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CIRCADIAN RHYTHM - PHYSIOLOGICAL BASIS TO CLINICAL APPLICATION:

Dr. Janardan V. Bhatt, M.D.,M.D.,Ph.D., Editor.

Earth rotates on its axis in twenty four hours. This creats two different types of environment on earth, i.e. day time and night time environment. Day time environment produce diurnal rhythms and night time environment produce nocturnal rhythms. These rhythms are known as circadian rhythms. In man & animal in general the alternate phases of light and darkness creats two alternate phases of time. i.e. day time leading to active engagement in work and night time leading to withdrawal of work and rest. Such diurnal acid nocturnal rhythms, i.e. Circadian rhythms are generated internally and imposed by external sunlight. The seat of rhythm is Supra-Chiasmatic nucleus (SCN) of Hypothalamus. This nucleus is also known as pacemaker of Circadian rhythms. The

supra-chiasmatic nucleus receive information of, light via visual pathway from retina. SCN send in turn signal to pineal gland (situated in the brain) and secreat hormone called Melatonin. Melatonin in synthesized from 5-Hydroxy tryptamine (serotonin) in the presence of enzyme. N- Acetyl Transferase. In the presence of Sunlight, there is decreased secretion while in the night, in the absence of light, Pineal Gland secret melatonin in physiological need. In the night time, as the person sleeps, the plasma concentration of melatonin progressively increase usually up to 4 A.M. Then plasma concentration of melatonin starts falling and reaching basal level at 6.8 A.M. This basal level of plasma melatonin will maintain throughout the day and again in the night time/sleep around 10 P.M., plasma concentration of melatonin again progressively rises. This is called phasic secretion of melatonin. This phasis secretion of melatonin is dependa upon the photoperiod i.e. duration of exposure of sunlight throughout the day. There is also a seasonal variation of melatonin secretion. In summer, as the photoperiod is increased, the melatonin secretion is decreased. This leads to increase secretion of Pituitary gland and Hypothalamic hormones, and increase the physical activity / performance, mood - level etc. This is typically observed in birds. With the onset of summer and prolongation of photoperiod various behaviours i.e. nesting, laying eggs, parenting etc. are observed.

During wJnter, the photoperiod is decreased. This is associated with increase melatonin secretion. This decrease the Pituitary and Hypothalamic hormone leading to decrease physical and mental activity / performance. This again is typically observed in Hybernating animals i.e. frogs, reptiles & polar bears etc. In human being also, physical and mental performance is-also influenced by not only particular time of the day, i.e. day time, night time but also affected by seasons. This also affects the mood and affection also. Certain psychiatric disorders i.e. depression, manic depressive disorders, seasonal affective disorders, the manifestation symptoms are also affected by seasonal variation i.e. during winter, there is excessive phase of depression, while during summer there is excessive phase of well-being. This alteration appears to be related to alteration in secretion of melatonin, and are known as seasonal affective disorders. Surprisingly, it is found that physical exercise transiently increase followed by prolonged fall in melatonin secretion. The overall effect of regular physical exercise is to reduce the seasonal fluctuation of secretion of melatonin.Thus physical exercise act as a buffer against this seasonal variation of melatonin secretion and there by the mood also. In this way, physical exercise is beneficial for certain types of affective and mood disorder. Clinical symptoms of depression i.e. Psycho-motor, retardation is favourably modified by regular physical exercise and sports activity.

Most typical example of problem related to Orcadian rhythm is problem related to Jet-Lag. There is disorganisation of body's internal clock and local external clock. This is observed in people travelling from on end of earth to other end of earth by aeroplane. In such journey, there is no adequate time for adaptation to time-Lag. Certain methods are recommended for adjustment of body clock to new time zone clock, i.e. frequent naps and rest; progressive exposure to new zone, in the evening oral medication of capsule melatonin (available for this purpose). Such Jet-Lag is real problem for trie international players of chess, cricket etc. (Playing in foreign countries) , for optimum physical and

mental performance in the sports, adequate time period must be given to adjust the circadian rhythms . Recently, chrono biological therapy is established in the form of prolonged periodic exposure to bright light for various days and various periods. This is especially for the travellers who travel from east to west.

Chronobiological therapy is indicated to alleviate the symptoms of JET-LAG, improvement of quality of sleep. Faster adjustment to circadian rhythm. Mild to moderate exercise also help resynchronize the circadian rhythms.The most common problem / symptoms of JET-LAG and mismatch circadian rhythms are
(1) Lack of Motivation (2) Poor Concentration
(3) Poor quality and quantity of sleep and
(4) Decrease physical & mental performance.

The mismatch circadian rhythms is also a great problem and challenge for shift duty workers. These people are affected by desynchronization of circadian rhythms leading to decrease physical and mental performance, lack of concentration, sleep problems, fatigue, headache, reproductive problems i.e. (amenorrhoea) including infertility also. Basically man i.e. Homo Sapiens is diurnal creature, habituated to work between 8.00 A.M. to 18.00 P.M. (day time). Implication of chronobiology can also be useful for alleviating the problem of shift duty workers. It is found that morning type of persons / patients having sleep problems, physically unfit person and person age of more than 50 years are not the candidate for shift duly. It is also found that rapidly shifting i.e. 2-3 days/per shift is better than weekly shift.

Shift should be in forward fashion i.e. morning afternoon - night-morning. The bright light exposure should be adequate irrespective of day or night duty.

Depending upon the individual variability of circadian rhythm, the human population can be classified into three groups.
(a) Day-time / Lark type people
(b) Intermediate type
(c) Night time / owl typ

It is also found that younger people, athletes, physically fit people have better tolerance for mismatch biorhythms.

For the shift duty workers, the ergonomic design should be prepared in such a way that full day-night off is received before shift change. More research is required to understand and improve the physical and mental performance and health of shift duty workers.

Melatonin is also closely related with sleep. With the availability of melatonin as a drug, melatonin is considered as drug for early morning type of insomnia as it appears to be more physiological, non-addicating and adjust the Euchronobiology by therapeutic mean. It is available as 3 mg tablet and to be taken 2 hours before sleep. It has very few side effects i.e. increase prolactin level, decrease LH level, drowsiness, etc. The melatonin as a drug is contra-indicated in people taking steroid drugs, severe mental disorders, auto

immune disorders, in children, in leukaemia, lymphomas. Melatonin carries a great future as an anti stress hormone in newer Millennium.

Again to reconsider physiological basis of Chronobiology, in the early morning at 4 A.M. - 6 A.M. the plasma level of melatonin starts falling, at the same time Hypothalamic hormones i.e. Corticotrophin releasing factor (CRF), Thyrotropin Releasing factor (TRF) etc. start rising at the same time. Adrenal medullary hormones i.e. Adrenaline & Nor Adrenaline like hormones also start raising. During this phase there is progressive increase in Autonomic sympathetic nervous system activity. This period is found to be associated with certain clinical events like morning shooting of Blood pressure increase, incidence of cardiovascular events i.e. acute Myocardial infarction, serious cardiac events i.e. sudden Cardiac arrest and sudden death in the morning hours. In this context, heavy exercise in the morning hours to be avoided to prevent serious cardiac events in patients suffering from CVS disorders. This also lead to development of concept of chrono-pharmacology. The well-known typical example of chronopharmacology is Barbiturates which when taken in the morning doesn't induce sleep but when taken in the late evening hours, it induces sleep. Newer formulation of long acting and sustained release (SR) type of drugs may help to prevent such events in the early morning. Body temperature also undergo circadian variation depending upon the endocrine status of the individual. Soon after sleep, around 10 P.M. the body temperature start falling and remain the lowest between 2 A.M. to 4 A.M.. After 4 A.M, again the body temp, start rising. This is responsible for morning stiffness in Rheumatoid Arthritis, precipitation of Noctunal Bronchial Asthma etc. Here also principle of chronopharmacology (Long acting & SR. type of drugs which also act in the night hours.) can be applied to aliviate the Noctunal symptoms of Rheumatoid Arthritis and Bronchial Asthma.

Statistically majority of death occur during early morning and further research is required to this interesting statistical observation. Statistically all natural child birth occur at 00:00 / 24 hours at midnight when the melatonin level is at peak level. At present, child birth time is manipulated by medical & human interference. Further research is required in this field also. Thus the physiological basis of Biorhythms and its modulation by various interventions Will remain challenge in newer millennium.

STUDY OF CANCER RELATED FATIGUE IN 742 SURVIVORS.

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Definition :

Fatigue is a subjective state of overwhelming, sustained exhaustion and decreased capacity for physical and mental work that is not relieved by rest.

Cancer fatigue has now become the chief complaint of many cancer patients. As cancer patients survive longer, this problem has become even more dominant, since often cancer fatigue does not subside over time. Most cancer patients to some degree experience Cancer fatigue where it affects the patient's ability to work, enjoy life, and interact with family and friends. There is a growing need to attend to the-physical and emotional effects of cancer and its treatment "as experienced by the survivors.

One of the major long-term goals of cancer medicine has always been to maintain the patient's overall quality of life during and after treatment. In the future, this is likely to become an even more important priority as more and better tools are developed for symptom management and patients justifiable expect to live as fully and productively as possible.

Cancer Related Fatigue has many causes:

Ø metabolic (e.g. electrolyte imbalance, hypothyroidism),
Ø cognitive (opioid usage or sleep deprivation),
psychological (e.g. depression), or
Ø physiologic (e.g. anemia). In each case, a careful history and physical examination, coupled with selected screening tests, can identify the cause of fatigue, which can be improved by treatment.
Ø Drug Usage (sedatives, corticosteroids),
Ø Organ / system Failure (cardiac or respiratory failure)

As the problems like nausea, vomiting and pain have been mitigated more efficiently, neutropenia, infections and anemia are managed better than ever, fatigue symptoms have risen to dominance. Palliation would mean more than hospice care and pain management. First, use of the symptom management tools currently available in the most effective ways. Second, conduct research needed to develop new palliative care approaches

The Evolving Face of Palliative Care In Cancer Medicine:

Agitation may stem from anxiety alone, or could be the result of an acute confusional state. Confusion in cancer is not inevitable and can often be treated or made tolerable. It may present as disorientatioff, misinterpretation, short term memory loss, hallucinations or paranoia. Common causes includes drugs (sedatives, opioids, corticosteriods), infection, metabolic disturbance, cardiac or respiratory failure etc.

