group of medical teachers in India in a very short period of time.(13)

Assessing the reaction and aptitude of the faculties

- Survey (involving faculty, students and other stake holders)
- Electronic survey
- Arrange one Focus Group Discussion (FGD) -- Information and logistics of a centrally located faculty development program, and participation from the institute. Feedback from who attended and those who did not attend will be useful for the participating faculties of FDP.
- Organize FGD with faculty (participant of the FDP) on the topic and study the recorded transcript after coding to perceive the attitudes and aptitude of the members towards teaching. The idea of an anonymous feedback could be useful so that all faculty feel involved and would be a part of the decision making process. It will definitely help planning the FDP.
- Gather perceptions of medical education research activities among medical educators undergoing educational leadership programs.

Methods of motivating and sensitizing the teaching staff for Faculty Development

- Arrange a Guest Lecture for the faculty to sensitize them regarding the existence of such program on Faculty Development.
- Formation of Medical education unit in the college with some dedicated faculties to review the existing education system in the college.
- Strictly enforce the MCI guideline within a given time period -mandatory to undergo Basic Course Workshop for all faculties.
- Better emoluments would attract the professionals to choose academics as a career in a more serious way.
- Recognition for good work from stakeholders, grants and support for research and attending conferences etc.
- The professional development should be linked with academic excellence.
- The goals of faculty professional development (maximum professional development in terms of emoluments - appointments, positions and related benefits) should be changing i.e. the goals should be dynamic.
- At each levels of academic hierarchy (Assistant Prof, Associate Prof., Prof., Director) the involvement and contribution to ongoing FDP should become increasingly complex and lucrative.
- Disseminating information (using staff mail, using notice boards/college newsletter etc) on need of Faculty Development Program.
- Change in culture/ attitude within the organization, because most of the FD strategies target organizational norms and values.

Needs assessment

Results or outcome of needs assessment will decide the content or objectives of the FDP such as developing good instructor well abreast with the advanced new methods of teaching, leaders in education, scholar or the researcher. Institutional and organizational objectives should also be kept in mind while planning the contents of the program. So the goal statements or general objectives of the Faculty Development Program could be to increase the faculty members **Teaching abilities, Research abilities, Administrative abilities.**

From the general objectives are derived the statements of learning objectives or instructional objectives, which guide in selecting faculty and participants, choosing teaching strategies, and constructing evaluations.

Rovin and Packer (14) state," Learning occurs best when guided by a system of well defined, attainable goals or objectives towards which the teaching strategies are directed. Without objectives, teaching becomes disorganized, students cannot separate relevant from the irrelevant, and evaluation is often impossible or meaningless. The effectiveness of even the best teaching is seriously compromised if the students cannot see the purpose of teaching or understand what is expected of them. "

Specific objectives to be attained with faculty development programs could be-

Teaching methods:

Specific objectives:

- To improve teaching learning techniques, interactive and integrated teaching
- To improve student evaluation by using OSCE (Objective Structured Clinical Exam.), OSPE (Objective Structured Practical Exam.), Mini- CEX (Clinical Exam), OMP (One Minute Preceptor), etc.
- To improve communication and interaction skills
- To learn specific skills like, (modern and effective teaching learning techniques, microteaching concepts, how to approach a large group of students)
- To learn innovative approaches to teaching and learning
- To familiarize recent advances in health professions education
- To learn use of media and technology in different teaching methods

Researcher/ Scholar - Increasing Participants Research Abilities

Specific objectives:

- To formulate a research question
- To formulate a hypothesis
- To prepare a research design
- To determine the sample size to choose a method for data collection

General Administrative skills

Specific objectives:

- To learn policy making
- To learn personal management skill
- To formulate Group functioning
- To learn discipline of Educational Administration

Aims of Faculty Development (13)

In India, even today a large number of the academic faculty joining medical schools are not really trained to teach - one of their basic responsibilities. Hence, introducing teachers to the principles of teaching and learning is essential. Simply stated faculty development includes all activities taken up by the faculty in an institution targeting their all round development, personally or professionally and finally implying the growth of the institution. More recent descriptions include institutional growth as well, and most definitions of faculty development in literature reflect the role of the institution in the process in form of free time or fees. (15). Training medical teachers to teach and to be able to reflect upon and analyze their teaching strategies is thus an important aspect of faculty development.

Ramani (16) suggests the following guidelines to help medical teachers excel at teaching---

- Having concrete teaching-learning outcomes planned for teachers to help them plan what they teach
- Using best evidence in medical education, similar to evidence based medicine used in clinical practice, where

teachers have access to educational research to guide them to the applicability of the recent changes in teaching-learning methodologies

- Organization of education based journal clubs
- Organized faculty development programs to create an environment for learning for the teachers themselves
- Evaluation of teaching to help the teachers know how they teach
- Evaluation of the impact of teaching methods on the learners
- Creation of a senior-junior mentoring relationship where a senior faculty member can guide the junior faculty member about the intricacies of teaching
- Provision of institutional funding for research in the field of medical education
- Promotion of a culture of teaching to a level where teaching is recognized as much as clinical research
- Rewarding teachers who excel in teaching
- Recognizing the scholarly attributes of teaching
- Participation of teachers in international collaborations through BEME (Best Evidence in Medical Education)

The whole process of faculty development, though apparently individual centered, finally aims at the development of the institution as a whole. Thus faculty development will help to enhance the quality and standards of medical education and training in India so as to have a skilled and motivated basic doctor in the form of an 'Indian Medical Graduate'. The introduction of a restructured curriculum and training program with emphasis on early clinical exposure, integration of basic and clinical sciences, clinical competence and skills and new teaching learning methodologies will lead to a new generation of medical graduates of global standards. The Indian medical graduate will have the necessary competencies to assume his or her role as a health care provider to the people of India and the world. Trained faculties will create doctors - with requisite knowledge, skills, attitudes, values and responsiveness, so that they may function appropriately and effectively as a Basic Doctor, physicians of first contact for the community in the primary care setting both in urban as well as rural areas of our country. (6)

Planning of a faculty development Program

No single common Faculty Development Program with preset topics works for all. Different levels of faculty development (Basic course, Advanced course e.g. fellowship with project, degree course with thesis and research) will fulfill the need of individual, institution or curriculum of university. But there are definite advantages of faculty development to the students regarding newer teaching learning methods, a better assessment strategy, knowledge of hidden curriculum (Ethics, Professionalism, EBM (Evidence Based Medicine), Communication skills etc).

So while planning the program, focus on the following:

- Where to lay emphasis: e.g. in a basic workshop emphasize on learning objectives and the most commonly used Teaching-Learning methods and assessment methods.
- Schedules: Sessions should be well timed, sequenced and spaced.
- A didactic session of 30 minutes and workshops for 1 hr is optimum.
- More of Interactive session and group activity and less lectures.

