

Oration

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*Presentation during
PEDICON 2005 Kolkata,
January 7th, 2005*

Changing Trends - A Challenge to the “Already Trained”

I am thankful to the office bearers and the executive board of Indian Academy of Pediatrics to nominate me for Dr. Shantilal Sheth oration and I consider it to be a great honor. I had known Dr. Shantilal Sheth - small statured person who achieved great heights in medical profession and other related organizations. I pay my tribute to his memories.

Change is inevitable and only thing constant in life is a change. Human mind reacts to a change, the same way that body reacts to a foreign protein, it simply rejects it. But the similarity just ends here. For a successful transplant, it is necessary to immuno-suppress the host but to adjust to the change, it is necessary for a pediatrician to enhance academically and not suppress. However, changing trends are so diverse that while we have to keep pace with scientific advances that are mostly beneficial, we may have to keep away from irrational and unethical practices that are so widely prevalent. And this is a great challenge to the “already trained”.

There are many facets to changing trends. Few decades ago, changes occurred at slow pace and got well established that were easy to

imbibe. Some of the old practices were buried for ever such as subcutaneous infusion of saline in premature neonates till they died, intravenous fluid administered through blind femoral puncture resulting in septic arthritis of hip, intravenous infusion of ascitic fluid in cirrhosis of liver and tight crape bandage over the skull in the hope of getting rid of aqueductal obstruction in hydrocephalus. A Pediatrician accepted the changes in favor of better methods of treatment. However, in recent years, erratic, variable, uncertain and too rapid changes have made it difficult to keep pace with. Neurocysticercosis has been treated with albendazole with or without priming with steroids or at times considered to deserve no treatment. Such changing protocols have been challenging to all of us to keep pace with.

Scientific issues

There is a wide spectrum of changing trends in different scientific aspects. Variable clinical presentation of infective diseases, increasing prevalence of diseases that previously existed rarely, sophisticated investigatory modalities with confusing interpretations, range of therapeutic options and undue access to information of doubtful reliability have challenged the “already trained”.

Clinical presentation of infections

It is the interaction between the host, bacteria and environment that decides the outcome of infection. Ultimate host immune response results in clinical manifestations. Immune competence varies with age, nutritional status and previous exposure to infection while immune suppression may occur due to large infective load, intercurrent viral infection or immunosuppressive drugs

such as steroids. Thus, it is no surprise that same infection in different hosts present differently. Further, variable bacterial virulence with increasing drug resistance is likely to alter the progress of infective disease. Such changes have made typical textbook description near obsolete, as atypical presentations get more variable. This is best exemplified in almost every infection, be it acute or chronic bacterial, viral or parasitic infection.

Secretion of proinflammatory cytokines results in fever and general symptoms of tuberculosis. Low-grade evening rise of fever is no longer considered as manifestation of tuberculosis. Acute onset of high fever is classical in tubercular pleural effusion, subacute onset of moderate fever in tubercular pneumonia and chronic low-grade fever in cavitary disease. Thus, there is no typical fever pattern in tuberculosis. Balance between protective and destructive immunity in tuberculosis decides the type of pathological evolution. Appearance of new lesion during successful treatment of tuberculosis classically represents such a phenomenon and it is not rare for tuberculoma to develop during successful treatment of tubercular meningitis or lymph-node enlargement during successful treatment of tubercular pneumonia. Classical toxicity and high fever with typical physical signs in typhoid are restricted to highly susceptible hosts. Partially immune host presents with atypical pattern of fever with no toxicity that makes clinical judgment difficult. Recrudescence of fever in drug sensitive typhoid has become variable in spite of compliant therapy and so also occurrence of relapse in well-treated typhoid fever.

Malaria is peculiar in terms of slow development of partial immunity over years. Varying epidemiology results in endemicity without epidemics (stable malaria) or epidemics over endemicity (unstable malaria).

Serious forms of malaria thus occur in early years in stable malarial environment while young adults suffer most severe forms of the disease in unstable malarial epidemiology. Age is an important variable in clinical presentation. Neonates and infants present without fever with hepatosplenomegaly. Young children have predominantly respiratory or gastrointestinal symptoms and typical fever pattern is seen only in older children. Varicella has been considered to offer life long immunity and herpes zoster a result of secondary infection in sensitized host. However, recently relapse of varicella has been observed and also herpes zoster and generalised varicella occurring at the same time. Such changing epidemiology of natural infection is likely to be further altered by vaccination in young children.