AIMS AND OBJECTIVES:

1. To study the distribution of the Cancer Related Fatigue in the cancer survivors diagnosed in the last six years (1995- 2000) according to age and sex, type of cancer, etc.
2. To study the factors associated with the fatigue and factors attributable to it.
3. To know the alterations in the other biological activities
4. To know the measures adopted to alleviate fatigue and its related symptoms

Table : 1	Male		Female		Total	
WHO- Performance status of cancer patients.	Nr.	%	Nr.	%	Nr.	%
Able to carry out all normal activity without restriction.	165	41.77	120	34.58	285	38.41
Restricted in physically strenuous activity but able to carry out any work	170	43.04	163	46.97	333	44.88
Ambulatory and capable of all self- care but unable to carry out all work- up and >50 % of waking hrs.	36	9.11	37	10.66	73	9.84
Capable of only limited self care; confined to bed or chair > 50% waking hrs.	8	2.03	13	3.75	21	2.83
Completely disabled, cannot carry on any self-care totally confined to bed.	16	4.05	14	4.03	30	4.04
TOTAL	**395**	**100.00**	**347**	**100.00**	**742**	**100.00**

Table 2 :	Male		Female		Total	
Factors Associated with Cancer Related Fatigue	Nr.	%	Nr.	%	Nr.	%
1. Fatigue per se	361	91.4	300	86.5	661	89.1
2. Persistence fatigue after any physical work	370	93.7	308	88.8	678	91.4
3. Difficulty in Activities318 of Daily Living	80.5	277	79.8	595	80.2	
4. Physical Weakness	350	88.6	295	85.0	645	86.9
5. Depression	339	85.8	284	81.8	623	84.0
6. Lack of interest in any work	284	71.9	236	68.0	520	70.1
7. Lack of Concentration	196	49.6	165	47.6	361	48.7
8. Loss of Memory	173	43.8	151	43.5	324	43.7

(Percentages computed for an affirmative answer and from total number of male and female patients)

Table 3 :	Male		Female		Total	
Factors Attributable to Cancer Related Fatigue	Nr.	%	Nr.	%	Nr.	%
Disease per se	384	97.2	330	95.1	714	96.2
Cancer Directed Treatment (CDT)	363	91.9	307	88.5	670	90.3
Anxiety	341	86.3	286	82.4	627	84.5

Chronic Pain	335	84.8	274	79.0	609	82.1
Narcotic Analgesics	62	15.7	59	17.0	121	16.3
Coincidental Disease (DM,TB)	15	3.8	14	4.0	29	3.9

METHODOLOGY:

Data was collected on a pre tested questionnaire in two months (January & February 200t) from different out patient departments and wards of the Gujarat Cancer and Research Institute. One medico-social worker from the institute was trained for collection of information. In the present study a total of 742 adult cancer patients (diagnosed between 1995 and 2000) were interviewed in person by a trained medico-social worker. Exact diagnosis, type of treatment taken, treatment undertaken for adverse reactions to treatment, etc. were noted from the patients' case files. Their performance status, various symptoms related to cancer related fatigue, their subjective feelings, measures undertaken for comfort etc. were noted on a pre-tested proforma. Standardization with regards to interview of the patient and the interpretation of the answers given by them was closely monitored by the first author. Paediatric patients have been excluded.

OBSERVATIONS AND RESULTS

There were 395 men (53.2%) and-347 women (46.8%). Various factors are associated with this condition and some of them are contributory and these are presented in the form of tables below. Age, gender, type of treatment received and performance status (Kernofkov's scale) of the persons is given in tables 1,2 and 3 respectively. (Table 1)

Factors Associated With Cancer Related Fatigue:

There are various manifestation of cancer related fatigue. About 90% of these subjects had fatigue as chief symptom. Any physical work was difficult for them and they had aggravation of fatigue which was persistent after work in almost every one. Other symptoms associated are physical weakness which is present in 87% of persons. Among them 80% had difficulty in activity of daily living. Depression was another factor closely associated with cancer related fatigue in 84% of all persons. About 70% of these persons lost interest in any work. Lack and/or loss of memory was present in 50% and 44% of the subjects respectively. (Table 2)

Factors Attributable To Fatigue:

Disease per se was attributable to fatigue in almost all. Over 90% of the persons felt that Cancer Directed Treatment (CDT) was the source of their fatigue. Anxiety related to the outcome of their disease and their quality of future life was seen in 85% of these patients. Chronic pain associated with the disease was the cause in 82% of subjects. Use of analgesics including narcotic drugs was responsible for fatigue in 16% of them. About 4% of these people experience fatigue as a result of coincidental disease like Diabetes Mellilus or Tuberculosis. (Table 3)

Biological Activities:

Appetite, sleep and sexual disturbances were presented by majority of patients. About 1/3rd of patients had decreased appetite. Sleep disturbances were universally present. Nearly 2/3rds had disturbed sleep and 15% had insomnia. Nearly 40% had unsatisfactory sexual life and 13.5% did not respond to discussion on sex.

Measures Undertaken To improve Fatigue:

There was no single adequate measure which could be undertaken that could help the patient to reduce fatigue either subjectively or objectively. All measures like nutritious diet, anxiety alleviating drugs, physical rest, etc were tried with limited success. About 25%patients were helped by limited Yogasanas, small walks, mild physical exercises, as an adjuvant treatment have helped to attenuate the fatigue and thereby contributed to rehabilitation of patients.

PRESENT QUALITY OF LIFE :

In this study, only 8% of them were enjoying their life as they were doing before the diagnosis of cancer. The rest had compromised to the condition. Nearly 25% of the patients had anxiety related symptoms for most of the time.

(Percentages computed for an affirmative answer and from total number of male and female patients
Special Thanks to Dr.D.D. Pate! - Director, Ms. Sudha Gohil Medical Social Worker G.C.R.I. A'bad -16.

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LATENT AUTOIMMUNE DIABETES MELLITUS

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DEFINITION AND PATHOGENESIS:

Diabetes is the leading cause of morbidity in the western world and fast catching up in the develping countries also. The recent classification of diabetes takes into consideration the aetiology of diabetes as follows :

1. Type 1 : destruction of insulin secreting beta cells, production of little or no insulin and immune destruction (develops in children, requires insulin treatment generally).
2. Type 2 : insufficient insulin secretion with or without resistance (develops in adults, doesn't require insulin generally).

The presence of islet cell antibody is one way of distinguishing type 1 from type 2 diabetes mellitus (DM). Based on this criterion, a minority of patients not requiring insulin therapy are antibody positive. The term latent autoimmune diabetes of the adults (LADA) was introduced for such patients who had autoimmune type of diabetes but didn't require insulin initially. It is now clear that diabetes in these patient is not necessarily latent and not limited to adults. Some call this slow progressing type 1 diabetes or 1.5 diabetes.

The similarities between type 1 DM and LADA include-the autoimmune nature of disease, T cell insulitis, and association with other endocrinopathies like thyroiditis or adrenalopathies.

Pathogenesis (& differences from type 1 DM):

1. Genetic predisposition (less marked compared to type 1 DM).
2. Protective genes contributing in prevention of beta cell destruction.
3. Partial regeneration of b cells.
4. Induction of immune tolerance to destruction.
5. Reduced exposure to environmental factors (as compared to type 1 DM)

CHARACTERISATION OF LADA

Similarities between type 1 diabetes and LADA are:

1. Islet cell autoantibody (ICA) positivity.
2. Insulitis.
3. Autoimmune endocrinopathy association.
4. Presence of HLA-DR3 and HLA-DR4.

NIDDM patients positive for GAD (Glutamic acid decarboxylase) autoantibody and/or ICA autoantibody require insulin significantly earlier than ICA negative patients. In patients of autoimmune diabetes mellitus, GAD positivity or ICA positivuy signifies slow progression (LADA), while IA-2 positivity signifies fast progression (Type 1 diabetes mellitus).
Immune markers:

1. C-peptide levels differentiate between type 1 and type 2 DM.
2. ICA antibody levels predict possibility of LADA.
3. GAD antibody levels predict possibility of LADA (more sensitive than ICA levels)

It was also shown that other criteria like BMI and ethnicity were also important in characterization of type 1 diabetes and LADA.

Genetic markers:

The protective genotypes have been defined as : HAL-DR2, and HLA-DQBI*0602. The

susceptibility genotypes have been defined as: HLA-DR4, and HLA-DQBI*0302.
It is the interaction between all these loci which decides primarily which type of diabetes will develop in the individual.

SCREENING FOR LADA

Non insulin requiring diabetic patients at diagnosis, especially if,
a. Age 35-60 years.
b. Family history of Type 1 DM or autoimmune DM
c. Lean BMI
Measurement of GAD antibodies (if positive)=diagnosis of LADA Evaluation of C-peptide (baseline + stimulated)
+
HLA-DR/DQ typing
+
Measure of other antibodies: ICA, Thyroid etc.

Definition of risk of progression towards insulin dependency in LADA

The following results were derived from the various studies:

1. If both GAD and ICA positive, then rapid progression to insulin dependency.
2. HLA typing helps in characterization of LADA.
3. C-peptide levels stage the b cell function and help in identifying time to introduce insulin therapy.
4. If patients are GAD positive, other endocrinopathies must be ruled out by appropriate tests.'
5. Lean BMI suggests a rapid progression to insulin dependency.

MANAGEMENT OF LADA

The principles of management are similar to other diabetics, i.e. good control of blood sugar and complication prevention. There is no clinical data to indicate which option is better.

1. Sulphonylureas : They stimulate insulin secretion by closure of ATP dependent K+ channels on b cells.

They are good first choice in type 2 diabetes and also LADA, but they might cause early exhaustion of b cells by excitatory impulses and cause weight gain by insulinogogic actions. Also, the increase in endogenous insulin may flare up the autoimmune response and cause early and fulminant insulitis and hence the insulin dependency.

2. Metformin : They suppress gluconeogenesis and stimulates peripheral glucose uptake.

There is no insulin stimulation, no hypoglycaemia and no weight gain. The only major

side effect is the development of lactic acidosis in occasional patients which may be fatal. It also doesn't interfere with the process of insulitis. It controls hyperglycaemia and protects b cells from continuous hyperstimulation of insulin secretion. It is a good option if the diabetes is not controlled by diet alone.

Potential strategies for preventing beta ceil destruction in LADA:

LADA is similar to type 1 DM and can serve as experimental model for type 1 DM Studies suggest that nicotinamide can maintain C-peptide levels in recent onset type 1 DM for up to one year after diagnoses. Patients with preserved C-peptide levels have lower levels of HbA1 c and less microvascular complications. Complete loss of b cell function can lead to early retinopathy and it has been suggested that even the probands should be treated if necessary to prevent these complications.

If the patient has a loss of b cell function, aim should be to restore b cell mass or function, where sulfonylureas or insulin are useful. Insulin may be valuable to maintain b cell function but its role in preventing its further use is difficult to define. Sulfonylureas have been used extensively in NIDDM and don't seem to prevent the insulin dependency. Metformin also has been used extensively in NIDDM patients without knowing the GAD status of the patient and seems to be beneficial in reducing the further use of insulin in the patients.

3. Glitazones : They increse the action of insulin in the periphery and increase the glucose utilization. They preserve the insulin secreting reserve and decrease the circulation insulin levels. They also increase the insulin synthesis, insulin content of islet cells and increase the secretory response of the islets.

Troglitazone has additional anti-inflammatory properties (decreases TNF- a and g interferon levels). Other glitazones also have a similar action and they seem to be the most appropriate treatement options in patients of LADA

4. Insulin : Early use of insulin may protect the b cells by decreasing the insulin production and autoimmune exposure. The insulin treated patients maintain a better b cell function than the sulfonylurea treated patients. The problem of insulin treatment is that the insulin acceptance is very low in patient who have only mild to moderate hyperglycaemia. Newer methods of insulin delivery like inhaled insulin are being developed for a better acceptance amongst the patients.

Future: Newer therapies like vaccine-based therapy are being tried in type 1 DM, which may turn out to be beneficial in LADA patients also.

Other therapies being suggested are:
(a) Antigen based therapy,
(b) Monoclonal antibodies,
(c) Cytokines.