FDP should not be a single loading dose for the faculty. In fact the module should follow a plan from basic to advanced levels spread over a span of time in individual institutes. It should be a multiphase; ongoing, longitudinal project not a horizontal short term one. Approaches for FDP are Cadre specific, Generals, Pyramidal, Cascade and Mushroom. Pyramidal approach appears to be more practical as it consists of four tiers in ascending order.

1. The lower most tier comprising of a general basic course to be offered to all faculty irrespective of their position.
2. The second tier is the advanced one (project based).
3. Third is a degree or diploma (thesis based).
4. Fourth and the final one is a Ph D degree (research based).

The progression is based not on the cadre but on the interest and needs. "Not all professors may want to go to the highest level and sometimes even an Associate may opt for the highest level".

Well, it's not only the program or the approach but the way it is implemented and followed up that makes the difference in the long run! It is hard to point out or define the ideal approach, and there is no 'conventional framework for faculty development. However, it has been stated that the context of faculty development should govern the content. Jolly cites Bland and Stitter (1988) as having reviewed faculty development programs and isolated 30 characteristics, most important of which are stated below.

1. Clearly stated and readily perceived mission.
2. Systematically designed and targeted to specific sub-groups.
3. Range of skills, not just teaching, should be covered.
4. Theory and practice should be taught
5. Practice must be a feature of the course.
6. Program personnel should maintain contact with participants
7. Faculty must be committed to the program and knowledgeable about content areas related to the discipline in which the participants practice.
8. Participants should attend in groups from the same institution.
9. Support should be available 'back home' additionally.
   a. Faculty should be involved in designing their own program
   b. Faculty assessment can be used as an initial step.
   c. Change institutional environment (17)

Other things to be planned

Number of the participants should not be more than 20 to 25. If the contents of the program consist of small group teaching exercises and FGD, then the no. of instructors should be at least in proportion of 1 faculty for a group of 5 to 8 participants. Expert faculties should be contacted repeatedly to detail the program and the contents of the program. Accommodation, remuneration and the food arrangements should be planned early. The organizer should be constantly in touch with the expert faculties from time to time. The expenses and the fees to be charged should be worked out in advance to avoid eleventh hour problems. The expert faculty should be present for all the days of the workshop so that timely arrangements can be done while the workshop is in the process. Enough no. of facilitators should be there to run the program smoothly. Some famous person or the institutional head should be the chief guest of the program.

Evaluation of FD program

Crux of any successful FDP lies with its results obtained from the evaluation of program, which has to be aligned with the objectives. FDP is not single shot therapy but should be continuous, intensive and repetitive to have the desired effect. Kirkpatrick model of training evaluation has four levels of program outcomes.(18)

1. The first level is reaction (satisfaction data).
2. The second level is cognitive (learning data) and refers to program influences on changes in knowledge and learning attitudes of the participants.
3. The third level measures behavioral changes (performance data) and points to measurable trainee activities outside the training environment that can be attributed to FDP influences. This may be performed on faculty few months after the workshop to see if they have behavioral changes (applying knowledge and skill into daily teaching practices etc)
4. Fourth level focuses on the impact of FDP's influences on the learner's career (Results outcome).

Barriers for participation /constraints

Lack of motivation amongst teachers as well amongst educational administrators, poor recognition and lack of reward for the initiatives and innovative work done are the main constraints. Motivated teachers have to fulfill their teaching and clinical commitments and then spare time for TOT (Trainer of Trainee) activities. Teachers are not offered time off and travel grants to attend faculty development program. In a study by Yvonne Steinert to try to understand what prevents clinical teachers from participating in centralized faculty development activities, non-participant attitudes that diminish the likelihood of participation comprise: a tendency to underestimate the need for faculty development programs; lack of belief in the utility of teaching skills, and a belief that teacher training is unrelated to teaching excellence (19,20) Central Government, State governments, Health Sciences Universities do not support faculty

development. Government of India stopped financial grant from 2002 to teachers training programs. Private and government college managements do not allocate any funds for MEU activity.(6)

Impact of Faculty Development activities (7)

If we consider medical education as a system, teacher's training will be only one of the inputs into the system. One input by itself cannot change the entire system. However, it can make some contribution towards improving the quality of education. In spite of constraints teacher's training activities have made some impact. A brief description is given.

The major impact has been training a number of medical teachers on various aspects of educational science and technology. Initially, teachers were reluctant to undergo such training, assuming that "there is nothing to learn about teaching", "teachers are born and cannot be trained". Gradually, change in attitude is noticeable. Teachers are volunteering to undergo training. Many of the teachers who underwent training introduced innovative program.

The faculty members of the NTTCs and other leading centers have been invited as resource persons and consultants to various organizations, medical colleges, State Governments and Central Governments in implementing their faculty development activities. These inputs include: Conducting 'Training of Trainers (TOT) workshops for projects aided by the World Bank, and similar activities sponsored by the Ministry of Health and Family Welfare under WHO projects, besides activities sponsored by professional associations including Medical Council of India, National Board of Examinations.

According to a review by Yvonne Steinert (21), Faculty development activity appears highly valued by participants who also report changes in learning and behavior. Notwithstanding the methodological limitations in the literature, certain program characteristics appear to be consistently associated with effectiveness. Srinivas and Adkoli (22) recommend to include: the need for formulating a national policy on health professional education; change in the emphasis from inspection by regulatory bodies to quality assurance and accreditation; support for MEUs / Centers in terms of finance and staffing; incentives and recognition for contribution to faculty development; incorporation of teaching skills in postgraduate training; and enlarging the scope of faculty development to health professional education.

Thus FDP will benefit the country, society, the university's mission, college's objectives, department's objectives, direct stakeholders and students as well.

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Case Reports:
Fanconi anemia:

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Key words: *Fanconi Anemia, Mitomycin C, chromosomal breakage.*

Abstract: Fanconi anemia is a rare autosomal recessive disorder associated with pancytopenia, spontaneous chromosome instability and a variety of congenital anomalies. Hypersensitivity to alkylating or DNA crosslinking agents like Mitomycin C, Diepoxybutane is used as diagnostic tests. We report a case of Fanconi anemia in a 11 year old girl. She had bifid thumb of left hand.

Introduction:

Fanconi anemia is an autosomal recessive disorder caused by defects in at least 8 distinct genes: FANCA, FANCB, FANCC, FANCD1, FANCD2, FANCE, FANCF and FANCG. It was first reported in 1927.[1] The principal cellular phenotype is hypersensitivity to DNA damage, particularly inter-strand DNA crosslinks. The syndrome is marked by bone marrow hypoplasia, a variety of congenital anomalies involving skin, heart, genitourinary tract, skeletal system, central nervous system, growth and mental retardation.

Case report:

An eleven year old female child was admitted in the Pediatric department, Regional Institute of Medical sciences, Imphal with one month history of gradually increasing weakness , shortness of breath on mild exertion, and one week history of purpuric spot on the lower limb with inability to extend the left lower limb. The patient had history of similar attacks in last year for several times with frequent hospitalization and blood transfusion. There was no history of fever, cough, epistaxis, G.I. bleed, or hematuria. Parents did not give any history of drug allergy or exposure to radiation. She was the first child of the family and was born of a non-consanguineous marriage. There was no similar illness in the family and all her siblings were apparently healthy.

