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Fitness is applied Health :

DR.JANARDAN V. BHATT

In context to physiology, the health of a person is relied on various test and physiological parameters. If such test and parameters for various body system and organs are within normal range, (within physiological limit) person is considered fit or healthy one. In such situation, the single test is not adequate. Multiple & repeated tests are essential to justify the normal functioning of organs, systems & the body. This creates the physical health. As the WHO define the health as physical, mental, social (and! Spiritual) well-being of a person and not merely the absence of a disease, infirmities and old age. Truly the health is function of harmonious and integrated work cells, tissues, organs and systems. But question is such healthy person can climb 1000 feet hill or the 10 stairs of multistory building, can change the wheels/tires of the car in situation of emergency. This is fitness ability to respond to physical stress. This is the state beyond the health. This is the positive health and is an a step ahead of health i.e. applied health.

Physical fitness is most essential in sports physiology and medicine. All the components of the fitness are essential in sports. Here in context to sports physiology, it is equally important to maintain the fitness. This may include the advice on cessation of tobacco smoking and drug abuse, regular exercise, dietary recommendation, etc.

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(b) By Isometric training where static muscle contractions are carried out against immovable resistance i.e pushing against solid wall.

Various exercise instruments are available in Gymnasium for straining of muscle strength. It should be noted that intensity is more important variable for development of muscle strength while duration of exercise is more important for development of stamina and Muscular endurance.

Technique to measure strength are

(1) Grip Dynamometer test, & (2) Crunch test for abdominal strength i.e. ability to carry out the movement of soldiers off the ground (crunch) in lying down position as many times as possible in 20 seconds.

(3) Suppleness : - (Flexibility):

Suppleness is the ability to move the joints freely over the wide range without risking the undue strain and sprain over the muscle, tendons and joints. Extreme degree of suppleness is required for performing various types of sports but reasonable degree of suppleness is an important element of physical fitness and body efficiency. To achieve the high degree of flexibility, stretching of the muscles, tendons, and maintenance of this state for a prolonged period is required. Adequate warming up facilitate stretching. Various methods include gradual

lengthening of muscle and it is held in this state ,rhythmic movements of various joints at extended range and it is held in that state and Ballistic or Dynamic stretching where the bouncing movements are carried out. In short, to achieve flexibility of the muscles, muscles should be stretched beyond its normal length. Flexibility is of two types (a)- Static flexibility measures the range of movement. (b) Dynamic flexibility refer to is of movement of joints in the middle of their range of movement.

Simple test is to Sit and test for static flexibility. This is done with a ruler to be placed between the legs with the measure starting at the soles of the feet and moving away from the body. Subject sits on the floor with feet on either sides of the ruler and press against the fixed front board keeping the knee straight subject bends at the three readings are taken and the best reading is compared with the standard table.

Static flexibility :- (cm)

Age 20-39 40-59

Poor 1.0 6.0

Fair 1.1-6.0 5.9-7

Average 6.1-10.0 1.1-7.0

Good 10.1-13.0 7.1-10.0

Excellent 13.1 + 10.1 +

(4) Speed : - It includes the ability of human body to move and respond quickly. This is essential in majority of the sports but such responses and reactions are equally important for the survival and preventions of bodily injury during unusual circumstances and accidents. This involves the efficiency of not only the muscles but also the brain and spinal reflexes to react to stimuli i.e. earth quake.

As this four 'S' that is Stamina, Strength, Suppleness and speed are the essential elements of physical fitness. (Two additional 'S' i.e. skill and Spirit is also included in physical fitness in context to Sports Medicine). Optimum level of general physical fitness is essential to cope with day-to-day physical demands of our work including skill and spirit.

Large number of physical equipments (Mechanical) are available for evaluation and achievements of various components of physical fitness. These equipments are varied according to their effectiveness, safety, ability to maintain motivation, cost effectiveness and mechanical soundness. This equipments can be classified in general

(a) Passive Exercise Machines :- i.e. vibrating belt, vibrating pads, morning walker, rollers, electrical stimulators and sonar suits. According to American Medical Association, these so called effortless exercisers have a limited value. Most of them do very little to improve the fitness of heart and lungs (stamina) which is the most important need in the era of epidemic of Sedentary life style Syndrome.

(b) Active Exercise Machines :- This includes bicycles, exercise cycle, Tread Mill, Rowing

Machines, skipping rope, weights, etc. They play significant role in development of physical fitness if they are used properly on regular basis.

The good examples of aerobic exercise for Cardio - Vascular fitness / stamina are those exercise which involve 50 % of more of the body muscle i.e. Swimming, skiing, Jogging, brisk walking, Cycling, canoeing...

Assessment of Exercises:-

In general there are two types of exercise (A) Aerobic and

(B) Anaerobic : To assess any of the physical activity, exercise or exerciser machines for physical fitness the important parameters are

(1) Blood - Lactic acid level (Lactate)

(2) Pulse rate

(3) $V_{max} O_2$ i.e. oxygen consumption per minute or MET (One metabolic equivalents).

(1) The rising level of lactic acid in blood suggests that the exercise is becoming anaerobic and cannot be continued for a long time at that speed.

(2) & (3) The Oxygen intake can be indirectly assessed by pulse rate and comparing in standard tables available well prepared for males and females of various age group.

Resting MET = One MET = 3.5 ml O_2 /kg/minute @ in healthy adult 200 ml per minute. To achieve the cardiovascular fitness/stamina, the exercise must be carried out 3-5 times a week (frequency). The intensity of the exercise should be to achieve 60-80% of maximum heart rate. The time duration should be 20-60 per each session. N.B. The maximum heart rate (MHR) can be calculated by karvonen formula i.e. $MHR = 220 - \text{age}$. If the age is 42 then $MHR = 220 - 42 = 178$ Heart Rate reserve (HRR) = maximum heart rate - resting heart rate.

I.e. $178 - 85 = 93$ (Heart rate reserve)

$HRR \times 0.60 = 141$ i.e. (Target Heart Rate) for 60%

$93 \times 0.70 = 150$ (Target Heart Rate) for 70%

Before prescribing and evaluating exercise following factors should be considered. :

(1) Age

(2) Sex

(3) Health Status

(4) Previous physical fitness level

(5) Motivation and

(6) Life Style

(7) Psychological factors.

Typical aerobic exercise should be divided into 3 stages.

(1) Warming up.

(2) Conditioning

(3) Cooling down.

As mentioned previously the exercise can be hazardous or potentially dangerous for a person with Cardio-Respiratory disorders, Senior Citizen, patient suffering from backache, disorder of neck and vertebral column, pregnant woman, etc.

Even in healthy persons continuous regular exercise might be giving extra stresses to muscles and joints. Such subclinical injury may progress to dangerous form of chronic over used Syndrome. If such injuries if considered early it can be prevented and if early diagnosed and treated accordingly.

Certain environmental conditions should also considered i.e. heat, cold, climate, altitude, water, electrolyte balance, etc.

Before prescribing and initiating endurance (to build stamina) type of exercise for achieving stamina and physical fitness, the Sub-maximal aerobic test should be performed by using

Tread - Mill Stress test or

Exercise Bicycle

Ergometer

Rowing machine.

When the person is performing physical activity by such equipments heart rate, Oxygen (VO_2 max.) uptake, plasma Lactic acid etc are measured and physiological level can be assessed by monitoring-

Heart rate response

Blood pressure response

Blood lactate level

VO_2 Max - Measured directly by Benedict-Rosh-Apparatus or indirectly by measuring pulse rate and correctly with standard tables.

Out of these the Heart rate response is simple, easy and reliable tests.

Though the standard Tread Mill Test is the best for the prediction of physical fitness, other simple tests are

(a) Standard Exercise test with steps test. Person is to perform stepping exercise and then count

the pulse rate immediately after the cessation of exercise till the basal pulse rate is achieved. Normally it takes 3 minutes to achieve normal heart rate.

(b) Hopping Exercise : Method is similar to stepping exercise. The observations can be plotted in graphic form where the graph is plotted against pulse rate against time in seconds. In Healthy and fit person , the basal pulse rate is achieved within three minutes.

(c) Haward Step test and physical fitness : The person is step on and off a bench of 46 cms step - 30 times per minute for 5 minutes and count the recovery pulse rate between 1-1.5 minute (P1), 2-2.5 minute (P2) and 3-3.5 minute (P3). Add the 3 recovery pulse rate count (P1+P2+P3) and calculate fitness index by formula.

Fitness Index = Duration of exercise in sec. X 100/2x(P1+P2+P3)

If the fitness index is less than 50, it is of a poor category, 50-80 is of average category and more than 80 is good category.

(d) Queen's College step test : Here, test is developed by prof. William Nocardle. This test is based on heart rate following exercise and not on recovery heart rate. Here the 41 cm step is used and a person is stepping 22 cycle/ minute for 3 minutes. Immediately following 3 minutes of stepping the subject should stop and sit on the step. The pulse rate should be counted and compared with the standard step test scores.

Exercise pulse

Rating Men Women Boy Girls

Very good <110 <116 <120 <124

Good 100-124 110-130 120-130 124-134

OK 125-140 131-146 131-150 135-154

Poor 141-155 147-160 151-160 155-164

Very Poor >155 >160 >160 >165

The word physical fitness is used in many contexts in medical science. It is relevant when a student wants to undergo professional courses like medical and engineering. Physical fitness is also considered before undergoing various sports activity including swimming, mountaineering, etc. It is most frequently used to achieve positive health.

The word physical fitness is most relevant before entry in particular job and employment. In this context, physical fitness of a person affect the safely of work place and working people at job placement and the clients. It is very highly specifically relevant to certain complicated job i.e.

- Driver of Car, Bus, Railway

- Aviation - Aeroplane, Helicopter, etc. Pilots

- Seafarer and Divers

- Off shore workers
- Placement in high attitude and mountaineering.

In such situation, the physical fitness of the employee influences the risk of large number of the community.

In such situation, primary medical assessment is carried out to know that a person is fit to carry at the task without the risk of his own or others. If the primary assessment result warrant, the further secondary assessment is to be carried out. Certain area to consider here are :

- Person condition may limit reduce or prevent him from performing the job perfectly.
- The subject's medical condition might be made worse by the job i.e. Excessive physical exertion may deteriorate the cardio respiratory condition i.e. Bronchial Asthma.

In individual situation, disorder of eye, ears, medical conditions like epilepsy, episodes of unconsciousness, chronic infections are also to be considered in job placement. In this context, assessing a person's fitness, one must consider the following factors.