MICROSURGERY OF EAR

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The microsurgery has evolved into a very rapidly developing speciality. The operating microscope, first applied to TYMPANOPLASTY by Willstein and Zoflner in 1953. Rosen and others originally used 2X loupe for stapes mobilization. They began to employ the Zeiss operating microscope in stapes mobilization in 1954 using 6X and 10X magnification.

There are large numbers of deaf in India, who have perforation of ear drum, fluid in the middle ear or defect in the ossicles. These defects can be corrected by microsurgery of ear.

Hearing impairment is an unseen misery. Unlike other disabilities such as blindness or orthopaedics disability, this remains buried in the individuals. Hearing deprivation has its greatest effect on linguistic development. It is pity that the deaf person do not get as much as sympathy as the blind. Usually people laugh at their disability and ridicule them.

CHRONIC SUPPURATIVE OTITIS MEDIA (CSOM) A PREVENTABLE DISEASE ISTHE MAJOR CAUSE OF THIS DISABILITY. Apart from discharge of pus from ear, it is also endangers life of the person due to risk of developing central nervous system complications. It is a booh for the patients to get rid of the discharge from ears and be able to hear again.

According to ICMR study (1980), the prevalence of impairment was found to be 10.7 % in the rural and 6.8 % in the urban population. Major aefiologica! factors in rural areas were CSOM (42.4%), Presbyacusis-hearing impairment due to ageing process (34.4%) and conductive hearing loss with intact Typanic membrance (15.6%). Whereas in the urban areas, the major factors were presbyacusis (48.5%), CSOM (23.1%) and conductive hearing loss with intact Tympanic membrane (14.5%). Up to 35 years of age, the hearing impairment was more of conductive type. Those exposed for over 10 years to high noise levels as in certain noisy industries showed higher prevalence of hearing impairment, (noise induced).

Looking at above facts one can say that, India is at the threshold of Microsurgical revolution. Microsurgery is a sunrise business, it's going to get brighter and brighter.

CSOM la Inferred from two main symptoms':

Persistent otorrhoeas and conductive deafness. Otoscopic finding in CSOM may be perforation, polyp, Tympanosclerosis or cholesteatoma. Perforation may small or big, anterior or posterior depending on its side. TYMPANOPLASTY is carried out for such pathology. Usually hearing loss increases in proporation to the posterior extent of the

perforation. Surgical correction of these defects in ear drum and ossicles are carried out by microsurgery of ear.

Today chronic ear disease still causes two-third of the intracranial complications, although the overall frequency is greatly reduced. By far, the most common of extension of middle-ear disease is by Osteitis or CHOLESTEATOMA erosion. RADICAL MASTOIDECTOMY OPERATION is carried out for clearance of disease process.

Lastly about OTOSCEEROSIS and STAPEDECTOMY.

Stapedectomy is an unique operation which has outwitted all miccrosurgical procedure. Probably, one person in every 200 suffers from otosclerosis. It is common in female and there is marked hereditary tendency. The chief symptoms are gradually increasing deafness and tinnitus. STAPEDECTOMY is performed for relief of stapedial ankylosis (otosclerosis) and success rate is 98% in this magic operation and patients suddenly starts hearing on the table (as operation is performed under local anaesthesia with operating microscope). ^
The demand for microsurgery, no doubt, is closely tied to literacy and income levels. Better hearing is possible by microsurgery of ear. I would say possibility has turned into reality. Thanks to MICROSURGERY OF EAR.

STUDY OF DIPHTHERIA IN HOSPITALISED PATIENTS

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AIM OF STUDY: The study has been conduct mainly to find out the incidence of diphtheria in relation to age, geographical distribution and seasonal variation vaccination status of children, value of investigations, morbidity and mortality in diphtheria.

METERIAL AND METHOD : The data is collected from January 2000 to August 2001. During this period total 4915 patients were admitted in the pediatric ward of our hospital. Out of that, 226 cases were of VPDs and amongst VPDs 42 patients suffered from diphtheria. We could collect details of 25 patients from those 42 cases, so this study is conducted with data of 25 patients.

OBSERVATIONS:
(1) Among the incidence of different VPDs, besides tuberculosis, diphtheria and tetanus comprises major group causing morbidity and mortality. Another point that I want to highlight is incidence of AFP is reduced, of course due to aggressive efforts through pulse polio immunization.

(2) Diphtheira has affected mainly preschool children means majority of patients were

under five. Obviously it is due to lack of immunization, as we know that in area where widespread immunization is practiced incidence will be more in school age children rather than the preschool age children.

(3) Most of the patients were from rural areas, urban slum areas and peak incidence of admissions was found in later half of the year. Another attention seeking finding was that from village Kava, district Idar, 5 patients were admitted during three consecutive months and all of them died.

(4) None of patients were fully immunized. 19 out of 25 pt were unvaccinated while 6 were partially vaccinated for diphtheria. Interestingly 10 patients had taken multiple doses of polio in pulse polio immunization.

(5) Most of the patients presented as respiratory tract diphtheria. Typical membrane, low grade fever, dysphasia dysphasia and respiratory distress were main presenting features. Almost 24% patients developed carditis suggesting delay in treatments with ADS and severity of the diseases.

(6) Laboratory investigations shows. 2 patients had positive throat swab smear and 1 had positive throat swab culture for c. diphtheria. While some patients showed bacteria other than C. diphtheria.

QUESTIONS AND QUERIES : (A) Up to what extent can bacteriological investigations help in diagnosis of diphtheria ? (B) Has our concerntrations diverted more to PPIs program at the cost of other routine vaccinations ?

..... Possible suggestions for queries will be development of newer technique for rapid detection of c. diphtheria that should be cost effective, and simultaneous motivation for other conventional vaccines during PPIs. We showed our efficacy in reducing incidence of polio by PPIs so some aggressive actions must be required for other VPDs also.

TABLES:

Table No 1

1 st January 2000 to 31 st August 2001

Total No. of admission	4915
Total No. of OPD cases	226
Total No. of Diphtheria cases	42
Total cases of Diphtheria studied	25

Table No 2

Distribution of Area:

Rural 20 + Urban 5 = Total 25

Table No 3

Status of vaccination :

Unvaccinated	18
Partially vaccinated (c pulse polio)	6
status not known	1
Total	**25**

Table No 4

Discharged 8 + Expired 17 = Total 25

FINAL OUTCOME : Out of 25 cases 18 expired and only 8 patients could be discharged. This comes to a mortality of 72% in diphtheria. Overall mortality due to VPDs in hospitalized patients was 27.4% and diphtheria accounts for 46% of deaths amongst VPDs indicating diphtheria is a major killer disease.

SUMMARY OF THE STUDY : a) out of 4915 admissions in study period, 226 cases were of VPDs, of which 42 pts had diphtheria, b) study was conducted with 25 cases from those 42 pts. C) 21 pts were under five years of age. d) most of them were from rural area, e) majority of admissions had occurred in later half of year, f) all them were unvaccinated, while 10 pts had taken multiple doses of polio, g) 21 out of 25 had a typical membrane in throat while 6 had carditis. h) only 2 pts showed +ve throat swab smear and one had +ve throat swab culture for c diphtheria, i) 18 out of 25 pts died.

CONCLUSION : A) The incidence of VPDs like diphtheria and tetanus is of increasing concern. B) Diphtheria is a clinical diagnosis, although lab. Investigations may help in confirming the diagnosis. C) Amongst VPDs, diphtheria is one of the major killer disease. D) Lack of vaccination, delay in availability of proper treatment and limitations asso. With rural life like illiteracy, lack of awareness and nonavailibility of medical services are major contributing factors causing morbidity and mortality in diphtheria.

MORTALITY AND MORBIDITY IN NEWBORNS ADMITTED IN NICU (HOSPITAL BASED STUDY)

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TITLE-Key Words

NBW : Normal Birth weight
ELBW : Extremely low birth weight
VLBW : Very low birth weight
LBW : Low Birth weight
Morb Mort
Morbidity Mortality
HMD : Hyaline Membrane disease.
BA : Birth asphyxia
MAS : Meconium Aspiration Syndrume
TTNB : Transient Tachypnoea of New born
CHD : Congenital heart disease
Cong.Syph. : Congenital Syphilis

OBJECTIVES:

1) To know the incidence of admission of New born in NICU from the total live births in the hospital during the study period.
2) To know the birth weight and gestational age of these admitted new borns and problems related to mortality and morbidity in these patients.

METHOD:

The study was conducted by department of pediatrics NHL Medical college, K. M. School of PG Medicine & Research, Ahmedabad. The study included all the consecutive livebirths from September 2000 to August 2001. During this study, data was collected from the record maintained in the case sheets according to the proforma. The study included only hospitalized delivered live born babies and they were observed during their hospital stay only. The data was analysed and results obtained.

All the deliveries were attended by a senior Pediatric resident.

The recent sustained and significant decline in the infant mortality rate and a perceptible feeling that this decline may not continue at the same rate in the coming years has brought into focus the contribution of neonatal deaths to infant mortality. The fear that infant survival may not improve in the expected manner appears to be real as neonatal

mortality (0-28 days) has not recorded a change similar to post neonatal mortality rate (28 days to first year).

An analysis of the causes of neonatal mortality and morbidity reveals that a large proportion of these are contributed by infants born to mothers with' at risk prenancies' and/or infants born with low birth weight.

The term low birth weight denote infants with birth weight less than 2500 gms irrespective of the period of gestation. The low birth weight NB are further subdivided in two groups VLBW(BW less than 1500 gms), &ELBW (Less than 1000 gms.)

The prevelance of LBW varies from 20-40%. Majorityare term LBW.

The perinatal mortality is around 50 fold higher in LBW than in NBW. 75% of neontal deaths occur in LBW NB.

Thus birth weight is known to significantly influence the survival and later outcome of live born infant. Maturity of NB also significantly affects morbidity and mortality. Preterm NB's (Born before 37 completed weeks of gestation) are at high risk of complication in the perinatal period as opposed to full term NB (37 to 42 weeks of gestation).

To evaluate the mortality & morbidity pattern in hospitalised new borns, this study was undertaken. The services provided in the hospital are of level II care.

AIMS & OBJECTIVES:

1. To know the incidence of admission of new born in NICU from totallive births in the hospital during the study period.
2. To know the birth weight and gestational ageJ5t these admitted new borns.
3. To know the mortality and morbidity of the admitted new borns in relation W Birth weight and gestational age.

MATERIAL & METHOD:

The study period was 1 st September 2000 to 31 st August 2001. During this tenure total 2361 live NBS were delivered of which 300 (12.7%) were admitted in NICU. After admission the data were collected according to proforma. Weight was recorded with electronic weighting scale. The gestational age calculated by modified bellard's score. Detailed history, examination and necessary investigations were carried out and diagnosis made accordingly. All the data were recorded and analysed and results obtained.

TABLE NO. 1
THE MORBIDITY AND MORTALITY PATTERN ACCORDING TO BIRTH WEIGHT (n=300)

Problems	n1 NBW/8	n2 ELBW/1 1	n3 VLBW/15	n4 LBW/16	n Total n/50
Apnea	0	3	1	0	4
HMD	0	5	7	1	13
BA	3	2	3	9	17
MAS	2	0	0	4	6
TTNB	0	0	0	0	0
Pneumonia	0	0	0	0	0
Septicemia	0	0	3	2	5
Jaundice	0	0	0	0	0
Anaemia	0	0	0	0	0
Birth Injury	0	0	0	0	0
Cong. Mal.	2	0	0	0	2
CHD	1	0	0	0	1
Metabolic Prob.	0	0	0	0	0
Misc.	0	1	1	0	2
Cong. Syph.	0	0	0	0	0
Sub Total	8	17	15	16	50
Total	**n1=81**	**n2=11**	**n3=73**	**n4=129**	**300**

This table shows the morbidity and mortality in relation to birth weight.