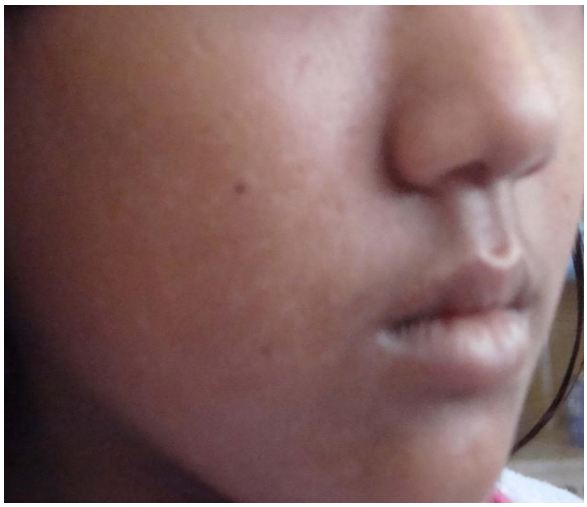

Fig.1- *Showing Multiple Hypopigmented Patches Over the Face of the Patient.*

On clinical examination, she was ill looking with marked pallor and multiple petechial purpuric spots on both legs. Multiple hypopigmented patches were noted on the face (fig.1) with bifid thumb of left hand (fig.2). The child weighed 26 kgs (70% of the expected), and her height was 136 cms (95% of expected). Her vital signs showed tachycardia with wide pulse pressure. The left hip joint was very tender with decreased range of movements. There was no organomegaly on abdomen examination. Other systemic examination findings were within normal limits.

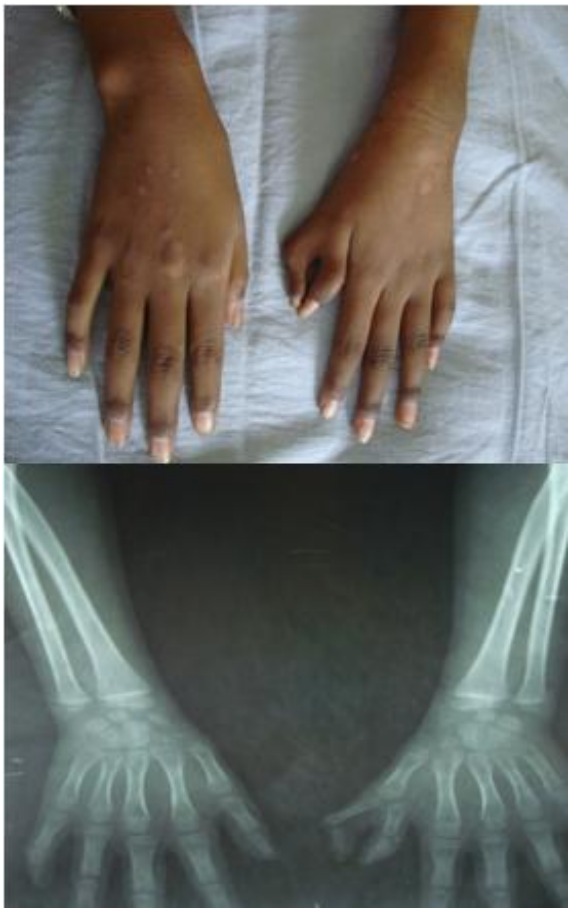

Fig.2- *Showing Bifid Thumb of Left Hand, along with Radiological Evidence.*

Investigations recorded Hb 3.2gm%, total leucocyte count 2200/cumm with neutrophils of 48 %, lymphocytes of 46%, monocytes 3% and eosinophils of 2%; ESR of 77mm 1st hour; platelet count of 40000/cumm; reticulocyte count 0.5%. RBC morphology showed marked anisocytosis, macrocytes, occasional target cells and microcytes. Bone marrow trephine biopsy revealed patchy hypocellular marrow with sections showing few marrow spaces occupied predominantly by adipose tissue. Other spaces showed large number of erythroid cells and maturing myeloid cells. Megakaryocytes are also seen.

In order to reach to a definitive diagnosis, chromosomal breakage study was performed with the help of mitomycin treated culture which revealed 25% of the cells showing breaks, triradials and quadrilaterals as compared to control sample(fig.3).

During her last hospital stay, she was discharged after transfusion with compatible packed RBC and platelet concentrate. Her parents were counseled about the treatment options available here and outside the state. But due to economical problem, they are not willing to avail the treatment. Till now, she is doing well and coming for follow up visit.

We report a case of a female patient with a clinical features suspicion of Fanconi Anemia, prompted us to perform the Mitomycin C stress test and the diagnosis was confirmed.

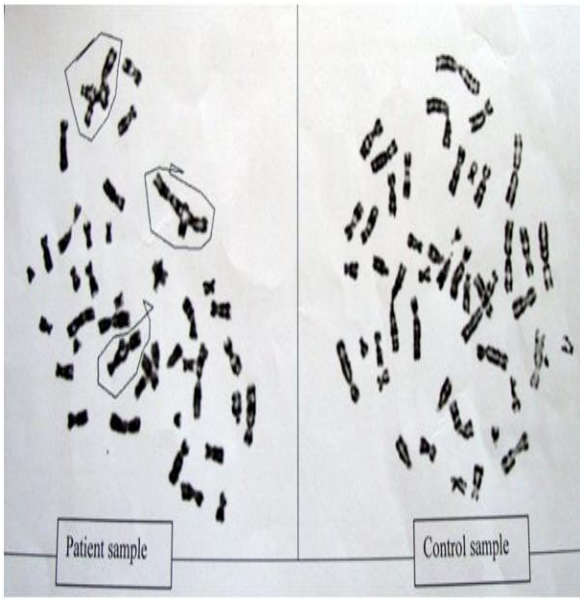

Fig.3- *72 hrs stimulated culture- Mitomycin treated GTG banding: 25% cell showing presence of breaks, triradials and quadrilaterals.*

Discussion:

Fanconi anemia is a rare autosomal recessive disorder characterized by developmental defect of the thumb and radius, childhood onset of pancytopenia between the ages of 5 and 9 and increased risk of leukemia.(1) the patient may be severely affected with multiple congenital malformations or may have a mild phenotype with no malformation. Affected individuals may exhibit varying degrees of low birth weight, growth retardation, abnormal skin pigmentation, hypoplasia or aplasia of the radius and thumbs, skeletal, renal and other anomalies. It has a propensity for developing cancer. The most frequent solid tumors are squamous cell carcinomas of the head, neck, and upper esophagus, followed by carcinomas of the vulva and/or anus, cervix, and lower esophagus. This phenotypic diversity makes differential diagnosis difficult in patients who exhibit few or no clinical features of Fanconi anemia other than bone marrow insufficiency.(2)