- Level of skill physical and mental capacity, sensory acting, etc. needed for effective performance of the work.
- Any possible adverse effect of the work itself for the work environment, on person's health.
- Possible health and safety implications of patient's medical condition when undertaking the work in question, for himself, fellow workers, and or the community.

For certain jobs including medical profession, there may be emergency component in addition to the routine job structure and higher standards of fitness is necessary on such emergency accession

BLOOD CULTURE IN NEONATAL SEPTICEMIA

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MICROBIOLOGY

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Neonatal septicemia is the major cause of mortality and morbidity in nicu. It is a challenge to paediatrician to treat this septicemia and also to microbiologist for identification of the microorganism.

The present study was undertaken to know the microorganism that causes neonatal septicemia and their antimicrobial susceptibility pattern.

Materials and methods

A total number of 900 blood samples were collected from nicu in jan. 2001 to may 2002 from v.s. General hospital, ahmedabad.

The babies having septicemia showed any of the following symptoms : Intrauterine growth retardation, premature rupture of membranae, low birth weight and fever.

2ml of blood were collected in glucose broth under aseptic precaution and subcultured after 48 hours of incubation on nutrient agar, macconkey agar, and blood agar. Any growth was identified by colonial characteristics and standard biochemical test. Antimicrobial test was performed by kirbybauer disk diffusion method on mueller hinton agar as per nccls recommendation.

Results :

Out of 900 case studies growth was obtained in 443 (49.22%) blood samples.

In 443 blood samples 361 (81.5%) samples showed growth of bacteria, while 82 (18.5%) cases showed growth of fungus candida.

TABLE : 1 ISOLATION OF MICROORGANISM

ORGANISM	NO.	OF GROWTH %
STAPHYLOCOCCUS	212	47.85
K. PNEUMONIAE	100	22.57
CANDIDA	82	18.51
E. COLI	27	6.09
PS. AERUGINOSA	22	4.90

Among gram negative bacilli 149 (33.63%) cases, klebsiella (22.57%) is the commonest organism to be isolated followed by e. Coli (6.09%) and pseudomonas (4.96%)

SENSITIVITY PATTERN OF GRAM POSITIVE ORGANISM :

ANTIBIOTICS	COAGULASE	COAGULASE
NEGATIVE	POSITIVE	
STAPHYLICOCCLUS	STAPHYLICOCCLUS	
AMPICILLIN/SULBACTUM	86.33%	89.0%
CO TRIMOXAZOLE	15.8%	15.2%
CEPHELEXIN	56.8%	45.2%
TETRACYCLINE	56.1%	64.3%
CEFOTAXIME	58.27%	53.4%
CIPROFLOXACIN	72.6%	76.7%

PEFLOXACIN 58.2% 47.9%

OFLOXACIN 51.8% 39.7%

ROXITHROMYCIN 51.1% 45.2%

LINCOMYCIN 75.5% 65.7%

GENTAMICIN 75.5% 71.2%

Among gram positive organism staphylococcus species isolated from 212 (47.85%) cases, in which cons (31.3%) was the commonest organism and coagulase positive staphylococcus (16.47%) was next organism to be isolated.

SENSITIVITY PATTERN OF GRAM NEGATIVE BACILLI :

ANTIBIOTICS K. E. P.

pneumoniae coli aeruginosa

AMPICILLIN/

SULBACTAM 70% 48.14% 40.9% CO TRIMOXAZOLE 17% 11.11% 45.45% CEFOTAXIME
20% 14.81% 40.9% TETRACYCLINE 13% 22.22% 59% PIPERACILLIN 06% 11.11% 63.6%
CHORAMPHENICOL 23% 44.44% 45.4% CIPROFLOXACIN 68% 26.62% 81.8%
CEFTIZOXIME 04% 14.81% 27.2% OFLOXACIN 75% 37% 86.3% GENTAMICIN 15%
26.62% 68.2 AMIKACIN 24% 66.66% 77.2% PEFLOXACIN 79% 33.33% 81.8%

All the staphylococci were susceptible to ampicillin/sulbactam, ciprofloxacin and gentamicin ranging from 90% to 72%.

The commonest gram negative bacilli, klebsiella showed maximum susceptibility to pefloxacin (79%), ofloxacin (75%), and ampicillin/sulbactam (70%)

E.coli was susceptible to amikacin (66%) and pseudomonas showed susceptibility to ofloxacin (86.36%), pefloxacin & ciprofloxacin (81%) and amikacin (77%).

Discussion :

In our study we found multidrug resistant organisms. The commonest organism was staphylococcus followed by klebsiella and fungus-candida. So if patient with septicemia doesn't respond to antibiotic therapy within 24 hours then paediatrician must think about the fungal septicemia.

The high frequency of resistance to antibiotics can be due to inappropriate use of first line drugs. This can be avoided by using drugs to which the organisms are susceptible.

Conclusion :

In our study we found the commonest organism in descending order of frequency :

Staphylococcus sp. (47.85%)

Klebsiella sp. (22.57%)

Candida sp. (18.51%)

E.coli (6.09%)

Pseudomonas aeruginosa (4.96%)

Most of the organism were multidrug resistance. So, whenever paediatrician suspect septicemia, they must sent blood culture before starting the antibiotics and follow the sensitivity pattern.

Fertility Profile of Women in the

Reproductive age group :

A Community based study in one our field practice areas

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Introduction:

Fertility is one of the most important components of population composition and a thorough understanding of its determinants is essential for its control. Several sociocultural factors contribute to high fertility in our community. This present study would reveal some of these in the present context.

Aims and Objectives:

1. To study the fertility profile of women
2. To study the Maternal Health Care seeking behaviour of this population
3. To study Contraceptive Practices in these women and factors determining them

Materials and Methods:

. Study Area : Gandhigram area - one of the areas of Ahmedabad Municipal Corporation

. Type of study : Cross sectional survey of all women by personal interview in the selected study area who delivered during one year for evaluation of Quality of Antenatal Care received by them and to study their Fertility Profile.

. Study Period : Survey of women who delivered live born babies during one year from 1 st November 2002 to 31 st October 2003 (one year) from November 2003 to January 2004.

. Sampling Method : One unit out of field practice areas of our teaching hospital in Ahmedabad Municipal Corporation area was selected by Simple Random Sampling method.

. Sample size : 1630 eligible couples for contraceptive prevalence in a total population of 8150, out of whom 212 women delivered during one year.

Questionnaire :

A pre-designed and pretested questionnaire was used for personal interview of women for the study of antenatal care seeking behaviour of these women.

Results and Discussion:

Table 1: Fertility Profile of Currently Married Women in Reproductive Age group in the study area :

Total Population in Outreach area 8150 Total Married Women in 15-49 years age group 1630
Total Births in this population in one Year 212 Male babies 114 Female babies 98 Sex Ratio at birth females per 1000 males 860 Crude Birth Rate per 1000 per year 26.01 General Marital Fertility

Rate per 1000 women per yr 130.06 Total Fertility Rate 3.61 Gross Reproduction rate 1.68
Current Prevalence of Contraception: (n=1630) Overall Prevalence of Contraception 1288 (79.02%) Condom 632 (38.77%) Intra Uterine Device 224 (13.74%) Oral Pills 332 (20.37%)
Tubectomy/Vasectomy 100 (06.13%) No Method 342(20.98%) Antenatal Care seeking behaviour (n=201) Complete Antenatal Care taken 65 (32.3%) No Antenatal Visits 92 (45.77%) One visit 60 (29.85%) Two visits 38 (18.90%) Three visits 6 (2.99%) > Three visits 5 (2.49%) Inj. Tetanus Toxoid taken 2 doses or

one booster 178 (89%) Tablets Iron Folic acid (min.100 tabs) taken 149 (74%) Blood Pressure measured 90 (45%) Urine Examination done 70 (35%) Haemoglobin estimation done 91 (45%)

There were 1630 currently married women in the reproductive age group (15-49 years) in this sample population in the study area. During one-year period (from 1 st November 2002 to 31 st October 2003), 212 women delivered of whom 201 women could be interviewed in person. Only 65 (32.3%) women in this population received complete antenatal care. During the prenatal period, 178 (89%) of these women received immunization against Tetanus and 149 (74%) women had taken Iron Folic acid tablets (minimum 100 tablets). While urine examination was done in 35% of the women, Hemoglobin estimation and Blood Pressure measurements were done in 45% each of the subjects.

The General Fertility rate (GFR) in the studied urban population was 130.06 per 1000 women, Crude birth rate (CBR) was 26 per 1000 per year and Total Fertility Rate (TFR) was 3.61. The Gross Reproduction Rate (GRR) was 1.68. All the indicators of fertility in the study area were observed to be higher than the National Health Policy Goals indicating the need for strengthening of quality of care. Bhavna reported in a similar study in slums of Ahmedabad city in 2003, General Fertility rate of 111.7 per 1000 women, CBR of 32.86 per 1000 per year, and TFR of 3.4 and GRR of 1.66.

Interestingly, in spite of high TFR in the study area, Contraceptive Prevalence Rates (CPR) was high (overall 79%) as compared to 53.6% Bhavna's study. It was heartening to observe that the temporary methods of contraception were more prevalent than terminal methods but when viewed in context of total fertility, contraception was adopted only after achieving the desired family size. On the other hand, it was noted that despite the availability of services to them at their door step in the outreach activities of the teaching hospital and proximity to the same, less than one third of these women only received complete antenatal care and still 10% women delivered at home.

Conclusions :

The sex ratio at birth in the study population was 860 females per 1000 males which is less than 886 per 1000 in Ahmedabad Municipal Corporation area. This gender bias clearly widespread is a matter of concern. This study indicates the need to lay more emphasis on the adoption of contraception for spacing between pregnancies rather than adopting a method after completing the desired family size (particularly desired male children). In spite of overall good awareness in these urban women, there is also a need to tap on their fertility behaviour, which is related to preference for the male child. This demonstrates that awareness and prosperity do not automatically translate into gender equity.

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ADIOLOGICAL STUDY OF EPIPHYSEAL FUSION PROCESS AT ELBOW IN 12 - 17 YEARS AGE GROUP IN PEOPLE OF GUJARAT STATE .

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Abstract :

Assessment of age by radiological study of fusion in the bones of elbow was conducted in 200 subjects from Ahmedabad, native of Gujarat since birth. An extensive work has been carried out to determine the age from appearance and fusion of ossification centers or epiphyseal union of different bones and development of teeth. Union of different ossification centers occurs at different age group in different areas of country and world. So it was necessary to know the age group when union occurs of epiphysis of various bones in state of Gujarat.