In total 81 new born with normal birth weight following morbidity were noted. "BA (21) Jaundice (12), Congenital malformation (11), MAS (11), Miscellaneous (11), TTNB (6), Septicaemia (2), Metabolic problem (4), CHD (2) and no case had HMD orapnoea. Congenital malformation noted were: Hydrocephalus (3), Cleft lip cleft palate (2), Diaphragmatic hernia (2), Down's syndrome (2), Renal agenesis (1), Pierre Robin syndromic (1), while the cause of Jaundice in these groups were 3 ABO incompatibility. 1 Rh incompatibility, 1 Cephalhematoma, 1 Breast milk jaundice and 6 had exaggerated physiological jaundice. In CHD 1 had VSD and 1 had congenital arrhythmia. All four new borns with metabolic problems had Hypoglycemia only. Miscellaneous group (level) had minor problems e.g. not taking feeQs, vomiting, not passed urine, abdominal distension, etc. In these new borns no definite etiology was established.

In low birth weight new born, the morbidity pattern was as follows :
Apnoea (6), HMD (17), BA (35), MAS (6), TTNB (2), Pneumonia (2) Septicaemia (46), Jaundice (14), Anaemia (3), Birth injury (3), Congenital malformation (5), CRD (3), Metabolic disorders(8), 79 new borns had miscellaneous problems.

Apnoea and HMD were more prominent in ELBW & VLBW in new born. MAS & BA were reported in low birth weight new born>1500 gms. The causes of jaundice in this group were 1 ABO incompatibility & 13 had exaggerated physiological hyperbillirubinaemia. Among metabolic problems, 7 had Hypoglycaemic and one

hadhypocalcaemia. The congenital malformation consisted of one neural tube defect, one cleft clip, one down's syndrome, one hydrocephalus in CHD group 3 had CSD.

There was a big group of new born with miscellaneous problems. Mostly they were comprising high risk group and admitted in NICU. During their hospital stay they had no major problem.

Septicaemia was noted in 36 new borns. 3 new borns with birth injury had breech presentation and delivered vaginally.

TABLE N0.2
THE MORBIDITY AND MORTALITY PATTERN ACCORDING TO GA (n=300)

	<32=69	**32<37=78**	**>=37=153**	**Total 300**
Problems				
Apnea	4	0	0	4
HMD	12	1	0	13
BA	5	3	9	17
MAS	0	3	3	6
TTNB	0	0	0	0
Pneumonia	0	0	0	0
Septicemia	3	1	1	5
Jaundice	0	0	0	0
Anaemia	0	0	0	0
Birth Injury	0	0	0	0
Cong. Mal.	0	0	2	2
CHD	0	0	1	1
Metabolic Prob.	0	0	0	0
Misc.	1	0	1	2
Cong. Syph.	-	-	0	0
Sub Total	25	9	16	50
Total	**n1=69**	**n2=78**	**n3=153**	**n=300**

This table shows morbidity and mortality in relation to gestation age.

In total 153 term babies'BA (43), MAS (17), Cong. Malformation (14), Septicaemia (7), TTNB (7), Pneumonia (2), Anaemia (1), Birth injury (7), CHD (3) and 36 new borns had miscellaneous problem. No. case of apnoea or HMD was detected in this group. Congenital syphillis was present in 1 newborn.

In total 147 Pre-term new born, the morbidity pattern was as follows :-
Apnoea (6), HMD (17), BA (13), MAS (4), TTNB (1), Septicaemia (30), Jaundice (9), Anaemia (2), Birth injury (2), Cong. Malformation (2), CHD (2), Metabolic problems (5). Miscellaneous problem was found in 54 new born. Apnoea andHMD was more found in

less than 32 gestational weeks and no case of MAS was detected in less than 32 gestation ' weeks.

CONCLUSION & RECOMMENDATION:

LBW and preterm Newborns required higher percentage of admission in NICU than NBW and full term NB.
Apnoea & HMD was more common in preterm and LBW NB, Birth Asphyxia and MAS were more common in ternr NBW NB.

Septicaemia, Jaundice and metabolic problems are no1 significantly changed with either Birth weight or gestational age.

Mortality was inversely proportional to BW and GA. In the group of NB having HMD & apnoea mortality was high followed by BA, MAS. Septicemia and jaundice though very common had negligible or no mortality.

To reduce the morbidity and mortality efforts to decrease incidence of LBW, Preterm deliveries, establishing ventilator support as early as possible with asceptic nursing care will improve the outcome of NBs.

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POST EXPOSURE PROPHYLAXIS FOR HIV/AIDS

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INTRODUCTION:

HIV/AIDS is far more complex viral infectious disease caused by HIVvirus and the infectio'n is life long. Outcome is invariably fatal & no cure or vaccine is available.

Health Care workers (HCW) working at different levels in different diciplines of medicine come in direct or indirect contact with patient, patient's blood & other potentially infections materials (OPIM) body fluids & contaminated fomites while providing services & hence are at risk of acquiring HIV.

MOST EXPOSURES DO NOT RESULT IN INFECTION. THE RISK OF INFECTION VARIES WITH TYPE OF EXPOSURE & OTHER FACTORS SUCH AS :

- The amount of blood involved in exposure,
- Whether post exposure prophylaxis was taken,within 2-3 days(72hrs.) • -
- The amount of virus in patients blood at the time of exposure.

SOURCE INFECTIVITY;

High : AIDS Patient with low CD4 cell Count.
Or
Low : Asymptomatic individual or antiretroviral treatment with high CD4 cell count.

STEPS TO BE TAKEN ON EXPOSURE to HIV INFECTED BLOOD / BODY FLUIDS & CONTAMINATED SHARPS

1. Lab. Diagnosis for HIV / AIDS Immediately following an exposure.
2. Reporting of an Exposure to the higher authority.
3. Post exposure Prophylaxis (PEP) Determination of the exposure code Determination of HIV Status (HIV Sc) of the patient.
4. Antiretroviral Drugs therapy
5. Testing & Counselling
6. Duration of PEP
7. Pregnancy & PEP
8. Side - effects of these durgs.
9. Protective measures.

LABORATORY DIAGNOSIS OF HIV/AIDS

Two distinct Human Immuno deficiency Viruses, HIV-1 & HIV-2 are the aetiologic agents of AIDS.
Phylogenetically HIV-1 is divided into
(1) Group M (10 subtypes A-J)
(2) Group O (9 subtypes)
(3) Group N - New virus.

HIV-2 is divided into 5 subtypes - A to E

Subtype C is Predominates in India. In 50-93 % of cases primary HIV infection is symptomatic with a variety of symptoms ranging from influenza like or mononucleosis like illness to more severe neurological symptoms which can persist from few days to as long as two months, longer acute clinical illness is associated with rapid progression to AIDS.

Clinical Diagnosis of HIV / AIDS

1) Two positive tests for HIV infection along with
2) Any one of the following criteria
a) wt. Loss >10% of total body wt. Within last one month & chronic diarrhoea > 1 month duration or prolonged fever > 1 month duration
b) Tuberculosis
c) Neurological findings
d) Candidiasis of oesophagus
e) Recurrent episodes of pneumonia with or without cont aetiological confirmation.
f) Kaposi's sarcoma
g) Other conditions like
- Cryptococeal meningitis

- Neurotoxoplasmosis
- CMV vetinitis
- Penicilluim marneffei infection
- Recurrent herpes zoster infection
- Disseminated Molluscum contagiosum

3) Indirect (Non specific) tests :
CD4 cell count - Increased
B2 microglobulin - Increased
S. neopterin - Increased
IL-2 receptor – Increased
TNF(a)

4) Direct specific serological test Antibody detection
a) ELISA
b) Western blot assays

Tests which detect Antibody to both HIV land HIV 2

When a serum sample tests reactive once by a system of ELISA/Rapid/Simple test, the test is to be repeated immediately by a different system in order to confirm the diagnosis. If test is reactive second time the sample is to be taken up for any supplemental tests to confirm the diagnosis
• Second & third ELISA -Rapid / Simple
• Western blot
• Indirect Immunofluorescence
• Radio immuno Precipitation Assay.
Antigen detection
• PCR
• Viral Culture (research)
• Viral load assay

Testing is done for diagnostic purposes, it should be confidential
1) Immediately following an exposure

• Needle sticks & cuts - Washed with soap & water
• Splashes to nose, mouth or skin - flushed with water
• Eyes should be irrigated with clean water saline or sterile irrigants
• Pricked finger - should not be put into mouth reflexly & it should be allowed to bleed for 1 -2 mino. The use of bleach is not recommended

2) Report the exposure to the appropriate authority & condition must be treated as soon as possible with (72 hrs) 2-3 days. Initiating treatment after 72 hrs is not recommended.

3) PEP & PEP Recommendation :
The decision to start PEP is made on the basis of degree of exposure to HIV & the HIV status of the source from whom the exposure has occured.

Determination of PEP Recommendation:
Table

Exposure Code (EC)	HIV Status Code (HIV Sc)	PEP recommendation
EC1	HIV Sc 1	PEP may not be recommend
EC1	HIV Sc 2	Basic Regimen
EC 2	HIV Sc 1	Basic Regimen (most exposures are in this category)
EC 2	HIV Sc 2	Expanded Regimen
EC 3	HIV Sc 1 /z	Expanded Regimen
EC 2/3	HIVSc unknown	EC 2/3 consider Basic regimen (epidemiological risk factors)

EC1 : Source material (OPIM, blood/body fluid. Type of exposure : Mucous membrane /skin] or integity compromised Volume: Few drops / short duration

EC 2 : OPIM, blood / body fluids
Exposure thro' Mucous memb /percutaneous
Exposure
Volume: large: several drops / long dural Less severe : superficial scratch

EC 3: OPIM, blood / body fluids
Exposure: Sermtaneous
More severe: large bore hollow needle, deep puncture, visible blood on needle used in patients artery / vein HIV Positive exposure source
HIV Sc 1 :- +ve low titre exposure e.g. asymptomatic & high CD 4 count
HIV Sc 2 :- +ve High titre exposure e.g. advanced AIDS, Primary HIV infection & low CD4 count. HIV Sc unknown : HIV status unknown source unknown

Basic Regimen:-
Zidovudine (AZT) 300 mg twice a day x4 wk + Lamivudine (3 Tc) 150 mg twice a day x4wk
Expanded Regimen:
Basic Regimen + Indinavir or other protease Inhibitor 800 mg thrice a day

4) Testing & Counselling:
The health care provider should be tested for HIV as per the following schedule:
i) Base line HIV test - at time of exposure

ii) Repeat HIV testing - at 6 wks following exposure
iii) 2nd Repeat HIV test - at 12_wks following exposure HIV testing should be carried out on three ERS (ELISA), Rapid /simple) test kits or antigen preparation. The HcW should be advised to refrain from donating blood, semen or organ /tissues, abstain from sexual intercourse. In addition, women HCW should not breast -feed their infants during the follow up period.