Fanconi anemia is one of the well known chromosome instability syndromes. However, the study of spontaneous chromosome breakage is not always convincing.(3) Hypersensivity to alkylating or DNA crosslinking agents like Mitomycin C(MMC), Diepoxybutane (DEB) and nitrogen mustard is therefore used as a standard laboratory assay to confirm the diagnosis. MMC is preferred as it is less hazardous.(4)

A high frequency of chromosomal defects with an increased risk of leukemia and other malignancies is not only found in Fanconi anemia, but also in other syndrome such as Ataxia telangiectasia, Bloom's syndrome, Xeroderma pigmentosa. So, before performing the cytogenetic test, physical exam. and analysis of other laboratory tests are essential.(5) Exposure to alkylating agents such as MMC or DEB induces a higher rate of chromosomal abnormalities in patients with Fanconi anemia than in normal individuals. Spontaneous chromosomal breaks in these patients are also higher than normal. So, having a sex/age matched normal control as well as a culture without alkylating agent from the patient is necessary for the determination of the baseline breakage rate.(5)

The choice of treatment for Fanconi anemia is hematopoietic stem cell transplantation (HSCT), as it is the only curative therapy for

the hematologic abnormality. Patients less than 10 years old who undergo transplantation using an HLA-identical sibling donor have a survival rate > 80%. Survival rates are lower for patients undergoing the procedure when they are above 10 years. Androgens produce a response in 50% of patients, heralded by reticulocytosis and a rise in hemoglobin within 1-2 month. Low-dose prednisone orally every 2nd day may be added to counter androgen-induced growth acceleration and prevent thrombocytopenic bleeding. Lentiviral vectors offer hope that gene therapy will be a safe and effective treatment for Fanconi anemia in near future.

Conclusion:

Since patients of Fanconi anemia are hypersensitive to all DNA cross linking agents, high dose chemotherapeutics and irradiation routinely used in idiopathic aplastic anemia may be lethal. Successes with HSCT have dramatically improved the outlook. Careful surveillance for known complications, especially cancers, and prompt intervention on their detection has also contributed to the improved survival.

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Case Reports:
Congenital Cystic Adenomatoid Malformation

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Keywords*: Congenital cystic adenomatoid malformations lung, congenital, tubular bronchial structures, respiratory distress.*

Abstract:

CCAM is a rare congenital lung malformation representing 25% of congenital malformations and 95% of congenital lung lesions.(1) CCAM may be diagnosed in utero by ultrasound examination, or after birth with the presentation of respiratory distress like symptoms. Most CCAM lesions are manageable with the proper assessment, diagnosis, and interventions.

Introduction:

Congenital Cystic Adenomatoid Malformation (CCAM) first identified in 1949 by Ch'in and Tang, is a rare congenital malformation of the lung representing 25% of congenital lung malformations and 95% of congenital lung lesions.(1) This lesion occurs more often in males (1.8:1), and is primarily unilateral, but may occur bilaterally.(2) Since the technological advancement of ultrasound examination, CCAM has been increasingly diagnosed on routine prenatal examinations. Some CCAM lesions present only at birth with respiratory distress symptoms but are confirmed by an abnormal chest radiograph or a more definitive computed tomography scan. Whether diagnosed prenatally or postnatally, and with or without symptoms, most CCAM lesions are manageable with the proper assessment, diagnosis, and interventions.

Case Report

Baby girl was born to primi mother. The mother's prenatal history was unremarkable.

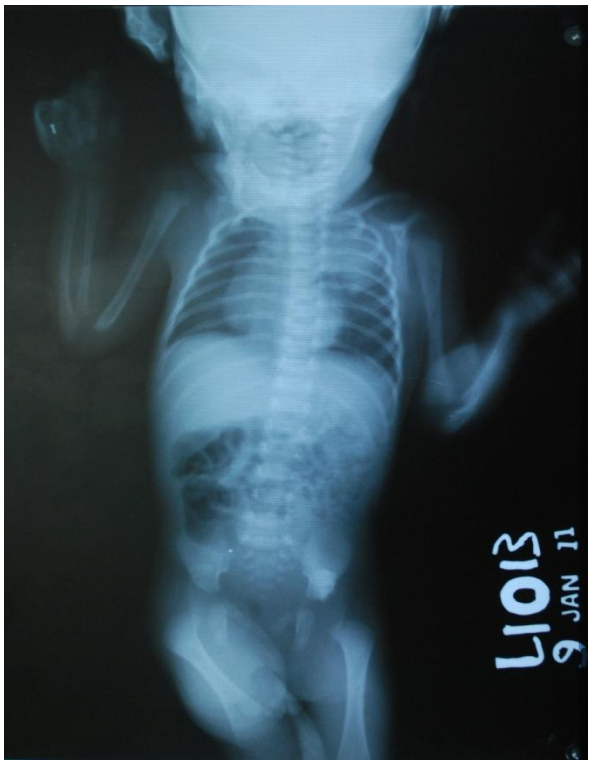

Fig.1- *X-ray chest PA shows opacity in left upper zone.*

A routine prenatal ultrasound, revealed multiple well-defined, rounded anechoic cystic lesions within the left lung of the baby. The fetus and cyst were followed in utero by serial ultrasound examination until

time of delivery No complications were documented throughout the pregnancy.

Infant was delivered by elective LSCS. Full term (SGA), the amniotic fluid was clear and odorless. The Apgar scores were 8 and 9 at 1 and 5 minutes respectively. The birth weight was 1391 grams. The Neonatology team was available at the delivery, but no resuscitation measures were needed. Infant was admitted to the Neonatal Intensive Care

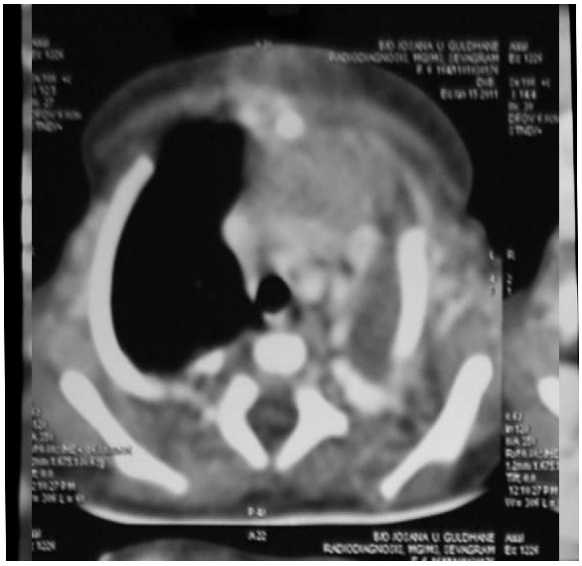

Fig.2 - *A computed tomography scan of chest - left upper lobe with multiple non enhancing variable sized fluid attenuation cystic area within with similar soft tissue density enhancing area in the perihilar region in the left lower lobe – Congenital Cystic Adenomatoid Malformation (Type-2).*

Unit (NICU) for further evaluation. X-ray chest PA shows opacity in left upper zone. (fig.1) Ultrasound of chest revealed multiple small sized cystic lesions in left upper lung zone. A computed tomography scan of chest revealed solid soft tissue density enhancing area in anterior and apico-posterior segment of variable sized fluid attenuation cystic

Fig. 3 - *X-ray chest PA shows opacity in left upper zone.*

area with similar soft tissue density enhancing area in the perihilar region in the left lower lobe – Congenital Cystic Adenomatoid Malformation -Type-2 (fig. 2 &3). Infant showed no signs of respiratory distress and began nasogastric feeds without difficulty. The infant was evaluated by the pediatric surgery team and advice Lobectomy and then discharged to home.