Increasingly diagnosed conditions

Dengue and Leptospirosis has been increasingly prevalent in recent years and has nearly assumed epidemic proportions. Clinical diagnosis in early stage is difficult and laboratory diagnosis is not dependable. Late diagnosis is fraught with danger and hence it has been a great challenge to pediatricians. Diphtheria and plague seem to resurge and present day clinicians may have lost touch with these infections. Asthma is on the increase and its diagnosis is purely clinical. Sinusitis once thought to be rare in children does exist but often missed. Gastroesophageal reflux is increasingly suspected in infants who present with cough of unknown origin. Hypermobility syndrome is well-recognized entity recently, dubbed earlier as growing pains. Delayed language development is the marker of autism and pediatricians must suspect the disorder early enough for better outcome. Kawasaki syndrome with its risk of coronary involvement has posed a challenge and administration of IVIG is not an easy decision. Cystic fibrosis

once considered to be non-existent in our community is seen not so rarely though variable mutations makes molecular diagnosis uncertain. Sarcoid does present in children unlike previous belief. Better clinical judgment has helped in the diagnosis of Budd-chiari syndrome and so also gluten-induced enteropathy. Such conditions were probably never thought of and hence often missed; however they need to be considered in the present scenario of clinical practice.

Investigational modalities

While advances in investigational modalities and their availability have helped a great deal in diagnosis of hitherto difficult conditions, it has also led to concerns about sensitivity, specificity and reproducibility of these tests. Besides the fact that techniques are not assured to be always right, interpretation is also not too easy. This has been a real challenge to the pediatricians who were probably not exposed to such tests during their training period.

Automated counters produce reliable blood counts with several parameters that need proper evaluation. Simple facts about the counts are often ignored as undue importance is given to total white cell counts, neutrophils and lymphocytes and other cells are not considered. Eosinophils are suppressed in acute bacterial and viral infections while they are normal or increased in parasitic infections or systemic inflammatory diseases. Platelets are suppressed in malaria, dengue and increased in systemic inflammatory diseases or acute bacterial infections. Fall in hemoglobin may suggest malaria while unanticipated high hemoglobin points to intravascular contraction as in dengue. Thus it is most beneficial to evaluate eosinophils, platelets and hemoglobin.

Pediatricians must be sensitized to know

when to ignore laboratory report in favor of patient's condition. Classical example is reporting of stool lactose in acute diarrhea that does not call for use of soya milk. In fact stool lactose assumes importance only in chronic malnourishing diarrhea of infancy. Similarly, stool culture is not routinely necessary and also not interpretive. Mantoux test interpretation, though difficult, should be followed as per the consensus statement of Indian Academy of Pediatrics already published last year. Difference between exudates and transudate is better evaluated by SAAG - serum and ascitic albumin gradient - rather than protein and cell counts in the fluid. Limitations of serological tests need consideration as IgM antibody is supposed to depict recent infection but it is not clear how recent it would be. IgM dengue antibody may not appear for a week after onset of disease while IgM toxoplasma antibody may persist even for a month and hence interpretation may be confusing. Serological tests for tuberculosis are of no use as specificity is very poor. Newer bacteriological modalities such as Bactec do not increase the yield though produce results in a short time. PCR test results are often not dependable due to either technical issues or probability of contamination. Cystic fibrosis can be better diagnosed by molecular tests but it is known that several mutations exist and unless large population studies are available, diagnosis may not be definitely established. Newer imaging techniques have improved diagnostic ability but need proper interpretation. It is not rare for abdominal sonogram to report lymphnodes and peritoneal fluid, which may not be pathological and often adds to the confusion. With availability of advanced generation machines, men behind the machines must develop experience and expertise for proper interpretation. It is time that clinicians learn to interpret imaging studies and correlate with clinical findings.

Management strategies

Preventive strategies have assumed great importance and must be practiced by every pediatrician. Routine growth and development monitoring should be the integral part of every examination. Any deviation must be evaluated for early intervention. Every 3-month-old infant must be confirmed to have achieved head control, recognition of mother, social smile, cooing and hand to mouth coordination.

Similarly language delay beyond 18 months of age must be investigated for impaired hearing, global encephalopathy or autism. Routine monitoring of blood pressure, hemoglobin, eye refraction and dental hygiene should be imbibed. Chemoprophylaxis against urinary tract infection and maternal transmission of hepatitis B or HIV infection must be practiced for better outcome. In coming years, neonatal screening and antenatal diagnosis would be applied in routine practice and pediatricians must get ready to learn such applications.

Advances in supportive therapy have a prerequisite of early diagnosis for better outcome. Inhalation therapy for persistent asthma, early intervention for developmental delay, IVIG for Kawasaki syndrome in early stage of the disease, disease-modifying therapy for juvenile chronic arthritis, oxygen and fluid resuscitation as life saving measures in serious illnesses are all well established modalities that are expected to be practiced routinely. Blood components are now used more appropriately than whole blood. Survivors of very low birth weight babies have opened new challenges for pediatricians for timely supportive therapy.

With plethora of drugs available for cure of many conditions, rational therapy has been a big challenge. While it is heartening to note that some malignancies can be "cured" by

timely aggressive therapy, even early surgical correction of some of the congenital malformations such as obstructive uropathy and biliary atresia end up with poor outcome on long-term basis. Pediatricians have a challenge to face as early diagnosis is just not enough and close monitoring is necessary, as prognosis remains guarded. Interventional cardiology, minimal invasive surgery and finally robotic surgery are some of the advances that are already on the anvil and need to be known for their future utility.