5) Duration of PEP :
PEP started as early as possible in 2-3 days. (72 hrs.) The optimal course of PEP is not known but 4 weeks of drug therapy appears to provide protection against HIV. If HIV test is found to be positive at anytime within 12 weeks the HcW should be refered to a physician for treatment.

6) Protective Measures:
- Prevent occurence of accidental exposure & transmission of infection.
- Control surface contamination.
- Ensure safe disposal of contaminated waste.

CONCLUSION:
Confidentiality of HCW found to be infected must be maintained. All exposures must be reported to the indentif ied officer (local) & to National AIDS control organisation (NACO), government of India as above.

NACO has decided to supply PEP drugs to all cases in government hospitals through the state AIDS control societies.

CASH REPORTS
HYDRANENCEPHALY

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A eight days old male child full term normally delivered presented with macrocephaly. The patient was not having any other symptoms at the time of presentation. His Haematogram and CSF study were normal. Patient survived for two years, & died after two years when his head circumference was 79 cms.

On ultrasound examination of cranium done with convex 3.5 MHZ transducer (Aloka 630) it shows fluid filled cystic cavity in supratentorial region with thin cerebral cortex preserved. The posterior fossa shows cerebellar hemispheres preserved, & the falx is incomplete.

On CT scan it shows huge hypodense fluid filled cavity replacing supratentorial brain with preserved thin cerebral cortex. Cerebellar hemispheres are preserved. The thalami & basal ganglia are also preserved.

The exact cause in true occurrence of hydranencephaly is unclear. Friede cites multiple, examples from the literature involving maternal injury & infection as possible causes.The brains usually has preservation of posterior fossa structures, the thalamus, basal ganglia & variable but usually serve detruction of the remaining supratentorial elements with the occipitaUobes being best preserved.

The falx is present, helping separate the lesion from severe holoprosencephaly to which it has some imaging resemblance. Severe hydrocephalus & severe polyporencephaly may appear some what similar.

Clinical findings also help identify this entity. Hydranencepahlic infants are usually neither microcephalic as would be seen in alobar holoprosencephaly, nor macrocephalic, as would be seen with severe hydrocephaly. Unilateral hydranencephaty has been reported & less severe forms also occur.

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CASH REPORTS
FECAL FISTULA CAUSED BY ASCARIS LUMBRICOIDES IN OPERATED CASE OF ENTERIC PERFORATION

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A fourty five years old patient was admitted with central abdominal pain accompanied with abdominal distension since one day. He had history of having fever before ten days for which he was treated by his family doctor. On examination his pulse rate was 108 per minute. His blood pressure was 100/70 mm of Hg. Respiration was predominantly thoracic. Abdomen was distended. There was no guarding and rigidity. Tenderness was

present in umbilical region. There was neither hepatomegaly nor splenomegaly. Fluid thrill was present. On per rectal examination soft stool was present with fullness in Rectovesical pouch. Plain X-Ray Chest and Abdomen revealed free gas under both domes of diapharagm. Ultrasonography revealed presence free fluid in the abdomen. Exploratory laparotomy was done with lower Para median incision. There was dirty fluid about 1 liter., which'was sucked out. There was enteric perforation in terminal ileum, which was sutured with Silk 3/0 in two layers. On fourth post operative day patient developed leak from the main wound. Two days later a live round worm came out of the main wound. The fecal fistula was of low out put, around 200 ml per day. Patient was managed conservatively with total parenteral nutrition for 8 days. Then gradually liquids and foods were allowed. The fecal fistula healed completely in 16 days.

DISCUSSION:

Ascariasis is an infection of humans caused by Ascaris lumbricoides and characterized by an early pulmonary phase and later a prolonged intersinal phase. The adult ascarids are large cylindrical worms with blunt ends; they maintain themselves in the lumen of the jejunum by virtue of their muscular activity. Because of the extensive migration of which both larve and adults are capable, the manifestations may be diverse. Abdominal presentation may be abdominal pain, malabsorption of fat, protein, carbohydrate & vitamins. In a few cases it may cause intestinal obstruction. Rarely an adult worm will migrate into appendix, bile duct or pancreatic duct causing obstruction and inflammation of these organs. Worms may penetrate the intestinal wall particularly at anastomotic site. In our patient the worm might have passed through the suture line of perforation closure, and caused fecal fistula. The fistula was low out fistula and was resolved with conservative management.

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CASH REPORTS
ARNOLD CHAIRIII MALFORMATION

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A one & half months old male child presented with swelling over lumbar region posteriorly of six by four cms size.

The patient was not having any other symptoms.

CT scan Brain & plain x-ray skull shows Luchenschadel or lacunar skull.

Multiple tissue abnormalities visible within the posterior fossa with elongated 4th ventricle, displaced downwards. The lateral ventricles have a distinctive shape almost

parallel & there is pointed occipital horns giving it a "wooden shoe" appearance. The frontal horns also show V configuration to their callosal surface.

There is lumbar meningocele seen on lateral radiograph of lumbar spine.

The four anomalies usually referred to as Chiari malformation are not a completely related family, but all have posterior fossa anomalies.

Chiari II or the Arnold - Chiari - Cleland anomaly involve the entire brain & is associated with a thoracic or lumbosacral myelomeningocele in virtually 100 % of cases. The clinical presentation is that of the myelomeningocele, which usually is repaired within 24 hours after birth. There is genetic propensity since there is a much higher incidence of Chiari II myelomeningocele in families with an existing myelomeningocele child. Folic acid deficiency is probably an important factor.

Almost easily diagnosed on MRI midline sagittal study there are multiple features that can be recognized on all axes of both MRI & CT scans. The imaging findings of Chiari II malformation include the luckenschadel or lacunar skull is visible at birth on plain films or CT scan as inner tcfble scalloping. Scalloping of the posterior border of the petrous bones & clivus & enlargement of the foramen magnum are caused by pressure on the small bony posterior fossa by its contents & are present throughout life.

Multiple tissue abnormalities are seen within the posterior fossa. There is a descent of the brainstem with the lower medulla & cerebellar tonsils, usually below the foramen magnum, often down to the midcervical level. The fourth ventricle is elongated & narrow, usually ending below the foramen magnum. The straight sinus has vertical orientation & the tentorial hiatus is enlarged. This gives size to the so called "Towering Cerebellum."

The lateral ventricles have a distinctive shape almost parallel with the large pointed occipital horns in the axial view giving a wooden shoe configuration. The frontal horns are indented by prominent caudate nucleus, giving them a somewhat squared shape & make a V configuration to their callosal surface. Dysplasis of the corpus callosum is universally present & best visualised on sagittal MRI studies. The falx is hypoplastic in most patients allowing interdigitation of the cerebral hemispheres.

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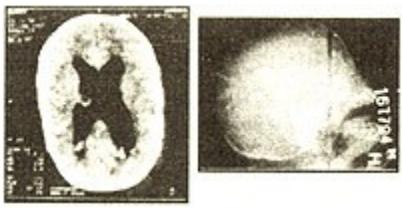

PATHOPHYSIOLOGY OF BREAST LESION :VISION BEYONDTHE CLINICAL EYE

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INTRODUCTION:

In Women, the breast Cancer is the most common cancer. In developing country, Cancer of cervix is the most common Cancer but the breast Cancer is almost as common & both account for 60% of all Cancer & make the second most common cause of Cancer death of Women. It is found that the breast Cancer is on rise in major & metropolitan cities of India. This appears to be related to late marriage, birth of child in the later age, fewer children and shorter period of Breast feeding .which are common practice in Urban Women.
Clinically.the breast disease prerent as Breast lump, Nipple discharge. A breast lump / mass whether begin or malognant is a cause of anxiety to the patient & her family members. The histopathological diagnosis is a universally accepted confirmatory mode of diagnosis & follow up. Due to limitation of implimentation of early diagnosis of breast Cancer by mass screening program, more than 2/3 of the cancers are already in advanced in curable stage at the time of histopathological diagnosis. This emphysize the requirement of early detection of suspicious of Cancer before it is evident clinically by inspection / palpation or by other means. In this study, we have presented the prevalance of benign & malignant disorder of Breast; compared them with similar study in other parts of the World & also compared our clinically palpable vs clinically non-palpable lesion of Breast which were find out by other means.

Material & method:

The study was carried out on the consecutive 100 clinically palpable female Breast mass who presented in our institute, during Jan 2001 to Des 2001 .Local examination comprised of size of lesion, discharge of Nipple,.regional lymph node .examination of contra lateral Breast, attachment of tumour to skin or deeper structure. Fine needle aspiration cytology and excision biopsy of the lump was carried out. The biopsy material was undergone routine histopathological procedure byt parafin wax method ect... The smears and the slides were stained with haematoxylin and eosin.The slides were exmined under light microscope .the FNAC diagnosis were compared with histological diagnosis. The observations were also compared with results of other similar sorts of studies done done at different parts of the world.

OBSERVATION:

The observations of the Histotogical Diagnosis are summarised in
Table No 1

Histological classification:

Name of the lesion	%
Fibroadenoma	41%
Fibrocystic lesion	18%
Fibroadenoma and fibrocystic lesion	2%
Mastitis	8%
Other Inflamatory lesion	5%
Phylloides	2%
Infilt.Duct carcinoma	21%
Medullary carcinoma	2%
Colloid carcinoma	1%

Total n= 100 .Then we classified these lesion into three category and modified as table NO 2

TABLE NO.2

BENIGN LESIONS	61%
INFLAMMATORY LESIONS	13%
MALIGNANT LESION	26%

Total n=100

Out of 100 lesions, 84 lesions were examined by cytological study. The FNAC accuracy was 98.75%.

DISCUSSION:

The study documented the fact that the benign lesions are the most common lesions . occasionally such lesions were also observed among the lactating women. In such lesions the reassurance is the main line of treatment though close follow up is mandatory.Such lesions are more common in young females(lind decade), The malignant lesions are second most common lesion of which the infiltrative duct carcinoma is the most common cancer.The malignant lesions were more common among fourth and fifth decade of female life.The mean age for malingnant for seven different studies was 44.o5. The inflammatory lesion comprised 13% of all lesions.The pyogenic and non pyogenic infection may supervene in benign and malignant lesion also., and one must be aware of it. Jamal A.A.et al and Mansoor I. et al carried out similar sort, of study on breast lesion and their results are summerised and compared with our result in Table NO 3.