Discussion

Congenital cystic adenomatoid malformation is an uncommon developmental lung anomaly that is thought to occur early in fetal lung development, around the fifth to the eighth weeks of gestation. It is suspected that there is an arrest in normal fetal pulmonary maturation caused by primary bronchial atresia or failure of normal bronchial segmentation.(3) this leads to the subsequent development of dysplastic broncho-pulmonary tissue distal

to the affected segment. This dysplastic broncho-pulmonary tissue consists of numerous, intercommunicating, bronchioles like structures of variable size with many immature cells surrounded by a rim of lung tissue.

Histologic classification of CCAM was first described in 1977.(3) The Stocker classification system divides the lesions into three groups. The most commonly seen CCAM lesion is the Stocker type I, which accounts for 50%-70% of diagnosed cases.(4) this defect is composed of single or multiple large cysts (3 to 10 cm), that are confined to one lobe, and are filled with air or fluid. Only 11% of these lesions are complicated with associated anomalies. It has been estimated that 90% of these patients survive.(4)

CCAM Stocker type II lesions are found in 18%-40% of diagnosed cases, and are composed of multiple evenly distributed, medium sized cysts (<2.0 cm) that resemble terminal bronchioles.(4) CCAM type II lesions have been associated with a higher incidence (50%) of other congenital anomalies.(5) CCAM is rare and usually presents before the age of 3 years. It is more common in boys than girls and it is usually unilateral. Patient can present with life threatening respiratory distress or history of recurrent chest infection. Some cases are asymptomatic and are discovered as an incidental finding on radiography. CCAM is best diagnosed with computed tomography (6) and classified as "Type I "- This is the most common type and composed of variable cysts with at least one dominant cyst greater than 2cms .Prognosis is excellent. " Type II"- Composed of smaller uniform cysts up to 2cms. This form is commonly associated with anomalies (especially renal, cardiac, intestinal and skeletal). Our case also reported "Type II" lesion. "Type III" – Least common types and is composed of microcysts appearing solid upon visual inspection. Poor prognosis is secondary to respiratory compromise and associated congenital anomalies.(7) S. Sahu et al and Malik R et al reported a case of CCAM with respiratory complication (8,9,10)

CCAM is treated with lobectomy. This may have to be as an emergency depending on clinical state. Treatment can be postponed if the patient is asymptomatic and cyst is resolving. Long term outcome is very good, affected children leading normal lives with only slight decrease in lung volume.

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Imprints:

Hair Changes in Malnutrition

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Key Words: *Protein Calorie Malnutrition, Marasmic-Kwashiorkor, Scanning, Electron Microscope.*

Abstract

Protein Calorie Malnutrition is rampant in the developing world. The growth and form of hair is affected as a part of the generalized growth retardation. Under scanning election microscope irregularity of the hair tip, niche formation under the crests of way nodal lines, linear breakage in the shaft and herniation of the hair material through the lateral wall are observed.

Introduction

Hair is a cutaneous appendage typical of human skin. In the evolutional process it has lost most of its protective functions in human beings. The scalp hair and eye-lashes retain the property of protection to some extent. Thus human race becomes the least hairy mammal on earth. Tactile perception is one of the important minor functions it serves because of its rich nerve net-work.(1)

Hair is formed of hard keratin with high sulphur content that is responsible for its extraordinary tensile strength. (2) The Cortex is made up of a low sulphur fibrillar component tightly packed in a sulphur rich matrix. The fibrillar component consist of macrofibrills of 7 mm thick, arranged in a longitudinal lamilated form which on cross section gives a thumb print appearance (3) In Malnutrition the amino acid contents in the hair changes. The cysteine content was reported to be significantly lost and correlated with the degree of malnutrition.

Protein Calorie Malnutrition (PCM) is a condition, which results from deprivation of protein and calories from the diet. Marasmus and Kwashiorkor are two extreme states of PCM, the former resulting from predominant calorie deficiency while the later from protein deficiency. Because of the non-availability of protein or protein getting utilized for calorie the growth and repair of body gets affected and consequently the growth and texture of hair also gets affected in these conditions.

The slow growth rate of Marasmic Child slows down the hair growth. The main changes are of texture and a lack of pliability, giving rise to rough, lusture less, straight hair that can be easily pluckable and is brittle. (4) In marasmus the hair is fine and dry, the diameter of the hair bulb is reduced to a third of normal and almost all follicles are in telogen. (5) Johnson and his colleagues reported significant difference in diameter, percentage of anogen and telogen between well nourished and severely malnourished children. As it is not suitable to asses different grades of PCM the method

was not recommended for PCM assessment is field conditions.

In Kwashiorkor the hair is sparse, thin, brittle, wavy and silky or shows a mixed picture with rough and standing hair as in marasmus. The degree of hair loss varies from mild to severe. Hairs are easily pluckable but the hair growth rate is adequate. The color may be golden, blondy, rusty or light brown. The color changes may be generalized or patchy. Black hair turns brown and brown hair turns blonde. The hair grown during the period of malnutrition is pale, therefore alternate bands of dark and pale hair are seen in a single strand (Flag sign)(4). The hair may be prematurely gray or show a "pepper and salt" appearance and become sparse, fine and brittle. The hair shafts may show constrictions which increase their vulnerability to trauma. In kwashiorkor the hair follicles are more in anogen although most are atrophic (6).

In moderate to severe PCM the morphological changes in scalp hair include reduction in diameter of the hair shaft, bulb and medulla. The medulla may even be absent.(7, 8) In both the forms of PCM hair is brittle and easily shed and partial or diffuse alopecia may occur. The hair is lusterless and if normally black, may assume a reddish tinge. (9, 10)

Material & Methods

To examine the hair in malnutrition a case of marasmic kwashiorkor was selected. There was partial alopecia. The hairs were light brown, sparse, fine, brittle and easily pluckable. The hairs were examined under Scanning Electron Microscope (SEM) with different magnifications. For this purpose a JEOL model (JSM 35 cf), SEM was used.

Observations:

Under optical microscope no visible difference in the hair shaft or the tip between normal and malnourished hair is observed. When viewed under SEM at low magnification (X-540), the tips look more or less pointed (Pl 1.1 and Pl 2.1). But in magnification more than 1200 times, the tip appears wavy and lamellar (Pl.1.2). In malnutrition the hair tip is irregular and the projections are uneven (Pl.2.2). This finding is observed in most of the hair tips.