Material And Method

The present study was conducted on 200 students from schools of Ahmedabad city. Subjects selected were from either sex and from age group 12 to 17 years. Date of birth was confirmed from birth certificates and selected subjects were native of Gujarat since birth and from the family settled in Gujarat for last three generations. As control sample few subjects were selected below 12 years and above 17 years.

76 boys and 124 girls were x-rayed for the present study. X-rays of elbow joints were taken of subjects. Anteroposterior and lateral views were taken of right elbow.

Union of epiphysis was graded as follow.

Stage I - non union

Stage II - $\frac{1}{4}$ union

Stage III - $\frac{1}{2}$ union

Stage IV - $\frac{3}{4}$ union

Stage V - complete union [epiphyseal scar was considered as fusion]

Results :

Table no 1 shows age of complete union of different bones at elbow joint in both sex in present study. It is found that fusion is earlier by 1 year in female than in male.

Conclusion :

1. Among various bones of elbow joint union occurs at different age group and sequence of fusion is as follow.

1 st Trochlea to Capitulum and lateral epicondyle to Capitulum.

2 nd Olecranon to shaft of Ulna. head to shaft of Radius.

3 rd Medial epicondyle to shaft of Humerus.

2. It is observed the union occurs 1 year earlier in female sex than in male

sex.

3. Fusion of Olecranon to Ulna takes place from proximal to distal part.
4. Union of conjoint epiphysis to shaft of Humerus takes place from medial to lateral aspects.
5. Union of head of Radius to shaft takes place from lateral to medial.
- 6: No significant relation is found between progress or fusion of epiphysis with either weight or height of case under study.

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EXPERIENCE OF DENGUE FEVER IN ADMITTED PEDIATRIC PATIENT

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INTRODUCTION :

Dengue fever is an acute viral illness cause by dengue virus (Den-1,2,3 & 4). In the past 15 years we have witnessed the dramatic increase in the global incidence of the Dengue & its severe manifestation such as Dengue Haemorrhagic fever (DHF) and Dengue shock syndrome (DSS). More than 2.5 billion people are at risk infection over 200 hundred countries worldwide. There are probably tens of million of cases of Dengue each year and atleast 500 thousand cases of DHF with mortality of about 5% in most country. The vast majority of cases nearly 95% are among children of less than 15 year of age.

MANIFESTATION OF DENGUE FEVER :

All four Dengue virkus (DEN-1,2,3 & 4) infection may be asymptomatic or may lead to undifferentiated fever, Dengue fever (DF), Dengue Haemorrhagic Fever (DHF), and Dengue Shock syndrome (DSS).

* DENGUE FEVER - (DF)

Dengue fever (DF) is an acute febrile illness of 2 to 7 days duration with two and more of the following manifestation.

. Headache

. Retro-orbital pain

- . Myalgia, Arthralgia
- . Rash
- . Haemorrhagic manifestation (Petechia & positive tourniquet-test)
- . Leukopenia

DENGUE HAEMORRHAGIC FEVER - (DHF) :

. Dengue Haemorrhagic fever (DHF) is a probable case of Dengue & Haemorrhagic tendency evidenced by one or more of the following.

- . Positive Tourniquet-test
- . Petechia, Echymosis or purpura
- . Bleeding from mucosa, injection sites etc.
- . Haemetemesis of malena
- . Thombocytopenia (Platelet count < 1 Lacs per cmm or less)
- . Evidence of the Plasma leakage due to increase capillary permeability manifested by one or more of following :-
- . A > 20% rise in hematocrit for age and sex
- . A > 20% drop in hematocrit following treatment with fluids.
- . Sign of Plasma leakage (Pleural effusion, ascites, Hyprotinemia)

DENGUE SHOCK SYNDROME (DSS) :

All the above criteria of DHF plus sign of circulatory failure manifested by rapid and weak pulse pressure (< 20 mm Hg.), Hypo tension for age, cold and clammy skin and restlessness.

DISEASE COURSE :

DF / DHF has an unpredictable course. Most patient have febrile phase lasting for 2 to 7 days, this followed by critically phase of 2 to 3 days, during this phase patient is a febrile and at risk of developing DHF / DSS which may prove fatal.

GRADING THE SEVERITY OF INFECTION :

DF/DHF GRADE SYMPTOMS LABORATORY

DF - Fever with two or Leukopenia,

more of following occasionally

Sign Thrombocytopenia

Headache, present, No

Myalgia,

Arthralgia, Retro evidence of

Orbital pain plasma leak

DHF I Above Sign plus Thrombocytopenia

positive tourniquet Hct rise > 20%

Test

DHF II Above sign plus Thrombocytopenia

Spontaneous bleeding

Hct rise > 20%

DHF III Above sign plus Thrombocytopenia

circulatory failure Hct rise > 20%

DHF IV Profound shock Thrombocytopenia

with undetectable Hct rise > 20%

Blood pressure

and pulse

DHF Grade III & IV also called Dengue Shock Syndrome (DSS)

Epidemics of Dengue occurs periodically. In India first recorded out break of Dengue fever was in 1812. Previous epidemic of DF was in 2001. The last epidemic was in September 2003 to November 2003.

We had admitted 11 cases of Dengue fever during this period (29-9-2003 to 7-11-2003).

Data analysis was done and following facts were noted. (N=11)

. According to age group distribution more incidences seen in 1 to 6 years age group. Out of 11 patients 6 (54.5%) patient were from this age group, 3 (27.3%) patient from 6 to 12 years age group and 2 (19%) from 1 month to 12 month age group.

. Out of 11 cases 9 (81.8%) patient are male and 2 (19%) female. So male predominant are there.

. All patient (100%) presented with high-grade fever.

. Petechia or maculopapular rashes were present in 9 (81.8%) cases, the distribution of the rashes were most commonly on hand, palm and sole.

- . 3 (27.3%) patient presented with active bleeding from nose, mouth etc.
- . Hypotension were present in 3(27.3%) cases, out of them 2 patient (19.2%) had unrecordable blood pressure and 1 patient (9%) had systolic blood pressure < 60 mm of Hg.
- . Sign of capillary leak with both pleural effusion and ascites were seen in 5 (45.5%) cases, 2 patient (19%) were present with only pleural effusion and other sign and symptoms of DF.
- . According to severity they were grades as follows.

1 (9%) patient of DF

6 (54.5%) patient DHF - I

1 (9%) patient of DHF - II

1 (9%) patient of DHF - III

2 (19%) patient of DHF - IV

Most patient presented with DHF - I

- . Thrombocytopenia (Platelet count < 1 lac/ cmm) was seen in 9(81.8%) patient,
- 2 patient (19%) had no Thrombocytopenia (plt>2 lac / cmm)
- . Altered LFT with increase SGPT & increase Alk. Phosphatase were seen in 5 patient (45.5%)
- . Anti body titres to Dengue virus noted as follow :
- . Dengue IgM + Ve in 9 (81.8%) cases
- . Dengue IgG + Ve in 6 (54.5%) cases
- . Both IgM IgG + Ve in 6 (54.5%) cases

TREATMENT GIVEN :

Out of 11 patients , Intra Venous fluid in the form of Ringer's lactate (RL), normal saline (NS) and isolyte-P given to 6 (54.5%) patients, from that 3 patients (27.3%) were given IV fluid according to standard protocol of Shock. Inj. Platelet Rich Plasma (PRC) given to 6 (54.5%) patients. Inj. Fresh Frozen Plasma (FFP) given to 3 (27.3%) patients. Inj. Fresh Whole Blood Transfusion given to 3 (27.3%) patients.

OUTCOME :

All 11 patient were discharged, no any mortality noted.

CONCLUSION :

Most of patient of Dengue fever presented with fever, petechia and rashes over both upper Limb and lower limb. Some presented with active bleeding. Majority of patient had no sign of shock. 3 (27.3%) patient presented with shock. No mortality noted. It suggest that if diagnosed and treated

early outcome is very good.

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ANTHROPOMETRIC MEASUREMENT OF FIRST M.B.B.S. STUDENTS

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INTRODUCTION :

Anthropometry has been widely and successfully applied to the assessment of Health and nutritional risk. Adolescence is a significant period of human growth and maturation: unique changes occur during this period and many adult patterns are established. The proximity of adolescent to biological maturity and adulthood may provide final opportunities to implement certain activities designated to prevent adult health problems. It is always difficult to standardize the results, as Indian standards are not available. National Centre for Health Statistics (NCHS), U.S.A. standards are not advisable to use as it observed in various studies that there is increasing divergence between the NCHS growth pattern and the growth pattern of Indian adolescents in late adolescence.

Aim: To study various anthropometric indices for First M.B.B.S. students

Methodology : Total 148 Students were admitted in First M.B.B.S. during the year 2003. One hundred and sixteen boys and thirty-two girls were enrolled in the study. After three attempts, 140 students took part in the exercise. Weight was taken with the help of beam type of weighing scale (Precision of 100 grams). Height was also taken with the help of same machine. Mid Arm Circumference (MAC), Waist and Hip circumference were measured with the help of measure taps with precision of 0.1c.m.

Observation and Results :

The sex distribution of study group is shown in Table-1.

Table-I Sex wise distribution of study group

Sex No Percent (%)

Male 108 77.1

Female 032 22.9

Total 140 100

The Mean age of the study group was 17.4 years and it was 17.4 for boys and 17.3 years for girls. Means of all anthropometric measurements taken are shown in Table-II.

Table-II Sex wise distribution of mean of various anthropometric measurements

Sex	Mean Weight	Mean Height	Mean BMI	Mean Mid Waist	Mean Hip	Mean Waist/Upper Circum.	Mean Hip/Upper Circum.	Mean Arm Ratio	Mean Circum.
Male	59.18	169.21	20.39	26.31	73.84	93.64	0.79	51.74	164.65
Female	51.74	164.65	19.06	24.87	66.28	91.55	0.75	57.5	168.2
Total	57.5	168.2	20.09	25.99	77.11	93.18	0.78		

Height for age :

Stunting or low height for age has been defined in NCHS standard as less than third percentile, which means less than 164 cms in boys and less than 148 cms in girls. No girl in the study group has height less than 148 cms, while 28 (26%) boys were having height less than 164 cms.