TABLE NO .3

	Jamal AA	**Mansoor I**	**Our study**
Benign	57%	55.24%	61%
Malignant	32%	31.24%	26%
Inflammatory	11%	10.1%	13%

MIRAS I et al carried out retrospective histological study of infraclinical breast lesion diagnosed by mammography.The results are summerised and compared with our study in table NO 4

TABLE NO 4

Lesion	**Miras I**	**Our study**	**Benign**
	49.1	61	
Malignant	38.6	26	
Inflammatary	12.3	13	
	N=261	**n =100**	

Saw A.A. also carried out study on clinically non palpable breast lesion , detected by mammography. They found prevalence of malignancy 25% to 37% in various sub groups.This also suggest that prevalence of malignancy is not significently affected with the fact whether the breast lesion is clinically palpable or not.They further concluded that mammography should not withheld from patient who are seeking screening or who wishes follow up. This further emphasize that the breast cancer screening is the main weapon for early detection and prevention of cancer related morbidity and mortality.There is evedence that screening for breast cancer has a favourable on cancer related mortality. The breast Self Examination (BSE) is strongly recommended and encouraged to all the women of more than 20 years age.The clinical examination of breast is to be routinely carried to all women , though it may not adequate and reliable for large fatty breast. The mammography is the most sensitive and specific method for detecting small tumour (< Ic.m.Owhich are missed by palpation.The main drawback of mammography is very high dose of radiation (=15 time more than chest x ray) and

requirement of special tool and experienced radiologist.Santi P leone M.S. at al visualise non palpable breast mass by mammography even through radiolucent artificial breast implant. This suggest that mammography is very useful tool in detecting breast mass in surgically implanted breast where such mass is clinically possible to detect and helpful in follow up program after mastectomy or /& breast implant.As mammography is associated with significent radiation(it may induce cancer in susceptible individual) other method s are worth to be considered for the early detection of breast cancer.In thermography, the patient is not exposed to radiation but the method is not very sensitive .Magnetic resonance imaging (MRI)is a very sensitive and non radiating tool for early detection of breast cancer. Olson J.A.at al suggested that occult primary breast cancer even isolated axillary lymph node adenocarcinoma represent upto 15 of operable breast cancer.MRI may detect such occult breast cancer and direct the line of therapy. MRI can identify occult breast cancer. The limitation of MRI is the cost and availability.In the field of non invasive non radiating tools, the high resolution ultrasound examination of breast is under evaluation and carries very promising future. At present it may be used to guide the FNAC needle or biopsy needle.Abnormal DMA fingerprinting by DNA probe analysis is also under evaluation to differentiate the benign and malignant lesions of breast.Though at present this method is used to study the behaviour tumour and research.

Even upon the availability of latest methods for management of breast cancer, no major survival rate has yet been shown. Some progress rapidly. some survive even upon the metastasis. In general the prognosis is affacted by certain factors i.e. metastasis, local spread, tumour size, histological subtype , grade, hormone receptors, lymphovascular invation, proliferation rate, DNA content, expression of oncogens, and/or loss of expression of supressor genes, angiogenesis, proteases.

life style, high fat intake in diet, history of exposure to radiation, non lactated mothers, unmarried women, Strenious physical activity and reduction in fat intake is recommended to prevent breast cancer. AS the hystology is 100% sensitive and specific tool available in all the major towns in our country.and as at present early detection and early removal of tumour is only method of curing breast cancer, mass education regarding mass screening by self breast examination, and by other tools i.e. thermography, mammography, are the mandatory measures to reduce the morbidity and mortality associated with breast cancer.

CONCLUSION AND IMPLICATIONS:

From the study, it is concluded that benign lesions of the breast are more common and occur during second decade of women' life. Malignant lesions of the breast are the second common pattern and ocurring during 4th and 5th decade of women' life. Inflamatary lesions though less common, they may be curative by medical treatment. Rarely such lesions are seen in lactating mothers also. The benign lesion requires reassurance and close follow up.The prevalence of various lesions in our study was very similar to the studies done else where.Though FNAC is also routinely carried out to diagnose various lesions of breast, histopatholdgfcal method is finally diagnostic. In our set up the H/R FNAC correlation was 98.75%.When our results with palpable breast lesion were compared to clinically non palpable lesions, there was no significant difference in

prevalence of malignancy of breast. This suggest that it is not advisable to waif for clinically palpability of breast lesion and to withheld the screening for breast cancer .As .such palpable malignant breastr lesion are associated with high morbidity and mortality. So we strongly emphasize for other methods for early detection of. breast lesion as early as possible i.e. systematic self breast examination, thermography, mammography. And when the risk is very high even MRI study alsoi.e. family history of cancer of tireast.Histopathology is useful once the lesion is suspected.In set up , it is worth while to consider the risk factors for breast cancer.,i.e.family history, obesity, sedentary life style, high fat intake in diet, history of exposure to radiation, non lactated mothers, unmarried women, Strenious physical activity and reduction in fat intake is recommended to prevent breast cancer. AS the hystology is 100% sensitive and specific tool available in all the major towns in our country.and as at present early detection and early removal of tumour is only method of curing breast cancer, mass edu¬cation regarding mass screening by self breast examina¬tion, and by other tools i.e. thermography, mammography, are the mandatory measures to reduce the morbidity and mortality associated with breast cancer.

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Move for Health
World Health Organization – 2002

(Dr. Jay K. Sheth - Assistant Professor, Dept. of P&SM)

World Health Day is celebrated every year by the World Health Organization on 7th April with one World Health Day Theme to focus attention of international community on a specific aspect of public health issues of worldwide concern. World Health Day 2002 is a global advocacy activity dedicated to highlight the importance of physical activity with the theme "MOVE FOR HEALTH"

The message is one of concern and hope. Physical Activity is an important part of Health as it is defined by WHO that "Health is a state of complete physical, mental & social well

being and not merely an absence of disease of infirmity which enabled him to live a socially & economically productive life." Without regular physical activity the balanced state of positive health is unlikely to achieve or maintained for longer duration. With Regular Physical activity people can work productively and fruitfully, and is better able to make a positive contribution to the community.

Physical activity is any body movement that results in an expenditure of energy i.e. burning calories, simply putting moving. Any physical activity with make you feel better. The suggested minimum amount of physical activity required for the prevention of disease is about 30 minutes of moderate activity, every day. For'those who count calories, this translates into about 150 calories per day. This can be translated into a variety of activities including routine household work or even sport or other activities. If you're new to physical activity, you can start with a few minutes of activity a day and gradually increase your pace, working your way up to 30 minutes. Remember that half an hour is only the minimum recommendation. Of course, the more time you spend moving for health, the more you gain. The most important thing is to move!

Physical activity can be done almost anywhere and you neither require any special equipment nor you have to pay any cost to be physically active. Another advantage is also is that you don't have to give your valuable time for these as it can be easily incorporated within your daily schedule. The health benefits of regular physical activity are many. Physical activity not only has the potential to improve and maintain good health, but it can also bring with it important social and economic benefits. Regular physical activity benefits communities and economies in terms of reduced health care costs, increased productivity, better performance, lower worker absenteeism, increased productivity and increased participation in sports and recreational activities. In many countries, a significant proportion of health spending is due to costs related to lack of physical activity and obesity.

Recent studies have shown that children around the world are becoming increasing sedentary - especially in poor urban areas. Computer games and television are replacing time and resources devoted to physical activity. This can have lifelong health consequences. Being active has the potential to help children and young people develop coordination; build and maintain healthy physique; control body weight and reduce fat; and develop efficient function of different organs. It gives young people opportunities for self-expression, building self-confidence, feelings of achievement, social interaction and integration. It also helps prevent and control feelings of anxiety and depression. Involvement in properly guided physical activity and sports can also foster the adop¬tion of other healthy behavior including avoidance of tobacco, alcohol and drug use and violent behavior. Patterns of physical activity acquired during childhood and adolescence are more likely to be maintained throughout the life span, thus providing the basis for active and healthy life. Such good practices if accepted, as good community practice over a period of time will benefit to the whole society & generations as a whole. On the other hand, unhealthy lifestyles adopted at a young age are likely to persist in adulthood.

Physical activity can improve quality of life in many ways for people of all ages. Active lifestyles provide older persons with regular occasions to make new friendships, maintain social networks, and interact with other people. Improved flexibility, balance, and muscle tone can help prevent falls -a major cause of disability among older people. Physical f activity can also contribute greatly to the management of some mental disorders such as depression apart from giving self-confidence and self-sufficiency; qualities that are the foundation of psychological well-being. Organized exercise sessions, appropriately suited to an individual's fitness level, or simply casual walks can provide varied benefits to the aged. If you are a bit late to start, don't worry; While being Regular PA helps to:

• prevent/ reduce the cardiovascular diseases, diabetes II and colon cancer.
• promote mental health, reduce stress, anxiety and depression.
• prevent/ reduce osteoporosis (toss of bone mass).
• reduce self-destructive anti-social behaviour such as smoking, substance abuse and suicide, improve MENTAL functions. Regular PA helps to
• enhance memory, learning understanding and concentration, provide SOCIAL benefits. Regular PA helps to:
• lift self-esteem, build confidence and maintain optimism.
• enhance teamwork with peers, family and community.
• promote social interaction and contribute to social integration.
Facilitate HUMAN DEVELOPMENT
Regular PA helps to:
• promote economic development of family, community and of nation.
Practical guidelines:
" Perform at least 30 minutes of physical activity in a day.
" If you have any health problem, consult your doctor first.
" At the same time, follow a healthy diet and refrain from tobacco.

SELECTIVE ESTROGEN RECEPTOR MODULATORS (SERMs)

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INTRODUCTION

A new category of agents called as Selective Estrogen Receptor Modulators (SERMs) have been identified to occupy a place in between estrogens and antiestrogens because they are designed to act in specific ways at each of the receptor sites.

SERMs are compounds whose estrogenic activities are tissue-selective. The pharmocological goal of these drugs is to produce estrogenic actions in those tissues where these actions are beneficial (bone, brain, liver during post-menopausal hormone replacement) and to have either no activity or antagonist activity in tissues such as breast or endometrium where estrogenic actions (cellular proliferation) might be deleterious.

Currently approved SERMs in United States are:

1. Raloxifene Hcl: a potent estrogen agonist in bone. It is approved for the prevention and treatment of osteoporosis in postmenopausal women.

2. Ormelpxifene: a potent estrogen antagonist on uterus as well as breast tissue. It is approved for the prevention and treatment of dysfunctional uterine bleeding (DUB) in women.

3. Tamoxifen : exhibits anti-estrogenic activity (on uterus and breast tissue), estrogenic activity in bone, liver and the endometrium tissue. It is approved for the treatment and prevention of metastatic breast cancer.

4. Toremifene : is chemically related to Tamoxifen, and is approved by USFDA for the treatment of metastatic breast cancer in postmenopausal women.

This article discusses the unique properties of SERMs Ormeloxifene and Raloxifene and its role in the manage¬ment of Dysfunctional Uterine Bleeding (DUB) and Post Menopausal Osteoporosis (PMPO) in Women.

(I)ORMELOXIFENE IN DYSFUNCTIONAL UTERINE BLEEDING (DUB)

Dysfunctional Uterine Bleeding (DUB) is a problem that often affects women as they start to get periods and as they get closer to menopause. The main symptoms are prolonged and/or irregular menstrual bleeding. DUB occurs because of a hormone imbalance in the body.

ò Dosage schedule is: 60 mg twice in a week every Sunday and Wednesday for 12 weeks, followed by 60 mg. once a week for next 12 weeks.

Ormeloxifene selectively functions as an estrogen antagonist in reproductive tissues. It has a potent anti-estrogenic action on the uterus as well as breast tissue, but has a mild estrogen agonist effect on the bone and cardiovascular system. It blocks estrogen during post-ovulatory phase and hence has a contraceptive action. It also blocks the effect of estrogen in breast tissues and therefore reduces the risk of breast cancer.

Mechanism of Action of Ormeloxifene in DUB.