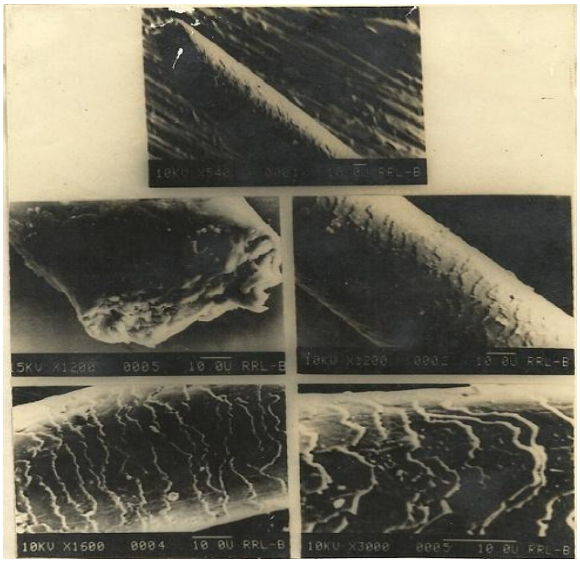

Plate1: *Electron micrograph of Normal Hair*

Explanation of Figures:

1. Upper Most -Normal hair tip at lower magnification.
2. Upper left -Hair tip, appear uniform.
3. Upper right-Normal hair shaft
4. Lower left -Normal wavy nodal markings

5. Lower right -Enlarged view of wavy nodal markings.

There are normal wavy nodal markings interspersed regularly in the hair shaft. They are in one plane. In normal hair the pattern is evident in higher magnifications. The single plane disposition is obvious even in 3000 times magnification (Pl.1.4 &5). In hair of malnutrition the nodal wavy pattern is maintained but the height of the wave is more and they are more acute. There is a niche below the crest of the wave and there is shedding visible in the area indicating that they are in different planes. This observation is met frequently but not invariably (Pl.2.3)

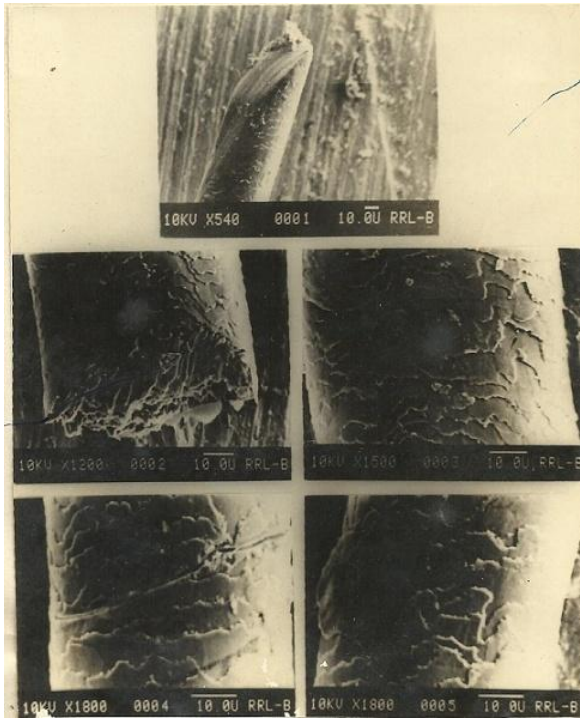

Plate 2: *Electron micrograph of abnormal hair.*

Explanation of Figures:

1. Upper most-Abnormal hair tip at lower magnification.
2. Left upper -Hair tip, appears irregular non-uniform.
3. Right upper -The notch in the wavy nodal marking.
4. Left lower -The Breakage line.
5. Right lower-Herniation of the hair substance.

Usually in the malnourished hair there are breakage lines often extending from one side to the other in the shaft. At times it is partial or complete. This is better visible in 1800 times magnification (Pl.2.4). To the naked eye or in lower magnifications this line is not very much appreciated.

One of the rare findings in malnutrition is the protrusion of the hair substance in the lateral aspect of the hair shaft, delineated properly in 1800 magnification. This may be an out-growth or may be herniation of the hair substance out through the weak cortical tissue of the hair.

Summary and Conclusion:

The hair of a case of Marasmic-kwashiorkor was studied under scanning electron microscope. In higher magnification few unusual findings like (a) Irregularity of the hair ends, (b) Increase in crest height along with niche formation, (c) Breakage line in the hair shaft, and (d) Herniation of the substance through lateral wall were observed. These findings briefly describe the ultra structure of malnourished hair.

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Media Watch / Around the World

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Correlates of specific childhood feeding problems

The correlates of specific childhood feeding problems are described to further examine possible predisposing factors for feeding problems. We report our experience with 349 participants evaluated by an interdisciplinary feeding team.

A review of records was conducted and each participant was identified as having one or more of five functionally defined feeding problems: food refusal, food selectivity by type, food selectivity by texture, oral motor delays, or dysphagia. The prevalence of predisposing factors for these feeding problems was examined. Predisposing factors included developmental disabilities, gastrointestinal problems, cardiopulmonary problems, neurological problems, renal disease and anatomical anomalies. Differences were found in the prevalence of the five feeding problems among children with three different developmental disabilities: autism, Down syndrome and cerebral palsy. Gastro-esophageal reflux was the most prevalent condition found among all children in the sample and was the factor most often associated with food refusal. Neurological conditions and anatomical anomalies were highly associated with skill deficits, such as oral motor delays and dysphagia.

Specific medical conditions and developmental disabilities are often associated with certain feeding problems. Information concerning predisposing factors of feeding problems can help providers employ appropriate primary, secondary and tertiary prevention measures to decrease the frequency or severity of some feeding problems.

Comment: *The study addresses the common problem faced by pediatricians in routine office practice. One need to explore the possibility of organic etiology for feeding problems and one shouldn't have prejudices regarding feeding problems as to be functional in origin only.*

Measured and predicted total body water in children with myelomeningocele

Children with myelomeningocele (MMC) have an altered body composition and an atypical distribution of total body water (TBW). The aim of the present study was to determine the accuracy of current predictive equations, based on bioelectrical impedance analysis (BIA), in determining TBW when compared with measured TBW using deuterium dilution.

Fourteen children with MMC were measured for whole body BIA and TBW (using deuterium dilution and the Plateau method). Total body water was predicted using equations based on the resistance and characteristic frequency from BIA measurements and heights of subjects.

The present study suggests that the prediction of TBW in children with MMC can be made accurately using the equation of Cornish *et al*. based on BIA measurements of characteristic frequency.