BMI:

Table III- Distribution of study group according to BMI

BMI Class Male Female Total

<16 *CED-III	08	04	12
16-16.99 CED-II	11	03	14
17 - 18.49 CED-I	19	07	26
Under-nutrition	38 (35.19)	14 (43.75)	52 (37.14)
18.5 - 24.99 Normal	52 (48.15)	18 (56.25)	70 (50)
25 - 29.99 Overweight	17	00	17
30 - 39.99 Obesity	01	00	01
> 40 Obesity	00	00	00
Overweight	18 (16.66)	0	18 (12.86)

CED= Chronic Energy Deficiency

Table-III shows that 35.19% boys and 43.75% of girls are undernourished, while 16.66% boys are suffering from overweight. No girl was suffering from overweight or obesity.

Waist-Hip Ratio (WHR) :

Waist-to-hip ratio (WHR) is the ratio of a person's waist circumference to hip circumference, mathematically calculated as the waist circumference divided by the hip circumference. For most

people, carrying extra weight around their middle increases health risks more than carrying extra weight around their hips or thighs. For both men and women, a waist-to-hip ratio of 1.0 or higher is considered "at risk" or in the danger zone for undesirable health consequences, such as heart disease and other ailments connected with being overweight. For men, a ratio of .90 or less is considered safe. For women, a ratio of .80 or less is considered safe.

In the study group five girls were having $WHR > 0.85$, but their BMI was observed to be normal, one male with Obesity having $WHR > 1$.

Waist Circumference :

Waist circumference is a common measure used to assess abdominal fat content. The presence of excess body fat in the abdomen, when out of proportion to total body fat, is considered an independent predictor of risk factors and ailments associated with obesity.

All students were having waist circumference within normal limits. (M>102,F>88)

MAC :

The normal value of MAC of the study group age is more than 21 cms. No one was having MAC less than 21 cms.

Conclusion :

35% boys and 44% girls are suffering from undernutrition. 17% boys are suffering from overnutrition. Five girls were having WHR more than 0.85. 26% boys were having low height for age as per NCHS standard.

Recommendation :

It is highly recommended to continue the study for the same batch in future and also for forthcoming batches. Interventions are required for the under and over-nourished boys and girls.

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ORAL PHYSIOLOGY TO PATHOLOGY- LEARNING LESSON FROM TOBACCO RELATED ORAL LESIONS

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INTRODUCTION :

Aims of the article and study : The main aim of the article and the study is to help the readers the medical and dental Health professionals to develop an awareness of achievement of oral health especially in context with tobacco use. Applying knowledge from these subjects will help the reader to develop a clearer understanding of the opportunities and barriers that arise in achieving the current status of oral lesions. Behavioural science and pathology offer much to help members of the dental and medical persons to develop their awareness and insight motivate to work both in the practice and, if they choose, in the wider community.

What is oral health ?

Oral health is a standard of health of the oral and related tissues which enable an individual to eat, speak or socialize without active disease, discomfort or embarrassment and which contributes to general well-being.

Health promotion and health education : The recognition of the importance of the environment and structural issues to health has led to the development of health promotion programmes. Health promotion has been defined as the process of seeking to improve or protect health through a range of activity, including behavioural, socioeconomic and environmental policy change (World Health Organization, 1984). More specifically, the range of health community.

Smokeless tobacco use has increased Globally . This form of tobacco

use has many oral effects including leukoplakia, oral cancer, loss of periodontal

support (recession), and staining of teeth and composite restorations. Systemic

effects such as nicotine dependence, transient hypertension and cardiovascular

disease may also result from smokeless tobacco use. Oral cavity malignancies account for 4% of all malignant tumors in men and 2% in women. Squamous cell carcinoma (scc) of varying grades of differentiation & some unusual variants make up more than 90% of the intraoral malignancies. In 1998 , American cancer society observed approximately 30,300 new annual cases of oral cavity & oropharynx cancers is responsible for about 8,000 deaths. Increase Cancer rate & morbidity is due to life-style habits, poverty, lack of education & less access to care. Oral squamous cell carcinoma is more common in 5 th to 8 th decades

Estimated 50% of scc (squamous cell carcinoma) attributable to excessive consumption of tobacco & alcohol. Most common tobacco use is in form of cigarette, cigar or pipe smoking. Other forms of tobacco use is in the form of snuff dipping, tobacco chewing, betel nut leaf.

Material and method :

Total 463 subjects who attended various out door patients departments either having history of Tobacco chewing or tobacco smoking for more than five years of duration (0.688% N=284) or subjects who were non tobacco consumers (0.088% N=179) were examined clinically by show me your mouth. The oral cavity was examined FOR RED OR WHITE LESIONS /EITHER

ELEVATED OR DEPRESSED ONE were subjected to surgical biopsy.. Biopsy : Biopsy is the removal and examination of a part or the whole of a lesion. There are several types of biopsy technique i.e. Surgical biopsy (incisional or excisional) , Fixed specimen for paraffin blocks, Frozen sections, Fine needle aspiration biopsy, Thick needle/core biopsy. The only important contraindication is incisional biopsy of parotid gland tumors. . Such lesions were examined microscopically only after excision with a margin of surrounding normal tissue. Surgical biopsy : Incisional biopsy (removal of part of a lesion) is used to determine the diagnosis before treatment. Excisional biopsy (removal of the whole lesion such as a mucocele) is used to confirm a clinical diagnosis. It is a simple procedure but certain precautions must be observed i.e. Essential biopsy principles are· Choose most suspicious area· Avoid ulcers sloughs or necrotic areas· Give regional or local anaesthetic - not into the lesion· Include normal tissue margin· Specimen edges should be vertical not beveled· Pass a suture through the specimen to control it and prevent it being swallowed or aspirated by the suction· For large lesions, several areas may need to be sampled· Label specimen bottle with patient's name and clinical details· Suture and control any bleeding· Warn patient of possible soreness afterwards. Give an analgesic· Check the report is consistent with the clinical diagnosis and investigations· Repeat biopsy if diagnosis is unclear or not understood All the biopsy procedures were carried out under local anaesthesia without any complications. Frozen sections : Frozen section technique allows a stained slide to be examined within 10 minutes of taking the specimen but has some limitations . The tissue is sent fresh to the laboratory to be quickly frozen, preferably to about - 70 0 C by, for example, immersion

in liquid nitrogen or dry ice. A section is then cut on a refrigerated microtome and stained. The theatre suite often includes equipment for frozen sections to speed the process even further. Frozen sections can only be

justified if the rapidity of the result will make an immediate difference to the operation in progress. If a rapid diagnosis is required in other circumstances, alternative techniques such as fine needle aspiration biopsy may be used.

table - 1

Tobacco users M Non users N

A Begin lesion

M N Total

1. laryngeal papilloma 11 31 42

2. Epiderm al cyst

Saccular laryngeal cyst 1

Dentigerous cyst 1 2

3. epiglottic cyst 01 04 5

4. Mucous retention cyst 01 17 18

14 53 67

B Inflammatory lesion

- 1 Active chronic tonsillitis 00 11 11
- 2 Active chronic inflammatory 01 03 4
3. Acute inflam.. pharyngeal wall 03 11 14
4. Sub Murtic fibrosis 30 18 48
5. Acute inflam Hard palate 01 01 02
6. Granuloma pyogenicum 01 13 14

36 57 93

C Premalignant lesion

1. Varrucous hyperplasia dysplasia 13 11 24
2. Leukoplakia 23 9 32

36 20 56

D Malignant lesions

1. Squamous cell carcinoma 39 08 47

Base of tongue

Lateral margin of tongue

Dorsum of tongue

- Cheek mucosa 33 07 40

- Larynx 36 10 46

- Tonsillar growth 09 2 11

- Pyriform fossa 09 5 14

- Palate 05 5 10

- Pharynx 17 5 22

- Alveolar margin 03 01 04

- 2) Mucoepidermoid tumor low grade 01 01 02

- 3) Adenoid cystic carcinoma maxillary

mass with upper teeth 11 02 13

4) Adenomatoid odontogenic tumor 11 01 12

5) Squamous cell carcinoma in situ 14 02 16

188 49 237

All the tissue were stained with H.E. stain and examined under light microscope for further tissue diagnosis..

Observations:

Total 463 number of subjects undergo biopsy . All were age range 34 to 71 mean age 53.78(S.D. 11.36). Following lesions were observed and summarized in the table (**table - 1**)

table - 2

Tobacco users Non tobacco

Total user

Non malignant

lesion 96 (33,8%) 130 (72.6%) 226

Malignant

lesion 188 (66.2%) 49 (27.4%) 237

Total 284 179 463

$P < 0.005$

M suspected lesions 0.688% of population survived

N suspected lesions 0.088% of population survived

Discussion :

The study documented the fact that prevalence of malignant lesions were significantly high amongst tobacco users compared to non tobacco users. This raise a new health issue that due to wide spread of knowledge of hazards of tobacco smoking , people turn towards oral tobacco use which is not without hazards. One study on 41 Dumagat samples done with oral tobacco use found lesions of some type in 61 % of case (37.8% females and 62.5% males). Lesions clinically detected etc; betel nut chewer's mucosa (44%), leukoderma (6%), melanin pigmentation (8%), geographic tongue (16%), Fordyce's spots (8%), leukoplakia (6%) and Fibroepithelial papilloma (8%).

series of over 4000 oral mucosal biopsy cases was examined in two age groups, elderly (greater than or equal to 65 years) and non-elderly, age-corrected prevalence was higher in elderly than non-elderly with the greatest difference occurring in malignant/premalignant diseases (5.5-fold

higher prevalence in the elderly). The results suggested that in the Mersey Regional population the prevalence of oral mucosal disease, of a type and severity to warrant surgical removal of tissue, was 47% higher in the elderly than the non-elderly. These results strongly support the notion that age exerts an important influence on the prevalence and pattern of oral mucosal disease in man.

Statistical study of 1289 biopsies of children 0-15 years old, received at the Pathology Department, Dental Faculty, Buenos Aires University is presented. Oral mucosal lesions were found in nearly half of all immunocompromised patients (49.6%), but in only 26% of control patients. No significant associations were found between different types of oral lesions and the underlying cause of immunosuppression. Inflammatory lesions and neoplasms in children, account for 15.7% and 10.2% of the lesions respectively. Eighty four percent of the neoplasms were benign and 16% were malignant. There still is a considerable need for improvement of knowledge and for provision with effective antitobacco teaching material. Since most of the respondents thought that the dentist should play a role in anti-tobacco counselling, adequate programmes in Germany should be initiated and followed up.