Ormeloxifene normalizes the bleeding from the uterine cavity by regularizing the expression of estrogen receptors on the endometrium. It prevents proliferation of endometrium and does not effect the cornification of vaginal and cervical epithelium. Ormeloxifene competes with estradiol E2 for binding with dytosol receptors. It not only blocks cytosol receptors but also causes their prolonged depletion and has long-lasting post withdrawal effect. In therapeutic doses it does not effect the secretions of pituitary, thyroid or adrenal hormones. It has been used in the treatment of dysfunctional uterine bleeding. (DUB).

Thus, an ideal therapy for perimenopausal women Will be one that prevents bone loss, has a positive effect on the cardiovascular system and provides no risk of breast or uterine cancer. Selective Estrogen Receptor Modulators (SERMs) in general and Ormeloxifene in particular satisfy these requirements.

(II)RALOXIFENE IN POST MENOPAUSAL OSTEOPOROSIS (PMPO):

Women entering menopause often report physical and emotional changes as their estrogen levels drop. Reduced production of ovarian steroids after menopause is associated with increased risk of cardiovascular diseases and osteoporosis in particular. Osteoporosis is a chronic, progressive condition associated with micro architectural deterioration of bone tissue that results in low bone mass. As the condition progresses, there is an increase in bone fragility and a consequent increase in fracture risk. Hormone Replacement Therapy (HRT) with estrogen can have positive effects in postmenopausal women, including reducing osteoporotic fractures and possible cardiovascular benefits. But, HRT is associated with side effects.

Raloxifene is a Selective Estrogen Receptor Modulator (SERM), a new form of antiresorptive therapy that reduces the risks of Osteoporosis and also improves the cardiovascular profile in posfmenopausal women.

Single Oral dose of 60 mg/day.

Raloxifene is a potent estrogen agonist on bone. It has anti-resorptive properties on bone and also has estrogen like effect on biochemical markers of bone turnover, histomorphometric parameters and calcium balance in PMPO. It consistently and significantly reduces the level of serum markers (Osteocalcin, bone specific alkaline phosphate-BSAP) on bone formulation and also reduces urinary markers of bone resorption (C & N telopeptides). Partially, it returns overall bone turnover indices to pre-menopausal level. It exerts effects on bone cell homeostasis, thereby significantly increases Bone Mineral Density (BMD) and improves bone quality and strength in post menopausal women.

Mechanisms of Action of Ratoxifene in Postmenopausal Osteoporosis.

Raloxifene has anti - resorptive activity that reduces the risks of Osteoporosis and also improves the cardiovascular profile in postmenopausal women. It influences gene transcription via the intermediation of the estrogen receptor by interacting with a DNA site distinct from the estrogen response element.(ERE). It activates gene encoding transforming growth factors (TGF-B3) which together with cytokines induce production of osteoblasts and inhibits the activity and shortens life span of osteoclasts. It produces significant positive calcium balance shift in postmenopausal women. It showed marked effect on bone density mass and markers of bone turnover with dramatic reduction in fracture risk. It increases bone mineral density (BMD) of lumbar spine by 2.6% , femoral neck by 2.1% and total hip by 1.6%. .It reduces relative risk of osteoporotic fractures by 50% in PMPO women and produces beneficial actions on cardiovascular system. It reduces significantly serum levels of total and low density lipoprotein cholesterol from baseline in postmenopausal women. It is more potent in inhibiting estrogen induced proliferation of MCF-7 human mammary tumour cells. It also inhibits proliferation of other estrogen sensitive mammary tumour cell lines. It reduces the risk of invasive breast cancer by 76% in PMPO women. At doses upfo 150 mg / day for 3 years : it did not produced signifi¬cant changes in endometrial thickness or uterine volume, it did not affect cognitive functions.

Thus, Raloxifene significantly increases the bone mineral density in postmenopausal women and reduces the risk of vertebral fractures. Hence, safely ensures a graceful post¬menopausal life.

BENERTS OF SERMS THERAPY: Offers followina benefits:-

Unlike, Hormone Replacement Therapy (HRT), SERMs do not produce:
(i) Endometrial Cancer
(ii) Breast Cancer
(iii) Uterine Cancer
(iv) Gall Bladder Disease
(v) Blood Clots / Hypertension
(vi) Undiagnosed Vaginal Bleeding
(vii) PMS - Type symptoms including breast tenderness & pain.
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SCHOOLTEACHER'S KNOWLEDGE ATTITUDETOWARDS AIDS EDUCATION

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INTRODUCTION:

Since the prevention of HIV transmission is the only way to control the spread of AIDS, it is essential that resources be directed towards the understanding of determinants of risky behaviour including sexual risk behaviour, injecting drug use behaviour and blood donor behaviour. This understanding will facilitate the development of intervention which-encourage behaviour change to reduce the risk of HIV transmission. These prevention efforts rely on providing information on HIV/AIDS to change the behaviour. With onset of HIV and AIDS in India in last one decade, there have been moves at a national level to integrate the information on AIDS and sexuality in the school curriculum. Only recently there have been some attempt in the field of school based AIDS education. If the school based AIDS education programme is to be made effective, it is essential to look the attitude and knowledge towards AIDS education among secondary school teachers.

In India, still the commonest mode of transmission of HIV virus is heterosexual behaviour (74% park) So the school based AIDS/sex education is mandatory measure to make the AIDS control programme effective.
In the context to AIDS and sex education message of WHO is very clear. WHO mentions that it is important that appropriate information and education for the prevention of AIDS be provided prior to the onset of sexual activities. Adolescents and school students are therefore a priority group for HIV/AIDS prevention. Preadolescent as well as adolescent boys and girls should receive appropriate information and education regarding HIV and AIDS. In schools, the AIDS education should not, be ignored and such education should be integrated into regular curriculum like General Science, Life Science, Biology, psychology and sex/ health education.
The present study is focussed on to the attitude and knowledge towards AIDS education amongst the secondary school teacher in Ahmedabad

Material and method:

With a view to assess the existing knowledge attitude & beliefs on AIDS education, Questionnaire (total thirty Questions) was prepared in English and Gujarati. The

Questionnaire was presented to secondary school teachers after brief introduction of the objective and subject of the study and after oral consent of the Principal. The teachers were encouraged to opine and respond to all the questions to their level best. They were told to feel free to share their views. It was also told that it is not compulsory to write their names, name of the schools on the answer sheet except their age, sex and the faculties (science, arts, commerce etc.) There were total thirty items about AIDS-SEX education in questionnaire each carrying 3 score. There were four sub items in Question no.13 (see table no.1) making total score of the Questionnaire one hundred (100). Please give your opinion regarding following questions on H.I.V. & A.I.D.S.

Observations:

The study assessed the knowledge and attitude of school teachers towards. AIDS education. There were total 112 teachers,(63 male and 49 female) mean age 27 (S.D.6.3) The Correct responses of individual questions and teachers responses shown in table fJo.2 in form percentages. Questionnaire in English (Table No. 1) A.I.D.S. EDUCATION PROGRAMME

(1) Is the sex education is in your current curriculum of school education ?
(2) Do you think that the sex/AIDS education should be in your syllabus ?
(3) What is AIDS ?
(4) What is H.I.V. ?
(5) What is the different between HIV positive and AIDS ?
(6) What is immunity ?
(7) What is C.D.4/T4 cells ?
(8) What is virus ?
(9) Who are at high risk of HIV and AIDS ?
(10) How the AIDS is transmitted ?
(11) How the A.I.D.S. is not trasmitted ?
(12) What are the laboratory tests for HIV and AIDS?
(13) What is the term (meaning of) sex, Gender, Sexuality, and S.T.D.?
(14) What is the natural function of sex ?
(15) What is the physiology of sex?
(16) What do you know about the contraceptives ? AAAA
(17) What is condom ?
(18) Do you think that you require training to impart the AIDS education ?
(19) What do you know about the risks pf Drug abuses ?
(20) Are the drug abuser at a high risk of AIDS ?
(21) Who are at very low risk of HIV and AIDS ?
(22) What is safer sex ?
(23) What are the options of safer sex ?
(24) Why the young student should receive the AIDS/Sex education instead of Adults ?
(25) How the blood born AIDS- Transmission can be prevented ?
(26) Will you donate your blood voluntarily ?Why?
(27) What are the problems of people with AIDS (P.W.A.) ?
(28) Is the treatment of AIDS available?

(29) Is the vaccine for the AIDS is available ?
(30) What should be your attitude towards the HIV positive and AIDS people ?

Table showing the correct responses to knowledge attitude to AIDS Education among the school teachers.

Table No.2

No.	Correct Responses %	No.	Correct Responses %
1	0%	16	50
2	100%	17	100%
3	12%	18	100%
4	8%	19	6%
5	2%	20	32
6	56%	21	18
7	4%	22	0%
8	32%	23	2
9	34%	24	62
10	38%	25	36
11	48%	26	92
12	18%	27	20
13	2%	28	33
14	14%	29	32
15	10%	30	82

DISCUSSION:

Few studies are already done about the teacher's aware¬ness and opinion about AIDS and its implication for school based AIDS education, Kumar A and Menra M atat studies two hundred and thirteen teacher's responses on aware¬ness and opinion about AIDS education New Delhi, They found some misconceptions about transmission of AIDS. Among fhe teachers Though most of them opined that they could play an important role in educating the students about AIDS. Majority of teachers were in favour of starting class room based AIDS educations; begining from secondary classes onwards. They further opined that (50%) teachers could educate the students better than the Doctors or par¬ents. The authors concluded that after being properly trained, teachers can be effectively utilized for educating the stu¬dents.

Brook V et al carried out exploratory study on teacher's attitude towards AIDS. The most of the teacher's opined that AIDS education should be included in the regular high school teaching programme. The teachers showed positive interest in participating seminar about AIDS. The authors concluded that ministries of education and health should organise regular seminar on AIDS, for secondary school teachers.

By analysing the teachers respnse to various Questions (table 2) in our stud it was found that the AIDS education is not in the current regular school education programme. They all responded (100%) positively to include the AIDS educa¬tion in school curriculum, considering the fear of AIDS. The factual knowledge of AIDS among school teachers was inadequate. There were lots of misconcepts about the means of transmission of AIDS. The science teachers scored sig¬nificantly more ($P< 0.05$) than the teachers of other facul¬ties. So The science teachers can easily be trained to im¬part school based AIDS education.

Q. No. 1 a, 14,15,16,17, 21, 22, 23 were ralated to sexuadity, reproduction and contraceptives. All were aware that condom can prevent the AIDS transmission. This is the result of huge advertisement about promoting the condom use for AIDS prevention. It is made out as if condom is the answer to AIDS. Though the condom may reduce the risk of HIV infection, it is only short term step. Advising the condom use to young people is like sending a young men into a building which is on fire and likely to collapse and telling them it is unsafe provided he wore a helmet. Since the fail¬ure rate of condom for the protection of HIV and AIDS is reported to be upto 11% ,such advertisement are in fact promoting high risk behaviour partly because of false sense of security. This is misleading. Unless effective alternative measures are taken to prevent the young people from in¬dulging in high risk behaviour, we cannot really arrest the spread of HIV infection. About 5% homosexual people exist in Indian nature between the age group of 15 to 55 years. In the era of HIV and AIDS, the education of sex and human sexuality is required to be reconsidered to prevent the risk behaviour. The school education must see, that the young students learn to avoid risky behaviours and learn to ex¬press the responsible, healthy, human sexuality .For the concept of responsible, healthy sexuality; necessary edu¬cation and training should begin early in life with respect to attitudes and relationship. The multifaceted AIDS education programme can modify the students conceptual understand¬ing and factual knowledge about AIDS and decrease the misconception about the AIDS. This can be achieved by direct educational intervention. The untrained student may indulge pervert experiment to get new kicks in the absence of proper guidance. It is true that to change in behaviour is very difficult when it is attempted later stage. The AIDS, SEX education proposed here in early stage which is what the education is all about and / or should be.