Comment*: it is useful to know altered body fluid composition in conditions like meningomyeloceles so as to ensure better post-operative fluid management and avoid complications related to it.*

Evaluation of New Strategies for the Diagnosis of Tuberculosis among Pediatric Contacts of Tuberculosis Patients

Pérez–Porcuna TM et al. – The sensitivity and speed of Mycobacteria growth indicator tube (MGIT) demonstrate the utility of liquid cultures for the diagnosis in children. Furthermore, these results suggest that the use of MGIT in children presenting recent household TB contact and a strong tuberculin test reaction may be a strategy to improve early TB diagnosis.

Case recruitment was performed in Manaus, Amazonas, Brazil, from 2008 to 2009. Epidemiologic and clinical data, tuberculin test, chest radiograph and 2 induced sputum respiratory samples from each participant were obtained.

Laboratory diagnosis was based on Lowenstein-Jensen (LJ) culture, Mycobacteria growth indicator tube (MGIT) and polymerase chain reaction. A total of 102 children were evaluated. Thirty-two fulfilled criteria of suspicion of TB. MGIT was more sensitive ($P = 0.035$) and faster ($P < 0.001$) than LJ. Clinical score, MGIT, LJ and polymerase chain reaction presented no concordance or slight concordance.

A positive MGIT culture was only associated with a strong tuberculin test reaction ($P = 0.026$).

The combination of MGIT with the clinical score allowed the diagnosis of 33% more cases with little or no symptomatology compared with the exclusive use of the clinical classification.

Comment: *The real utility of MGIT may be proved when applied to community practice, especially in developing countries. With high sensitivity and being quick, it may avoid over- and under- diagnosis of childhood TB and thus preventing children from over- or under- treatment.*

Kids' Vital Cough Reflex Is Impaired By Secondhand Smoke

Julie Mennella, Ph.D., a developmental biologist at Monell and co-director of the study, said:

"Cough protects our lungs from potentially damaging environmental threats, such as chemicals and dust. Living with a parent who smokes weakens this reflex, one of the most vital of the human body."

Nonsmoking adults are actually exposed to less secondhand smoke than children. Estimates show that 60% of kids in the United States aged 3-11 years and 18 million adolescents aged 12-19 are regularly exposed to tobacco smoke.

In order to elicit a cough in adult smokers, it takes more irritation than it would for non-smokers because they have a less sensitive

cough reflex. This study, published in *Tobacco and Nicotine Research*, was conducted to see if children and adolescents experience the same impairments of the cough reflex when exposed to cigarette smoke.

The researchers examined 38 healthy kids (ages 10-17) inhaling increasing concentrations of capsaicin, which is the burning ingredient in chili peppers and a potent chemical stimulus for cough, from a nebulizer. Twenty one of these adolescents were never exposed to tobacco smoke at home, while 17 of the adolescents were exposed to smoke at home on a regular basis. Parents were also analyzed.

After each inhalation, the subject received an increasing amount of capsaicin until he or she coughed twice. The person's cough threshold was considered the capsaicin concentration that forced him or her to cough twice.

Results showed that those exposed to secondhand smoke on a regular basis required twice as much capsaicin to trigger cough compared to non-exposed children. The finding shows that the exposed kids were not as sensitive to the irritating environmental stimulus. As expected, parents also had similar results.

The research proves there is a serious health risk from exposure to secondhand smoke that sometimes goes unnoticed. Exposed children develop an impaired cough reflex which makes them less capable of dealing with threats in the environment, and can even lead to an increased risk for developing respiratory illness.

Authors suggest that an insensitive cough reflex could potentially increase the risk of adolescents to pick up the habit by making experimentation with smoking less unpleasant.

The team hopes to further explore the associations between secondhand smoke exposure, cough reflex and the sensory response to smoke to find out if exposure-related decreased sensitivity to irritants makes smoking more pleasurable to young people. They also want to determine if the impaired cough reflex is reversible and if age of exposure to secondhand smoke is related.

According to a study by the Monell Center, sensitivity to cough-eliciting reparatory irritants becomes decreased in healthy kids and adolescents when they are exposed to secondhand smoke. This finding might help explain why kids of smokers have a higher risk of bronchitis, pneumonia and other diseases, as well as why they pick up the habit during adolescent years.

Comment: *The study proves the scientific fact about the risks of respiratory illnesses in children exposed to secondhand smoke. The study should further explore the reversibility of impaired cough reflex if the child is removed from the exposure and also to the risks involved when exposed to different types of smoke as such practices are prevalent in our country.*

Pertussis on the Rise

Pertussis reached epidemic proportions in Washington State in 2012, apparently because of waning immunity in individuals

who received acellular vaccines during childhood.

Pertussis incidence has been increasing since mid-2011 in the state of Washington. The number of cases reported in early 2012 — 2520 — was 1300% higher than the number during the same period in 2011. Rates were highest among infants aged <1 year, children aged 10 years, and adolescents fully vaccinated with tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine. Incidence among Hispanics was more than twice that among non-Hispanics (53.1 vs. 24.6 cases per 100,000 populations).

A total of 2069 cases were confirmed by laboratory testing (83%) or epidemiologic linking (17%). Multi-target polymerase chain reaction (PCR) assays, performed on 193 specimens in which *Bordetella* DNA had been detected by PCR, identified *B. pertussis* in 175 (91%) and *B. para-pertussis* in 11 (6%). Valid vaccination history was available for 91% of the patients aged 3 months to 19 years. Seventy-six percent of the patients aged 3 months to 10 years were up to date with childhood diphtheria and tetanus toxoids and acellular pertussis doses; 43% of those aged 11 to 12 years and 77% of those aged 13 to 19 years had received the Tdap vaccine recommended for older children and adults.

Although the incidence of pertussis nationwide in early 2012 was far lower than that in Washington State (4.2 vs. 37.5 cases per 100,000), it also peaked among infants and among children aged 10, 13, and 14 years. Across the U.S., the case fatality rate showed a slight decrease from the previous decade.

Acellular vaccines replaced the older whole-cell products because of adverse events associated with the later. It now appears that protection by the acellular vaccines, although lasting several years, may wane, leaving large populations unprotected against pertussis. Nonetheless, vaccination and revaccination remain the primary shields against infection.

Comment: *The study points out the very important fact that all new and expensive management modalities especially vaccines may not be more effective than the established ones. We should explore this fact before advocating such expensive vaccine on large scale especially when cheaper vaccines are available.*

Manuscript Preparation: Guidelines for Authors

All Manuscripts sent to the NIJP should not be sent in any other journal or publication and becomes the sole property of the publishers. The manuscripts submitted should be accompanied by a certificate signed by all the authors that "The undersigned author(s) certifies (fy) that the submitted article is original and is not under consideration with other publisher and has not been published anywhere in the past. All copyright ownership of the manuscript is transferred to the publisher of NIJP". The manuscript should include the ethical clearance certificate from appropriate authorities.

Articles are edited for grammar and style. The spelling pattern in the journal is of American style. The statement and opinions expressed in the manuscripts are essentially of the author(s) and the editors/ publishers don't owe any responsibility for these.

The product, service or the claim made by the manufacturer as advertised in the journal are those of the manufacturer. The publishers don't endorse these claims.