In this context, some tobacco related oral lesions are discussed. The first one the most common is the submucous fibrosis the condition typically affects those from the Indian subcontinent and many areas of Southeast Asia, such as Taiwan. It produces changes similar to those of systemic sclerosis but limited to the oral tissues and without immunological abnormalities. The aetiology is multifactorial but betel (pan) chewing is strongly suspected. Pan typically consists of areca nut, tobacco and lime wrapped in betel leaf. Experimentally, arecoline, a derivative of areca, can induce fibroblast proliferation and collagen synthesis. There is a significant association between areca nut consumption and submucous fibrosis. Clinically, symmetrical fibrosis of such sites as the buccal mucosa, soft palate or inner aspects of the lips is characteristic. The overlying mucosa may be normal or there may be a vesiculating stomatitis. Fibrosis causes extreme pallor of the affected area which becomes so hard that it cannot be indented with the finger. Ultimately, opening the mouth may become so limited that eating and dental treatment become increasingly difficult and tube-feeding may become necessary. Alternatively, malignant change can develop. Microscopically the subepithelial connective tissue becomes thickened, hyaline and avascular, and there may be mild chronic inflammation. The epithelium usually becomes thinned and may show atypia. Underlying muscle fibres undergo progressive atrophy. Typical appearance in a relatively advanced case with pale fibrotic bands of scarring running across the soft palate and down the anterior pillar of the fauces. Similar fibrous bands were present in the buccal mucosa bilaterally. In patients from endemic areas such as India with these lesions, and especially with the characteristic histological changes on biopsy, the diagnosis should be clear. Treatment is unsatisfactory. Patients must stop betel chewing. Intralesional injections of corticosteroids and muscle stretching exercises to prevent further limitation of opening may help a little. Plastic surgery is sometimes carried out, but is likely to be followed by relapse. Regular follow-up is important because of the malignant potential of this disease

.Other premalignant lesions are :

Premalignant lesions :

Dysplastic leukoplakia

Erythroplasia

Speckled leukoplakia

Oral submucous fibrosis

Pipe smoker's keratoses

Chronic candidiasis

Lichen planus

Pipe smokers keratosis and Palatal keratosis due to pipe smoking is benign. Any carcinomas related to pipe smoking appear in another site in the mouth and may not be preceded by keratosis. Sublingual keratosis. This white patch involving the entire ventral tongue and floor of mouth has a uniformly wrinkled appearance. No red areas are associated but the site alone indicates a high risk of malignant transformation.. There may be more irregular white patch and is associated with some reddening in the floor of the mouth Hyperkeratotic mucosal lesions can result from smoking or use of smokeless tobacco ('topical tobacco' - snuff dipping and tobacco chewing). By contrast, there is no characteristic hyperkeratotic lesion associated with far more common habit of cigarette. Tobacco chewing and snuff dipping (holding flavored tobacco powder in an oral sulcus) are popular habits in the USA and some parts of Europe. Loose oral snuff appears to cause more severe changes than tobacco chewing but not all topical tobacco habits are associated with a risk of malignant change. The use of Scandinavian-type snuff sachets appears to carry no risk and it is important to ascertain exactly what type of tobacco is used and how it is prepared. Many smokeless tobacco users also smoke and, regardless of this, all lesions in the mouths of tobacco users should be regarded with suspicion. The habit of snuff dipping or tobacco chewing may be maintained for decades and gives rise to keratoses in the buccal or labial sulcus, where the tobacco is held. Early changes are erythema and mild, whitish thickening. Long-term use gives rise to extensive white thickening and wrinkling of the buccal mucosa. Malignant change can follow, but only after several decades of use. A high proportion of carcinomas in snuff users are verrucous in type but if they remain untreated invasive squamous carcinoma may develop. The main changes are thickening of the epithelium with plump or squared-off rete ridges. There are varying degree of hyperkeratosis or parakeratosis and there may be subepithelial fibrosis in the area where the tobacco is held. Dysplasia may eventually be seen. Diagnosis is based on the history of snuff use and the white lesion in the area where the tobacco is held. Biopsy is required to exclude dysplasia or early malignant change. Snuff-dippers' lesions will resolve on stopping the habit, even after 25 years of use. This therefore is the main measure. If this fails, regular follow-up and biopsies are required.

Several premalignant lesions are recognized . In general, the risk of malignant transformation in the more common white lesions is very low.

The key features of oral cancers are

= Account for approximately 2% of all cancers in the UK but one of the most common cancers in the Indian subcontinent.

= Males more frequently affected

- = Most patients are over 40 and incidence rises rapidly with age
- = Lower lip is the most common site and related to actinic damage
- = Tongue, posterolaterally, is the most common site within the mouth
- = Some arise in preexisting white or red lesions
- = Heavy tobacco smoking and alcohol consumption tend to be associated
- = In India and Southeast Asia, betel or areca nut chewing may be more important clinicopathological features and behaviour
- = Early cancers appear as white or red patches or shallow ulcers and are painless
- = Later carcinomas appear as ulcers with prominent rolled edges and induration and become painful
- = Over 70% of oral cancers form on the lateral borders of the tongue and adjacent alveolar ridge and floor of mouth
- = Over 95% are well- or moderately well-differentiated squamous cell carcinomas
- = Spread is by direct invasion of surrounding tissue and by lymphatic metastasis
- = The submandibular and jugulodigastric nodes are most frequently involved
- = The prognosis deteriorates sharply with local spread and nodal involvement Some factors adversely affecting survival from oral cancer
- = Delay in treatment
- = Advanced age
- = Male gender
- = Tumour size
- = Posterior location
- = Lack of histological differentiation
- = Lymph node spread
- Role of the all the health professionals in cancer prevention and diagnosis
- = Actively discourage smoking and betel quid use
- = Encourage moderation of alcohol intake
- = Health promotion and education on oral carcinoma
- = Provide checkups for the edentulous and/or institutionalized elderly and other high-risk non-attenders
- Early diagnosis

- = Be vigilant and suspicious
- = Always examine mucosa as well as the teeth
- = Monitor low-risk premalignant lesions
- = Refer all high-risk lesions on discovery
- = Perform biopsy appropriately After treatment
- = Manage simple denture problems after surgery
- = Alleviate the effects of postirradiation dry mouth, e.g. preventing caries
- = Monitor for recurrence, new premalignant lesions and second primary tumours
- = Monitor for cervical metastasis
- = Maintain morale of and provide additional support to patients and their relatives

Oral cancer screening : Screening is the process of applying a rapid test to, or examining a population to identify a group at risk from a disease. This group can then be referred for accurate and earlier diagnosis. An example is the national cervical carcinoma screening scheme using the cervical smear test. Oral carcinoma screening should be possible because the tumour is so accessible and because those at most risk (elderly persons who smoke and drink alcohol) are readily identified. A simple effective screening test is an examination of the mouth for red and white lesions. Because screening is not designed to be accurately diagnostic it may be performed by appropriately trained health care workers in the community. Such oral cancer screening schemes have proved successful in several countries with a high incidence. , It would also provide an opportunity for preventive advice to the same group.

Toluidine blue rinsing : Toluidine blue is a dye which binds to nucleic acids and can be used as an oral rinse to stain carcinoma and premalignant lesions blue. The technique was extensively evaluated many years ago and is now the subject of a resurgence of interest. It may be of value when deciding which part of an extensive lesion should be biopsied or when the clinician does not feel confident about a clinical diagnosis. However, the technique is not an accurate test for either carcinoma or premalignancy and is no more than an adjunct to diagnosis. Toluidine blue is itself mutagenic and it seems inadvisable to use it as a general screening test. The general rule should be that any suspicious lesion must be subjected to biopsy as soon as possible, regardless of the pattern of staining with toluidine blue.

Health promotion and health education : The recognition of the importance of the environment and structural issues to health has led to the development of health promotion programmes. Health promotion has been defined as the process of seeking to improve or protect health through a range of activity, including behavioural, socioeconomic and environmental policy change (World Health Organization, 1984). More specifically, the range of health promotion activities includes the following:

1. Health education. This includes giving information about health, offering advice and trying to encourage the development of personal self-confidence. Opportunities for this exist in group

situation, such as school, and dentist-patient contact. Radio, television or newspapers may also provide information and advice. The latter group is non-personal, however, and cannot be focused on an individual's specific needs.

2. Personal preventive health services, such as immunization or oral cancer screening, and positive health services, such as smoking cessation programmes. Special initiatives might be planned for those patients who are unable to access professional dental care, whether for reasons for anxiety or distance.

3. Environment measures, such as making the physical environment more conducive to health. This might include designing buildings better to reduce the chance of dental trauma in children or the optimal adjustment of the fluoride content of water to prevent dental caries (Burt and Eklund, 1997). The adjustment of fluoride in public water supplies to the optimal level of one part per million has been shown to be an effective method of reducing dental decay.

4. Involving the community, either to develop local services or to form self-help or pressure groups.

5. Organizational development, involving the implementation of policies that promote the health of staff and their clients, such as providing no-smoking areas or healthy catering services.

6. Economic and regulatory activity. This might involve changing taxation to make products either more or less expensive or the development of a code of practice that may, for instance, control the advertising of health compromising products (Catford and Nutbeam, 1984).

The fundamental issue is to make the healthy choices easier (Milio, 1986). Health education is an important part of overall health promotion activity. Interventions may not have long-term acceptability without public understanding of the reasoning behind them. On the other hand, knowing what a healthy diet should contain will not be very helpful to those people without the resources to purchase the diet, and will not affect the availability in shops of the products that constitute it. i.e. fluoridation, sugar-free paediatric medicine syrup.

Conclusion and implications :

From the study it is concluded that the prevalence of malignant lesions were significantly high amongst tobacco users compared to non tobacco users. Oral consumption of tobacco is significant health hazard especially for oral and dental Health. All the medical and health professional must be aware of the tobacco related ORAL LESIONS and must suspect malignancy in suspicious lesion and send for tissue diagnosis, because early diagnosis can be curative for malignancy. Similarly medical people must be precocious about the premalignant conditions.. As dental professionals are more likely to explore the oral cavity, they must be more careful in suspecting such lesion. At any level or type of lesion, medical personnels should not forget to examine oral cavity (OPEN YOUR MOUTH HA,HA, HA) and advise to stop the tobacco consumption of any type or form. In this context it is further stated that Tobacco use is a complex addiction that must be addressed in all aspects of health care. Despite the deleterious and costly outcomes of tobacco use, people still are smoking and using smokeless tobacco. Doctors and Dentists should be trained to detect oral lesions and periodontal problems that are related to tobacco use. We are in a position to help prevent the initiation of tobacco use by children and adolescents through the use of positive anti-tobacco messages and by laws. Over the

past decade, tobacco cessation strategies have been modified and made practical.