Considering the fact that commonest mode of transmission of AIDS in youth is sexual'mode, the brief anatomy and physiology and allied facts of human reproductive system human sexuality, safer sex, safer sex techniques, value based education must be provided and taught in context prevention of HIV and AIDS.

The adolescent need participatory learning methods which built on there knowledge and experience and allowed them to explore and discover their own values and options and make their own decision.In meeting the special needs of adolescents in AIDS education, it is important to educate teachers about AIDS education for adolescents. The teach¬ers must learn to listen the young student's fear and misconception and must able to respond with accurate informations. In this context, WHO recommend to consider following four points:-

(1) Adoles snts are attracted by risky behaviours.
(2) Accurate information should be conveyed in order to dispel the fears, misunderstandings, and prejudiss.
(3) Education should be given at the level of the adolescents.
(4) Appropriate approach and medium should be used to provide the education

The education on sexuality is real challenge in our country. The orthodox social forces are the major barrier and the resistance is more complex problem in certain cultures and ethnrite groups.
All teachers (Q-18) felt that they are not cabal of impart¬ing and requare aducte training to impart AIDS education to school students:

The blood translusion and drug abuse are further areas related to AIDS transmission and can be intergrated with AIDS education training programme.

There were lots of myths and worries regarding the clini¬cal featurers, treatment and vaccine of AIDS, among the teachers. This can be removed by teachers training. The WHO recommend that AIDS education must include the simple symptoms and signs of HIV infection which student must identify and may seek the medical advise when ever necessary. It is emphasied that vaccine for AIDS is not avail¬able and not going to be available in near future (And if at all available in future it will be too costly to afford the develop¬ing country). So the only means of prevention of HIV and AIDS, is preventive measures by education in school education.

Attitude toward people with AIDS and HIV positive is also a key issue in AIDS education. The people with HIV and AIDS face double problems. One way, they are suffering from physical and psycological problems and sometimes facing death .On the other hand, they are hatrel, feared and left for loneliness. In this context, the education must in¬clude to establish proper, kind, loving and caring attitudes to AIDS people.

Correct knowledge of how the AIDS is transmitted and how the AIDS is not transmitted, is extremely helpful to change the society's attitude towards HIV and AIDS prople. In this context, following statements of AIDS education in secondary school students are the guidelines to prepare the syllabus or curriculum for the text book of students :

(1) Students should able to understand the nature of AIDS and its transmission.
(2) They should able to make in form descision about behaviour that protect them from AIDS.
(3) They should able to understand the symptoms of AIDS and seek appropriate medical care when needed.
(4) They should able to value their own health and relation ship free from HIV and AIDS.
(5) They should able to behave personally and socially in such a way that eliminate the risk of spreading HIV virus.
(6) They should able to reject biased information and myths related to HIV infection.
(7) They stiould able to develop positive attitudes towards those who are infected with HIV and AIDS.

To achieve these goals, actions were needed to:

- Hnscrease the level of knowledge about HIV transmission and AIDS among school students.
- Increase the level of knowledge about HIV transmission and AIDS in community level in general.
- Increase the interpersonal skill of school students with particular attention to communication, self esteem, value clarification, decision self cleaniness inr making relation ship.

CONCLUSION:

The Study documented the fact that the exhisting knowl¬edge of AIDS education is inadequate amongst the school teacher. From the study it is also concluded that the AIDS education is not in the current curriculum of secondary school education. All the teachers felt and thought that the AIDS education must be included in the school curriculum consid¬ering fear and the pandemic nature of AIDS. All the teachers expressed their views that they cannot provide the AIDS education unless they are trained to give such education. The teachers of science faculty scored significantly better than other faculties Arts, Commerce ($P<0.05$). So it can be recommended that the science teachers can easily be trained to impart AIDS education in secondary schools.

It is further conclucded that the existing knowledge of AIDS is inadequate among the school teachers. All teach¬ers in the study group felt that they can provide AIDS edu¬cation only after proper training. The department of general education and department of Health & Medical education should take synergistic actions to provide the adequate train¬ing to secondary school teacher. Intergrating actions of gen¬eral education department and Health & Medical education department can also be helpful to prepare final curriculum of AIDS education programme effective at state level and na¬tional level. Such efforts should first on training the school teachers to impart school based AIDS education in class¬room. A trained teacher effectively provide the AIDS educa¬tion to school student. It can further be stated that AIDS education can be intergrated in the curriculum of B. Ed. Training(Bechlor of Education). As, the B.Ed, training is compulsory for secondary school teachers. So the efforts of resources can be minimised to train the new incoming teachers.

Hence a comprehensive stepwise approach is required if our efforts to prevent HIV infection by education on long term bases are to be effective by school based AIDS edu¬cation.The first step is the need fortrained teachers in school to impart school based AIDS education. The second step is to impart the AIDS education to school students by the trained teachers in the classroom.

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HIV INFECTION ANDTUBERCULOSIS

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Q. Question. A. Answer.

Q. What is the prevalence of HIV infection and AIDS in the world? What is the prevalence of tuberculosis infection as disease in the world ?What is the prevalence and incidance of co-infection and co-existing disease in the world?

A. Prevalence of HIV infection in the world -14 million Prevalence of AIDS cases-2.5 million Prevalence of tuberculosis infection in the world -1700 millions Incidence of tuberculosis -8 millions every year out of which 7.6 million in developing countries 4 million people die due to tuberculosis every year prevalence of co-infection-4 million Incidence of co-existing diseases is around 2 lacs.

Q. How HIV pandemic in the world is likely to worsen the tuberculosis situation in developing countries like India ?

A. Pandemic of HIV in the world may worsen tuberculosis situation in the following ways by reactivation of latent TB infection among dually infected persons. by new infections with tubercle bacilli and rapid progression to active disease in HIV infected persons, by inceasing the number of cases in the general population .where infection and disease will result from HIV positive individuals. developing tuberculosis by either reactivation or recent infection.

Q. What is the role of tuberculin testing in patients of tuberculosis with HIV infection?

A. It depends on the stage of HIV infection, when the test is done. If TB complicates the stages of HIV due to development of Anergy(loss of immunity), the test is often negative. On the contrary, the test is often positive when TB complicates the early stage of HIV infectionand at the stage in which the cellular immunity is preserved.

Q. What should be the policy of BCG vaccination to infants of HIV sero positive mothers?

A. BCG vaccination is safe and hence recommended, irrespective of the serological status of the mother. Since infants born to HiV seropositive mother are at increase risk of becoming infected with tuberculosis from their immunocompromised seropositive parent, the potential benefits from BCG far outweigh the the theoritical risk of disseminated BCG infection in the HIV infected infants.

Q. What chemoprophylaxis is advocated to co-infected (HIV+TB) adult?How long?

A. INH 300 mg daily for 12 months is routinely recommended for co-infected adults.Recently some authorities recommend rifabutin 600mg .daily for the rest of the life.if Rifabutin is available and affordable.

Q. What should be the dose and duration of ATT in tuberculous patients with HIV infection? Various studies suggest that the dose and duration of ATT are the same in HIV infected patient as with non -HIV infected
patients.

Q. What are the silient features of Mycobacteriiwn Avium Complex(MAC) disease? Mycobacterial disease is common among patients with AIDS and among persons at the risk of HIV.

- MAC is the most common mycobacterial species identified in AIDS.
- MAC in AIDS almost invariably presents as disseminated disease.
- The usual presenting symptoms are numerous and non-. specific, with persistent or intermittent fever being the only finding .present essentially in all patients.
-Other symptoms include weight loss greater than 20 pounds.anorexia abdominal pain and diarrhoea.
-Physical and laboratory findings include fever hepatosplenomegaly, generalised lymphadenopathy including mediastinal adenopathy,
-There may not be significant radiological evidence of pulmonary involvement.
-Diagnosis of disseminated disease is made by culture of the organism from blood,bone-marrow or stool.
-Rarely biopsy of the lymphnode is necessary to demonstrate the organism.
-In patients with diarrhoea and malabsorption.small bowel biopsy may be required. Histologically, granuloma is not seen but sheets of foamy macrophages filled with AFB are commonly seen. Q. What is the treatement of MAG disease?
-Most of the first line antimycobacterial drugs with good in vitro activity against M.tuberculosis have 10 to 100 times less activity against MAC isolates. The drugs with best in vitro activity are second line drugs such as cycloserine and ethionamide which have much more toxicity than the first line drugs.
-For non-cavitary pulmonary involvement .therapy for underlying pulmonary disease like bronchodilation,broad-spectrum antibiotics, smoking cessation etc. should be adviced.
Intensive phase of 2SHRZ or 2HERZ or 2SHER and the continuation pnase ot n HtH(n= duration is not tixeaj can oe
tried . The usual duration is 18 to 24 months or at least 12
months after sputum culture conversion .
For those who do not respond to/tolerate first line drugs,
may be given cyclosporine 250mg twice a day and or
Ethionamide 250 mg twice a day, to be increased to thrice a
day later on may be advocated, along with some necessary
first line drugs like HR, HRZ, HERZ ect.
Other drug with potential use, in this situation include
clofazamine, ciprofloxacin, ofloxacin, clarithromycin,
Sparfloxacin, ect along with other drugs.

-For localised lesions in one lobe of the lung, resectional surgery may be advised.
-Solitary nodule due to MAC not triggering any symptoms may not necessitate any treatment.

Reference:
Tuberculosis (Practical Aspects) Second Edition by the same Author.

MEDICAL SCIENTIST QUEST:
MALPIGHI MARCELLO (626-1694)

The Father of Histology, he was born nearBologna, became professor of physics ther at the age of 25, .In 1666 he returned to Bologna as professor of Anatomy, where he was succeeded by his pupil valsalva> He founded the science of microscopical anatomy.describing the capillaries in 1660 (thus completing the evidence for Harvey' exposition of the circulation of the blood) and the crypts of Lyberkuhn in 1688,57 years before Lieberkuhn. His writings were published in England in 1687 .In 1691 he became physician to pope Innocent XII, and died in Rome three years later .He is remembered for:
1) Malphigian body: Glomerular apparatus in Kidney(1666)
2) Malphigian corpuscles: Aggregates of Lymphocytes in the spleen.(1669)
3) Malpighi' s Layer: Germinal layer of epidermis.

GALVANILUIGI: 1737-1798
Professor of Anatomy , Bolagna. Also a Physist and physiologist, his chance of observation that electric current caused the muscle of a skinned frog' leg to contract formed the basis of the science of animal electricity(1786). He had also noticed that frogs hung from an iron fence by brass hooks through their spinal cords exhibited contractions; this also led him to discover the electrolyc potentials of dissimilar metals.

Galvanic stimulation: Stimulation of an excitable tissue with current of low intensity and duration(1791)

Von Roentgen, Whilhem Conrad (1-845-1923)
Born of a Dutch mother and German father, won the nobel prize in Physics, for his discovery of 1. Roentgen Rays : X -ray in 1901.

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