Information access and excess

With an easy access to information, educated parents may prove to be better informed than pediatricians and we must stand to this challenge. However, reliability of information is often in question. Evidence based medicine is the need of modern scientific practice, though there are several levels of evidence, the lowest one is based on hypothetical and conjectural evidence that is not harmful. Thus, class of recommendation depends on level of evidence and practical application with consideration of ground reality. This is a challenge to practicing pediatricians.

Beyond science - other practical issues

If scientific advances put up a challenge to the "already trained" pediatrician to keep pace with it, undesirable changes in other issues in practice have evolved a contrary challenge to keep away from them. This is quite a paradox.

Pattern of practice

Unfortunately, practice has deteriorated to "MISS" pattern - they **M**anage first without diagnosis, if not improved, they **I**nvestigate next and if no diagnosis is reached, they enquire about **S**ymptoms and **S**igns. Pattern of practice must "HIT" a change - **H**istory, **I**nterpretation, **I**nvestigation and then **T**reatment.

Poor documentation is the root cause of irrational practice that leaves no chance for improvement.

Time management

Rational practice demands adequate time for each patient based on priority. Managing quantity at the cost of quality should be discouraged. It is pity that patient often spends lots of money and in return gets little time, short description and long prescription. The only rational solution is developing group practice to share responsibility and maintain quality.

Communication skills

We are not trained in communication skills. Generally three types of communication patterns exist - father-child pattern, where communication is authoritative, sibling pattern, where communication is gently suggestive and departmental store pattern, in which options are given to parents after pros and cons are explained. We need to use each of these communication patterns appropriately. Patience and politeness are key words for successful communication. Transparency and peer respect should be the integral part of ideal communication skills.

Legal responsibility

Consumer protection act is thrust upon medical profession due to its irresponsible behavior and should act as a boon for self-imposed improvement. Negligence and not ignorance is punished. But to prove rational diligence, proper documentation is a must. Sharing responsibility by timely referral and detailed explanation helps to allay anxiety of parents and seek full cooperation.

Learning curve

It is important to realize that learning is an investment for better management and bright

future. With information explosion, there exist many avenues of learning but it has to be need based and priority given to practical application. Voluntary accreditation of continued education was tried by the academy and unfortunately response from the members was atrociously poor. Academy has to revamp this strategy and seek cooperation from members before it is made compulsory by medical council.

Development of subspecialty practice

Scientific advances demand development of subspecialty services. However, for the critic, super specialist is one who knows everything about "a thing" but nothing about anything else, while generalist is one who knows something about everything but not everything about anything. Superspecialist must be an excellent generalist and it is vital that he spends part of his time in general pediatrics so as to be more rational and practical. Subspecialty chapters must bring out guidelines for common problems that can serve as standard reference to a generalist. Many chapters of the academy have already published some guidelines but unfortunately they are not put to use by our members. Standard guidelines if followed would offer legal protection to the users as well.

Research

It is possible in office practice only if proper documents are maintained in areas of interest, stored, analysed and then interpreted. Literature search and discussion with peers would help to formulate inference. Large amount of clinical material exists in office practice and should not go wasted without significant contribution for potential practical application in the community.

Priorities in life

Finally, for practicing pediatrician, aim should be to achieve work satisfaction, peer

acceptance, community respect, healthy life and happy family. It may sound philosophical but it is futile to be after “vitamin M” without achieving other goals. After all we know that storable vitamins are toxic and this is one of them.

Academy matters

Over years, academy has galvanized its activities and published consensus statements on various subjects of practical importance. Unfortunately, they are not put into practice by most of the members. Being aware of such lethargy, academy has recently taken a step forward by not only formulating protocols for asthma management but also conducting hands-on workshops for better implementation. President’s action plan for this year includes “Standardisation of office practice” – an attempt to bring about rationality and uniformity in office practice. With such positive changes in the academy, members are expected to cooperate fully, without which we would not progress. PALS and NALS courses have been contributing a great deal and are very effective. It is hoped that every member gets trained in due course of time.

Changes are inevitable and we must stand up to this challenge. Is there anybody who is

“already trained”? Answer is obviously NO. We hope that we are “all ready” to be trained. In fact it is said that if you have not changed a major opinion in last few years, check your pulse, you may be (academically) dead. Having realized that we must be ready to be trained till we hang our stethoscopes, we must be willing to adapt to changes, identify priorities for implementation and further be ambassadors of change.

If we add LLE (Life Long Education) to CHANGE, we will certainly meet the CHALLENGE. We all pediatricians are very much literate but friends, illiterate pediatrician of 21st century would be one who cannot learn, unlearn and relearn.

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