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A CASE REPORT

MIXED INTESTINAL PARASITIC INFECTIONS

IN STOOL

INTRODUCTION :

Parasites like *Ascaris lumbricoides*, *Trichuris trichiura*, *Strongyloides stercoralis* are worldwide in distribution. *Ascaris lumbricoides* is cosmopolitan, being specially prevalent in the tropics such as India and China. Parasites found in soil can cause mixed parasitic infection from skin penetration or because of unhygienic condition.

The present case study is of mixed parasitic infections by

- *Ascaris lumbricoides*,
- *Trichuris trichiura*,
- *Strongyloides stercoralis*,
- *Entamoeba coli*,
- *Cryptosporidium*

A 16 years girl residing in slum area at the bank of Sabarmati river, Ahmedabad was admitted in V.S. General Hospital, with a history of fever and generalized weakness of 2 months duration, Loss of weight, loss of appetite, pain in abdomen, diarrhoea with blood and mucous, easy fatigability, dyspnoea on exertion, itchy dermatitis and respiratory infection o 8-10 days duration.

A detailed history was taken.

On examination, she had mild hepatosplenomegaly, pallor and enlarged abdomen. Laboratory investigations showed - Hb 5.5 gm/dl & smear showed haemolytic anaemia.

G6PD - detected. - ESR 155mm after 1 hr.

S. Widal - Positive 1:120 titer - Total bilirubin 1.8 mg%

All other investigations were normal.

Ultrasonography of abdomen showed mild splenomegaly, gall bladder contracted, multiple enlarged lymph nodes including periportal, peripancreatic, splenic and mesenteric, and mild free fluid in pelvis.

Differential diagnosis of 1. Koch's abdomen and

2. Enteric fever was considered.

STOOL EXAMINATION

Stool 2 samples were subjected to examination for helminthes and protozoa by direct wet mount

and concentrated formol ether sedimentation method.

1. Macroscopic : Semi-solid and black colored with adult worm of *Ascaris lumbricoides*.

2. Microscopic :

a. Saline/Lugol's iodine preparation showed presence of -

= Unfertilised eggs of *Ascaris lumbricoides*: They are round or oval in shape and 60 to 75 m in length by 40 to 50 m in breadth, surrounded by outer albuminous coat-contains unsegmented ovum.

= Eggs of *Trichuris trichiura*: They are barrel shaped with mucous plug, measuring about 50m in length and 25m in breadth. It has a double shell and contains unsegmented ovum.

= Larva of *Strongyloides stercoralis*: Motile Rhabditiform larvae are found. They measure 200 to 250 m in length by 16 m in breadth. They have short mouths and double-bulb oesophagus.

= Cyst of *Entamoeba coli*: They are round with 1 to 8 nuclei and measure 15 to 20 m in diameter.

= Few RBCs

= Pus cells

b. Modified Z-N stain showed presence of oocysts of *Cryptosporidium* - round to oval pink body, 4 to m in diameter.

c. Formal ether concentration technique: showed same morphology of above mentioned eggs, larva and cyst. Occult blood - Positive.

Inj. Chloroquine, Cefaxone and other supportive treatment was started after admission. By fourth day diagnosis of parasitic infection in stool was made and Tablet. Helminth was added.

Patient recovered after full treatment. Repeat Widal test was negative at the end second week, stool examination showed no larva and number of eggs/HPF showed that same parasites were decreased in number. On follow-up, she was found well after one month.

DISCUSSION :

In overcrowded city like Ahmedabad with Inadequate sanitary facilities illiterate persons with poor hygiene, provide an environment conducive to spread of infections like *Ascaris lumbricoides*, *Trichuris trichiura* and *Cryptosporidium*. Often bare foot habits play an important role in spreading infection like *Strongyloides stercoralis*.

In the present case study lower haemoglobin value, raised reticulocyte count, increased serum bilirubin and peripheral blood smear examination showing picture of haemolytic anaemia. It was due to GPD deficiency which was triggered by chloroquine injections given to treat the fever. Toxic action of the body fluid of adult worm give rise to typhoid-like fever. The positive S. Widal test suggests anamnestic reaction. Also wandering ascaris entering into biliary passage gives rise to contracted gall bladder on ultrasonography. Multiple enlarged lymphnode and raised ESR correspond with Koch's abdomen.

About 25% of the world's population carry worms, children being the most heavily infected section of population. In contrast to bacterial and viral infections, parasitic infection of gastrointestinal tract may diagnosed rapidly by direct microscopic examination of stool. In this case diagnosis was possible only due to proper examination of stool and general awareness about the diseases. Hence an optimal use of microbiological service is essential for an accurate diagnosis of parasitic infection in each case.

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ROAD SAFETY IS NO ACCIDENT"

World Health Organization - 2004

(Dr. Jay K. Sheth - Assistant Professor, Dept. of P&SM, Smt. NHL. Mun. Medical College Ahmedabad-380 006)

World Health Day is celebrated annually on the 7th of April. The theme for World Health Day 2004 is Road Safety. Road traffic injuries now pose a global public health crisis that requires urgent action at the national and the international levels. The slogan "Road Safety is No Accident" draws attention to the fact that road traffic injuries can be prevented if governments and others take action.

Throughout the world, roads are overcrowded with various types of vehicles. By making the transportation of goods and people faster and more efficient, these vehicles support economic and social development in many countries. But while motorized travel provides many benefits, it can also do serious harm unless safety is made a priority. Pedestrians and cyclists using roads are particularly at risk. Crashes are frequent. Deaths and injuries are common. Road traffic injuries are a deadly scourge, taking the lives of 1.2 million men, women and children around the world each year. Hundreds of thousands or more are injured on our roads, some of whom become permanently disabled. The vast majority of these occur in developing countries, among pedestrians, cyclists, motorcyclists and users of public transport, many of whom would never be able to afford a private motor vehicle.

Based on 1998 data, 88% of traffic-related deaths occurred in low and middle-income countries. For most types of injuries, people die at a higher rate in low and middle-income countries than in high-income countries. The poor are at high risk for injury because they are faced with hazardous situations on a daily basis. For instance, their means of transport are overcrowded and poorly maintained. As pedestrians on unsafe roads, they are vulnerable to being crushed by cars and buses. The poor also have less chance of survival when injured because they have less access to

health services.

Road Traffic Injuries (RTIs) are the leading cause of death by injury, the 10th leading cause of all deaths and the 9th leading contributor to the burden of disease world wide. They constitute a rapidly growing problem, with deaths from all types of injuries projected to rise from 5.1 million in 1990 to 8.4 million in 2020. It is also projected that by 2020 RTIs will account for about 2.3 million deaths globally and will account for a greater proportion of all injury deaths (27.4%), with over 90% of these deaths occurring in developing countries. If current trends continue, the number of people killed and injured on the world's roads will rise by more than 60% between 2000 and 2020. Rapid urbanization and motorization in developing countries will account for much of the rise and the rise will be steeper due to lack of appropriate road engineering and lack of injury prevention programs in the public health sector.

There are solutions to the road safety problem. A wide range of effective interventions exist, and experience in countries with long histories of motorized travel has shown that a scientific, "systems approach" to road safety is essential to tackling the problem. This approach addresses the traffic system as a whole and looks at the interactions between vehicles, road users and the road infrastructure to identify solutions. The important point to consider in this systems approach is that there is no single blueprint for Road Safety.

Details of 5 major risk Factors

1. Speed : slow down!

Facts :

- = Speed contributes to at least 30% of road traffic crashes and deaths.
- = For every 1km/hr increase in speed there is a 3% increase in the incidence of injury crashes and a 5% increase in the risk of a fatal crash.
- = Pedestrians are eight times more likely to be killed by cars traveling at 50km/h than 30km/h.

Key interventions:

- = setting and enforcing speed limits
- = designing roads according to their function (e.g. highways, suburban roads)
- = speed cameras or stationary enforcement
- = traffic calming measures, such as speed bumps and traffic circles
- = education and public information.

2. Alcohol: don't drink alcohol and drive

Facts:

- = Any level of alcohol in the blood increases the risk of crashes.

= The risk of crashes increases significantly with blood alcohol concentrations greater than 0.04g/ dl.

Key interventions :

- = setting and enforcing blood alcohol concentration limits
- = random breath testing
- = mass media campaigns
- = tough and swift penalties for offenders
- = breath test devices as ignition interlocks in vehicles.

3. Seat-belts and child restraints: strap in!

Facts :

- = Seat-belt usage has saved more lives than any other road safety intervention.
- = Seat-belts reduce fatal or serious injury by 40- 65%.
- = Child restraints reduce infant deaths by 71% and deaths in young children by 54%.

Key interventions :

- = setting and enforcing seat-belt use and child restraint laws
- = publicity campaigns
- = smart, audible seat belt reminders (e.g. alarm sounds in vehicles)

4. Wear helmets!

Facts :

- = Head trauma is the main cause of death and disability in drivers of motorized two-wheelers.
- = Among children, bicycle injuries are the leading cause of injury.

Key interventions :

- = setting and enforcing laws on helmet wearing
- = standards for motorcycle helmets
- = penalties for nonuse
- = targeted information campaigns.

5. Visibility: see and be seen

Facts :

= One third of people hit on the road report they had difficulty seeing the vehicle; almost half of drivers have difficulty in seeing the pedestrian.

Key interventions :

= reflectors on vehicles and reflective clothing for people

= white/yellow helmets

= street lighting.

DO CELLULAR PHONES ARE

REALLY HARMFUL ?

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Key words :

mobile phones, base stations, health effects.

Current mobile phone system operates at frequencies between 800MHz and 1800 MHz. It is important not to confuse such radio frequencies (RF) with ionizing radiation such as x-rays or gamma rays. RF fields cannot cause ionizing or radioactivity in the body, because of this RF fields are called nonionizing.