PREPARATION OF MANUSCRIPTS:

Title Page: This contains the title of the manuscripts along with the name of the author(s) with their affiliations.

The name of the institute where the study was carried out, the address for correspondence with e-mail of the author should be mentioned at the bottom of the page.

Abstract:

The objective, method of the study, results and conclusion should be sent in a paragraph as abstract of the manuscript. It should contain the purpose of the study, selection of study subjects, specific data denoting the main findings and the chief conclusions. The new and important aspects of the study should be revealed by the abstract.

Text: Every article must follow the following format:

Introduction, Material and method, Results, Discussion and Conclusions. The text should preferably be in a simple language which is easy to understand, pertaining to the topic concerned and should avoid vocabulary jargon.

Contributors: At the end of the article, the contribution of all the authors should be mentioned which includes:

(1) Each author's contribution

(2) Conflict of interest

(3) Funding source and its role in the study

The last element of the text is acknowledgment. Abbreviations if used should be in accordance with the international guidelines e.g. cm, ml etc. Abbreviation use should be kept to the minimum and if they are used, they should be preceded by the full form.

References: Only those references which were consulted in original should be cited. They should be arranged sequentially. The

references should be visible on the line after punctuation. The author(s) shall be responsible for the accuracy and completeness of the references. Vancouver System is followed in the journal:

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Names of author(s): If more authors are involved in the study, the first 6 names should appear ending with et al, the title of the paper, Name of the journal as appears in Index Medicus, publication year, volume number and first and last page numbers.

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If multiple authors are involved then the chapter name, first and last page numbers and names and initials of the editors should be give.

From journals:

Mahesh Baldawa, Satish Tiwari: Legal issues and preventable medical errors, New Indian Journal of Pediatrics 2012, 1: 8-12.

From Books:

Bhattacharya A, Mishra S. DNR, Euthanasia and Life support systems; In: Tiwari S, Baldwa M, Tiwari M, Kuthe A editors; Text Book on medico-legal issues related to various medical specialties: 1st edition, Jaypee brothers medical Publishers, New Delhi 2012; 179-185

From Newspapers:

Aamir ko ho raha pachhatava. Dainik Bhaskar (Hindi), 2011; 4th December. Nagpur p.5 (Col.3)

From internet:

Harms Roger W. Breast-feeding while pregnant: Is it safe? http://www.mayoclinic.com/health/breast-feeding-while-pregnant/AN01840

Accessed on 16th Oct 2011.

Those papers which have been accepted but not published yet should be mentioned as "in press". Those which are in preparation, personal communication or unpublished observation should be mentioned as such.

INDIAN MEDICO-LEGAL & ETHICS ASSOCIATION

Dear Colleagues, Warm regards

Please accept the seasons greeting on behalf of we all. The practice of medicine has changed drastically in the twenty first century. There have been many positive as well as negative changes in medical sciences. The good age-old doctor-patient relationship is in doldrums. The communication skills have almost been forgotten. Commercialization is the obvious agenda especially with the development of corporate culture in the health sector. The concept of privatization has added fuel to the fire. The patient, who are willing to pay feel that the life can also be purchased with money. This has resulted in soaring expectations. Because of all these doctors are not only affected by medico-legal cases but many other legal problems arising out of other related issues of staff, instruments & infrastructure. The Government is coming up with newer and newer laws and restrictions on medical fraternity and hospitals. We have experienced this on many occasions, which prompted us along with some other colleagues & friends to form a medico-legal & ethics association.

In last few years, we found various problems, which as a medical consultants / medico-legal experts we were trying to solve single handedly. It was then, that we realized the need of a fleet of experts to work in co-ordination. The association has thus being formed to help you in preventing a disaster in your practice. We hope that we will succeed in achieving the aims and objects of guiding the medical practitioners in their difficult times. The various membership benefits include:

1) Personal / individual professional indemnity cover for upto five years (Amount and terms decided by Executive Board) included in life membership.
2) Hospital insurance at concessional rate (as compared to other insurance / risk management companies).
3) Free med-legal guidance in hours of crisis.
4) Services of crisis management committee at city / district level.
5) Free expert opinion if there are cases in court of law.
6) Services of legal experts at concessional rates (wherever available).
7) Participation in academic activities related to med-legal issues.

All this can't be achieved without the help of dedicated, hard working, sincere members of the association. Hence, we would like you to become the member of this association. We hope that with active & enthusiastic members like you, our association will attain greater heights as we progress further. Please send your constructive criticism, suggestions, and programs for the future.

Yours truly
Dr. Balraj SinghYadav
(Secretary)

Address for correspondence:
Krishna Medicare Center
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INDIAN MEDICO-LEGAL & ETHICS ASSOCIATION

Membership Form

Name of the applicant:----------

(Surname) (First name) (Middle name)

Date of Birth:---------- Sex: ----------

Address for Correspondence:

Telephone No:- Resi. ---------- Hosp. ----------

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Fax:---------- E-mail ----------

Registration no. ---------- Date of Reg. ----------

Name of the Council (MCI/Dental/Homeo/Ayurvedic/ Others: ----------

Medical/legal qualification	University	Year

Experience in legal field (if any) ----------

Name, membership no. & signature of proposer:----------

Name, membership no & signature of seconder:----------

A) Was / Is there any med-legal case against you /your Hospital: Yes / No

If, Yes (Give details) ----------

(Attach separate sheet)----------

B) Do you have a Professional Indemnity Policy: Yes / No

Name of the Company: Amount:

C) Do you have Hospital Insurance: Yes / No

Name of the Company: Amount:

D) Do you have Risk Management Policy: Yes / No

Name of the company: Amount:

E) Is your relative / friend practicing Law: Yes / No

If Yes, Name: Qualification:

Place of Practice: Specialization:

F) Any other information you would like to share: (Please attach the details)

I hereby declare that above information is correct. I shall be responsible for any incorrect / fraudulent declarations.

Place: ----------

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Enclosures: Degree & Registration Certificates

Life Membership fee (individual 2500/-, couple 4000/-) by CBS (At Par, Multicity Cheque) or DD, in the name of Indian medico-legal & ethics association (IMLEA) payable at Amravati. Please send the Cheque/DD to Dr. Satish Tiwari, Yashodanagar No.2 Amravati 444606.

MEMBERSHIP FORM

PEDIATRICS ASSOCIATION OF INDIA (PAI)

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Name of the Applicant: _____

Date of Birth: DD/MM/YYYY Sex: Male / Female

Communication Address:-_____

_____

_____State:_____

_____ Nationality: _____

Telephones: (STD Code) _____

Mobile: _____

Email ID: _____

Medical / Pediatric Qualification	Name of the University	Qualifying Year

MBBS Registration No. & Registering Authority (e.g. MCI or State Medical Council):-

_____

Short Curriculum Vitae with area of interest (within 10 lines):-

_____

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Place: Signature of the Applicant

Date:

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The statements above are true to best of my knowledge. His/her membership may be accepted.

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