Cellular phone handsets are low-powered RF transmitters emitting maximum powers in the range of 0.2-0.6 watts. "Walkie Talkies" may emit 10 watts or more. RF field strength falls off rapidly with distance from the handset. Therefore RF exposure to a user of a mobile phone located 10s of cm from the head (i.e. using a "hands free") is far lower than to a person who places the handset against head. RF exposure to nearby people is very low. Base stations transmit power levels from a few watts to 100 watts or more. Base station antennae are typically about 20-30 cm in width and 1 meter in length at a height of from 15 to 50 meters above the ground. This antennae emit RF beams that are narrow in vertical direction but quite broad in horizontal direction.

Paging, fire, Police and emergency services operates at similar power levels as cellular base stations. Television and radio broadcast antennae commonly transmit higher RF levels than a mobile base station.

Health Effects :

RF fields penetrates exposed tissues to depths that depend on the frequency- upto a centimeter. RF energy is absorbed in the body and produce heat but the body's normal thermoregulatory process carry this heat away.

WHO has identified research needs to make better health risk assessment and promoted the research to funding agencies. Briefly, at present time this research indicates

Cancer : Current scientific evidence indicates that exposure to RF fields, such as those emitted by mobile phones and their base stations, is unlikely to induce or promote cancers.

Other health risks : Scientists have reported other effects of using mobile phones including changes in brain activity, reaction times, and sleep patterns. These effects are small and have no apparent health significance.

Driving : Research has clearly shown an increased risk of traffic accidents when mobile phones

Precautionary measures :

Present scientific information does not indicate the need for any special precautions for use of mobile phones. If individuals are concerned, they might choose to limit their own or their children's' RF exposure by limiting the length of calls, or using "hands-free" devices to keep mobile phones away from the head and body.

Mobile phones may interfere with certain electromedical devices, such as cardiac pacemakers and hearing aids.

Mobile phones should not be used in aircraft as they may interfere with its navigation systems.

Driving safety : Motorists should be strongly discouraged from using mobile phones while driving.

RF absorbing devices : Scientific evidence does not indicate any need for RF-absorbing covers or other "absorbing devices" on mobile phones.

Sitting base stations near kindergartens, schools and playgrounds may need special consideration.

An effective system of health information and communications among scientists, governments, industry and the public is needed to raise the level of general understanding about mobile phone technology and reduce any mistrust and fears, both real and perceived.

THALIDOMIDE : REDISCOVERED

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Thalidomide, after being banned from the market in the early 1960s because of the worldwide teratogenesis disaster (Phocomelia, amelia, hypoplasticity, absence of bones, external ear abnormalities & congenital heart defects) is now being rediscovered due to its multiple therapeutic effects in various diseases & symptoms.

Original studies examined the antiemetic, anxiolytic, mild hypnotic & adjuvant analgesic properties of this drug (Table 1).

Table 1. Original uses of Thalidomide.

Classification Use

1. Nonbarbiturate hypnotic Insomnia
2. Sedative Anxiousness,
Restlessness in elderly
3. Anti-emetic Morning Sickness,
hyperemesis gravidaris
4. Adjuvant analgesic Pain

Subsequently, thalidomide was found to be highly effective in managing the cutaneous manifestations of leprosy (erythema nodosum leprosum) and even to be superior to aspirin in controlling leprosy - associated fever.

Recent research shows promising results with thalidomide in patients with progressive body weight loss related to advanced cancer and HIV infection.

Currently, thalidomide is being explored in following new diseases (Table 2).

Table 2. Novel uses of Thalidomide in Specific conditions

1. Leprosy, Erthema Nodosum Leprosum (ENL)
2. Chronic illness syndrome e.g. Cachexia
3. Tuberculosis, Sarcoidosis
4. Aphthous ulcers in HIV syndrome and Behcet's disease.
5. Graft - versus - host disease
6. Pyoderma gangrenosum
7. Inflammatory bowel disease
8. Rheumatoid arthritis
9. Sjogren's syndrome
10. Discoid lupus erythematosus
11. Multiple myeloma
12. Advanced solid tumours eg. Renal cell carcinoma.

Furthermore, thalidomide has been found to be effective in several syndromes related to advanced cancer - these intriguing features make the use of the drug potentially attractive for

palliative care. (Table 3).

Table 3. Potential uses of thalidomide in palliative care

1. Cancer Cachexia/anorexia
2. Chronic nausea
3. Insomnia
4. Neoplastic fever
5. Profuse sweating
6. Angiogenesis
7. Pain

In addition, by a distinct mechanism of action compared with most other drugs, thalidomide offers the possibility of combined treatment with other agents with non- overlapping toxicities.

The mechanism of action of thalidomide is probably based on the suppression of tumour necrosis factor - α (TNF - α) and the modulation of interleukins. However, it is not possible to identify a single dominant mechanism, since the action of cytokines & the effect of thalidomide appear to be complex.

The more frequent adverse events associated with thalidomide are outlined in (Table 4).

Table 4. Adverse effects of Thalidomide

1. Teratogenesis
2. Neuropathy
3. CNS effects e.g. drowsiness
4. Allergic drug reactions
5. Hematological effects
6. Increased Viral load in HIV - infected individuals
7. Drug Interactions.

In response to reappearance of thalidomide in the world market, a system has been developed to minimize any substantial risk of thalidomide - induced teratogenicity.

Thalidomide is commercially available only through the System for Thalidomide Education and Prescribing Safety (STEPS) programme, a manufacture - regulated system. To prescribe and dispense thalidomide, the healthcare provider must register with the STEPS programme. The prescriber and the patient are required to review and sign the consent form.

We conclude, that thalidomide has a number of interesting and promising effects on multiple

clinical syndromes. These potential effects should be investigated. Thalidomide might be particularly beneficial in many developing countries.

NEW DRUGS

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[A] NESIRITIDE - a new drug for 'Heart Failure'

Produced through recombinant DNA technology to contain the same amino acid sequence as the endogenous human B-type natriuretic peptide (hBNP). Recently approved by USFDA as a vasodilator for hospitalized patients with CHF. The aim is to reduce preload or afterload or both.

Pharmacological Actions :

= Binds to guanylate cyclase receptor on vascular smooth muscle and endothelium. Increases intracellular concentration of C-GMP. Effectively produces arterial and venous dilation.

= Opposes renin-angiotensin system . Causes diuresis.

= Reduces PCWP (Pulmonary Capillary Wedge Pressure) and systemic arterial pressure, within 15 minutes. Studies do not adequately compare effectiveness with nitroglycerin.

Kinetics :

Clearance by 3 mechanisms :

- 1) Cellular intake after binding to cell-surface receptors.
- 2) Proteolytic cleavage by endopeptidases on surface of vascular lumen.
- 3) Renal filtration (minimal). Half-life 18 minutes.

Preparation,Dose and Administration :

1.5 mg vials (lyophilized powder). Withdraw 5 ml from a 250 ml bag of NS and add to the drug vial. Then transfer entire contents to the IV bag. IV bolus: 2 mcg/Kg over 1 min, then continuous infusion 0.01 mcg/Kg/min.

Adverse Reactions :

Hypotension: 11%. Higher incidence at doses > 0.01 mcg/Kg/min. Duration of symptomatic hypotension was longer for nesiritide than NTG (2.2 hr vs. 0.7 hr). Use caution if baseline SBP < 100. Headache 8%, back pain 4%, nausea 4%. Increased serum creatinine (by 0.5 mg/dL) in 28% of pts. Incompatibilities: heparin, furosemide, hydralazine, insulin, ethacrynic acid, enalaprilat, and bumetanide. Do not administer through a central "heparin-coated" catheter.

Indication :

IV treatment in acute decompensated CHF, who have dyspnoea at rest or with minimal activity.

Contraindications :

Cardiogenic shock (SBP <90) or pts with low cardiac filling pressures.

[B] NAMENDA : a newer drug for Alzheimer's disease

The excitatory neurotransmitter glutamate plays an important part in the development of neurodegenerative diseases like dementia. About 70 % of all excitatory synapses in the central nervous system are stimulated by the neurotransmitter glutamate. Dysfunction of glutamatergic neurotransmission is involved in pathomechanism of neurodegenerative dementia. The excitatory effect of chronically released glutamate affects the degeneration of cortical and subcortical neurons, thus leading to the occurrence of dementia symptoms. Alzheimer's disease is complicated, and each case has unique circumstances.

Namenda represents an important advance in the treatment of moderate to severe Alzheimer's disease.

Normal glutamatergic neurotransmission :

Under physiological conditions, the NMDA receptor is blocked by magnesium ions, thereby protecting the neuron against glutamatergic excitotoxicity. During physiological learning and memory processes, high concentrations of synaptic glutamate are transiently released. Due to its strong voltage-dependency, magnesium leaves the NMDA receptor. Calcium enters into the cell, and through secondary processes, the signal is recognized. This is clearly discernible behind the low background noise.

Alzheimer dementia :

The pathological, sustained release of low glutamate concentrations, from both neurons and surrounding glia cells, also displaces magnesium from the NMDA receptor channel. There is a continuous influx of calcium into the cell, increasing the calcium pool. In the case of learning and memory processes, the transient synaptic release of glutamate causes more calcium to flow into the cell. However, due to the already elevated calcium concentration, the signal can no longer be detected (occurrence of dementia symptoms).

In the course of the disease, the chronic release of glutamate and the permanently increased intracellular calcium concentration leads to neuronal degeneration (neuroapoptosis).

Sites of action of namenda in dementia :

Namenda, is an NMDA receptor antagonist. During sustained release of low glutamate concentrations, the influx of calcium is prevented (neuroprotection). The intracellular calcium pool is reduced. During learning and memory processes (i.e. transient high glutamate release), namenda - the fast, voltage-dependent NMDA-receptor antagonist - leaves the NMDA receptor for a short time. A signal is produced which due to the lower noise can be recognized and processed which leads to a symptomatic improvement in dementia symptoms.

Preparation & Dose :

Available in U.S.A. under the brand name 'AXURA' from May, 2004. 8 mg. p.o. twice daily.

Adverse Reactions :

Namenda (memantine HCl) is contraindicated in patients with known hypersensitivity to memantine HCl or to any excipients used in the formulation. The most common adverse events reported with Namenda vs. placebo (greater than or equal to 5% and higher than placebo) were dizziness, confusion, headache, and constipation. In patients with severe renal impairment the use of Namenda has not been systematically evaluated and is not recommended.

[C] NEBIVOLOL- a novel b 1 -blocker

Nebivolol is a new lipophilic competitive and highly selective beta 1-adrenergic blocking agent that possesses an original chemical structure and peculiar pharmacodynamic profile by which it differs from traditional beta 1-blockers. Nebivolol is devoid of intrinsic sympathomimetic or membrane stabilizing activity. Nebivolol is a long acting, cardioselective beta-blocker currently licensed for the treatment of hypertension. It is also endowed with mild vasodilating properties attributed to its interaction with the L-arginine/nitric oxide pathway, a property not shared by other beta-blockers.

Preparation, Dose and Administration : Nebilet (A. Menarini Pharmaceuticals UK Ltd). is available as nebivolol hydrochloride 5.45mg (equivalent to 5mg nebivolol).

Adults : 5mg daily. In renal insufficiency the recommended starting dose is 2.5mg daily, which may be increased to 5mg, if necessary.

Nebivolol is considerably more expensive than atenolol, but costs less than carvedilol or celiprolol.

Adverse Reaction : The most frequent adverse events (incidence between 1-10%) were headache, dizziness, tiredness and paraesthesia. Other adverse events reported by at least 1% of patients were: diarrhoea, constipation, nausea, dyspnoea and oedema. To date, no significant adverse effects on plasma lipids or glucose metabolism have been demonstrated in pts with hypertension, although rare cases of raised triglyceride levels have been reported.

Indication: Theoretically, it may be a better b 1 - blocker in diabetic, dyslipidaemic, PVD and physically active individuals. It may provide an alternative to other vasodilatory beta-blockers in hypertensive patients who are unable to tolerate atenolol.

Contraindication: It is contra- indicated in pregnancy and lactation and in liver disease.

[D] EFLORNITHINE - a novel remedy for unwanted facial hair

= An antineoplastic; in its oral form, used as an antiprotozoal compound for African sleeping sickness. Also has been used for PCP pneumonia, psoriasis, and malignancies.

Mechanism of Action: Inhibits ornithine decarboxylase (ODC) in human skin, an enzyme necessary for synthetic functions and cell division. Inhibition of ODC affects rate of hair growth. ODC is characterized by its striking inducibility and very short half-life. The relatively short half-life of eflornithine allows replacement of irreversibly inhibited mammalian enzyme by rapid turn over, whereas, the more stable parasite enzyme remains inhibited. This difference may explain the therapeutic antitrypanosomal action of eflornithine and its lack of toxic effect on the host cell.

Kinetics: Percutaneous absorption is < 1%. Excreted unchanged in the urine.

Preparation and Application : 13.9% cream, 30gm tube. Apply a thin layer to affected areas of face and rub in thoroughly. Two times a day, at least 8 hours apart. Apply at least 5 min after hair removal techniques. Cosmetics and sunscreens can be applied over treated areas after the cream has dried. Do not wash treated areas for at least 4 hrs.

Adverse Reactions : Skin irritation (minor): acne, stinging, itching, tingling, rash, temporary redness, hair bumps, or burning. Reduce frequency then. Other (<1%): bleeding skin, cheilitis, contact dermatitis, lip swelling, herpes simplex, rosacea.

Indication: Reduction of unwanted facial hair in women-

= Improvement may be seen usually within 8 weeks.

= Not a permanent cure. Improves the condition and pt.'s appearance but pt. will likely need to continue previous methods of hair removal in conjunction with eflornithine.

[E] TELITHROMYCIN - a new macrolide antibiotic

A ketolide semisynthetic 14 -membered - ring macrolide, differing from erythromycin by substitution of a 3- keto group for the neutral sugar l - cladinose. A structural change.

Indications: Acute bacterial exacerbations of chronic bronchitis caused by Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis; acute bacterial sinusitis caused by S. pneumoniae, H. influenzae, M catarrhalis, Staphylococcus aureus; mild to moderately severe community acquired pneumonia caused by S. pneumoniae and H. influenzae, including their multiple-drug-resistant strains, M. catarrhalis, Chlamydia pneumoniae, Mycoplasma pneumoniae-

Kinetics: Oral bioavailability is 57 %. Tissue and intracellular penetration is generally good. Metabolized and eliminated by a combination of biliary and urinary routes of excretion.

Preparation and Dose :

Tablets: 400 mg. Adults: 800 mg P.O. once daily for 5 days. If used for treating

community-acquired pneumonia, continue for 7 to 10 days.

Adverse Reactions:

CNS: headache, dizziness.

GI: diarrhea, nausea, vomiting, loose stools; taste alteration.

Pregnancy Risk: Category C.

Contraindications and Precautions:

Contraindicated in patients allergic to telithromycin, to any component of the drug, or to any macrolide antibiotic. Contraindicated also in patients with congenital QTc prolongation, proarrhythmic conditions (hypokalemia), or significant bradycardia; in those taking pimozide, class Ia or III antiarrhythmic, statins, and in patients with myasthenia gravis. Use cautiously in patients with history of hepatitis or jaundice, in those with renal impairment, and in pregnant or breast-feeding patients.

[F] ETANERCEPT- A Novel Antirheumatic Agent

Etanercept is a dimeric fusion protein consisting of the extracellular ligand-binding portion of the human 75 kilodalton (p75) tumor necrosis factor receptor (TNFR) linked to the Fc portion of human IgG1. Etanercept is produced by recombinant DNA technology.

Indications And Usage:

Etanercept is indicated for reducing signs and symptoms, inhibiting the progression of structural damage, and improving physical function in patients with moderately to severely active rheumatoid arthritis, polyarticular-course juvenile rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis. It can be used in combination with methotrexate in patients who do not respond adequately to methotrexate alone.

Dosage And Administration

The drug is marketed as ENBREL in U.S.A since April 2004, not available in India and is supplied in a vial which contains 25 mg of etanercept powder which should be reconstituted with 1 ml of sterile water for parenteral administration.

The recommended doses are as follows :

Adult RA, AS, and Psoriatic Arthritis Patients:

50 mg per week given as two 25 mg subcutaneous (SC) injections at separate sites. The dose should be administered as two 25 mg injections given either on the same day or 3 or 4 days apart.

Adult Plaque Psoriasis Patients :

50 mg dose given twice weekly (administered 3 to 4 days apart) for 3 months followed by a reduction to a maintenance dose of 50 mg per week.

JRA Patients:

For pediatric patients ages 4 to 17 years with active polyarticular-course JRA the dose is 0.8 mg/kg per week (up to a maximum of 50 mg per week).

Contraindications

Patients with sepsis or with known hypersensitivity to etanercept or any of its components.

Adverse Reactions

Injection Site Reactions: Erythema and/or itching, pain, or swelling.

Infections : It should be used cautiously in patient on concomitant immunosuppressive therapy, patients with a history of recurring infections or with underlying conditions which may predispose patients to infections, such as advanced or poorly controlled diabetes. It can lead to upper respiratory infection , pyelonephritis, bronchitis, septic arthritis, abdominal abscess, cellulitis, osteomyelitis, wound infection, pneumonia, foot abscess, leg ulcer, diarrhea, sinusitis, and sepsis.

Malignancies: like lymphomas. Nausea, Headache, Rash, Rhinitis, Mouth ulcer and Alopecia are some other common adverse reactions.

[G] MALARONE - New Antimalarial Combination of Atovaquone & Proguanil

MALARONE is a fixed-dose combination of the antimalarial agents atovaquone and proguanil hydrochloride.

Indications And Usage:

Prevention of Malaria: It is indicated for the prophylaxis of *P. falciparum* malaria, including areas where chloroquine resistance has been reported.

Treatment of Malaria: It is indicated for the treatment of acute, uncomplicated *P. Falciparum* malaria. It has been shown to be effective in regions where the drugs chloroquine, halofantrine, mefloquine, and amodiaquine may have unacceptable failure rates, presumably due to drug resistance.

Dosage And Administration:

The combinations is available in two strength since may 2004 but not in India.

Adult preparation contains 250mg of atovaquone and 100mg proguanil per tablet.

Pediatric preparation contains 62.5mg of atovaquone and 25 mg of proguanil per tablet.

Prevention of Malaria:

Adults : Prophylactic treatment should be started 1 or 2 days before entering a malaria-endemic area and continued daily one tablet during the stay and for 7 days after return.

Pediatric Patients : Pediatric tablet should be given as per body weight. 11-20kg - 1 tab daily. 21-30kg- 2 tab daily.31-40kg- 3 tab daily.>40kg 1 adult tab daily should be given.

Treatment of Acute Malaria :

Adults: Four Tablets (total daily dose 1 g atovaquone/400 mg proguanil hydrochloride) as a single dose daily for 3 consecutive days.

Pediatric Patients: 5-8 kg - 2 pediatric tablets daily. 9-10kg - 3 pediatric tablet daily. 11-20kg - 1 adult strength tablet daily. 21-30kg - 2 adult strength tablets daily. 31-40 kg - 3 adult strength tablets daily. >40 kg- 4 adult tablets daily. All should be taken for three consecutive days.

Contraindications:

It is contraindicated in individuals with known hypersensitivity and is contraindicated for prophylaxis of *P. falciparum* malaria in patients with severe renal impairment.

It has not been evaluated for the treatment of cerebral malaria or other severe manifestations of complicated malaria, including hyperparasitemia, pulmonary edema, or renal failure.

Adverse Reactions:

Abdominal pain, nausea, vomiting, headache, diarrhea, asthenia, anorexia and dizziness.

[H] TEGASEROD - New Hope For 'IBS'

Tegaserod is a partial agonist of 5HT₄ receptor which has an important role in patient with irritable bowel syndrome (IBS).

Indication:

It is indicated for the short-term treatment of patients with irritable bowel syndrome (IBS) whose primary bowel symptom is constipation.

Dosage And Administration:

The recommended dosage is 6 mg taken twice daily orally before meals for 4 to 6 weeks. For those patients who respond to therapy at 4-6 weeks, an additional 4-6 week course can be considered. It is marketed as Tablet Zelnorm 2mg and 6mg since July 2002. Not available in India.

Contraindications:

Severe renal impairment, moderate or severe hepatic impairment, a history of bowel obstruction, symptomatic gallbladder disease, suspected sphincter of Oddi dysfunction, or abdominal adhesions, a known hypersensitivity to the drug or any of its excipients.

Adverse Reactions:

Diarrhea, abdominal pain, headache are some common adverse reactions.

REFERENCES:

1) Hardman, J.G; et al "GOODMAN & GILMAN'S THE PHARMACOLOGICAL BASIS OF THERAPEUTICS"; 10 th International Edition.

2) Katzung, B.G; et al "BASIC & CLINICAL PHARMACOLOGY"; 9 th International Edition.