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2. Parkin DM, Clayton D, Blook RJ, Massyer E, Fried HP, Iranov E, et al. Childhood Leukaemia in Europe after Chernobyl : 5 years follow-up. Br J Cancer 1996; 73 : 1006-12.

Chapter in a Book :

1. Phyllyps SJ, Whisnant JP. Hypertension and Stroke. In : Lurgh JH, Brennes BM, editors. Hypertension : Pathophysiology, diagnosis and management. 2nd ed. New York : Raven Press; 1995. p. 465-78.

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A CASE OF REFRACTORY ATRIAL FIBRILLATION TREATED WITH AMIODARONE

MD ZAHID ALAM[1], PRANOB KARMAKER[2],ROWSAN ARA[3],MONZOOR QUADER[4], MM ZAHURUL ALAM KHAN[5], SHABNAM JAHAN HOQUE[6]

Abstract

We report a case of atrial fibrillation (AF) of unknown duration with fast ventricular rate which was refractory to intravenous (i.v.) digoxin, verapamil and DC (direct current) shock regarding rate control. Amiodarone was given in bolus & then in maintenance dose which ultimately controlled the rate and finally converted into sinus rhythm.

Key words: *Atrial fibrillation, refractory, amiodarone.*

Introduction

AF is a supraventricular tachyarrhythmia characterized by uncoordinated atrial activation with consequent deterioration of atrial mechanical function. It is the most common arrhythmia in clinical practice, accounting for approximately one-third of hospitalizations for cardiac rhythm disturbances. It is classified, according to duration, as paroxysmal (intermittent, maximum duration of <7 days), persistent (< 1 year), and permanent AF (lasts for > 1 year and cardioversion either has not been attempted or has failed). Typically, AF occurs in patients with underlying heart disease, such as hypertensive heart disease[1]. But non-cardiac causes are not uncommon, eg, chest infection or hyperthyroidism[2]. AF is associated with significant morbidity, such as thromboembolism, heart failure (precipitate or aggravate), angina (precipitate or aggravate), and increase in all-cause mortality. Management of AF is largely individualized i.e. according to presentation of the patient and underlying cause. Rate and rhythm control are basic two principle of management and these are achieved with electrical (DC shock) or chemical (antiarrhythmic drugs) cardioversion. Sometimes it is difficult to control AF with both of these methods, and operative procedures (eg. AV nodal ablation with permanent pacing, pulmonary vein ablation, etc) are then effective[1,2]. Here, we present a case that was refractory to conventional drugs and even DC shock, later it responded to amiodarone.

Case Report

A 45-year-old lady, known case of diabetes mellitus (DM) type 2 and hypertension (both were controlled with oral agents) with no history of tobacco or alcohol use, was hospitalized with high grade fever and productive cough for 10 days, and drowsiness with breathlessness for 2 days. Admission electrocardiography (ECG) showed AF with fast ventricular rate [heart rate (HR) was 216/min]. She was transferred to coronary care unit (CCU) for better management. No history (given by her relatives) was suggestive of any structural heart disease or hyperthyroidism. A previous ECG (routinely done 7 months ago as a routine check up) was normal. She responded to vocal command, oral temperature was 102°F, blood pressure 90/60 mmHg, respiratory rate 40/min, no visible goiter, apex beat couldn't be localized, no parasternal heave or palpable P2 and no murmur or added sound was present. Lung findings were compatible with consolidation (diminished movement of left side of the chest with impaired percussion note over left lung field from apex to 6th intercostals space with crepitation over same area). Chest radiograph revealed left upper zone consolidation, complete blood count showed neutrophilic leucocytosis with ESR 40 mm in 1st hour and arterial blood gas analysis showed respiratory alkalosis.

She was attempted for rate control with intravenous digoxin (1 mg) for symptomatic AF with hypotension. HR became 250/min after total 2 mg of i.v. digoxin.

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Then i.v. verapamil (5 mg) was given but the HR reached 300/min after giving 30 minutes of verapamil infusion. At this point, the lady was gasping for breath. As the AF was proved to be resistant to digoxin and verapamil, DC shock was tried with prior i.v. bolus heparin. But after giving total 3 shocks (each 100 joules, synchronized with biphasic defibrillator) the HR became 320/min. This time we started i.v. bolus amiodarone (150 mg over 10 minutes). HR came down to 120/min after bolus infusion. Maintenance dose (1 mg/kg over 6 hours, then 0.5 mg/kg over next18 hours) was continued followed by oral dose (200 mg tds). Blood pressure rose into 100/60 mmHg after 30 min and sinus rhythm was achieved after 10 hours of amiodarone infusion. The lady became fully conscious after 12 hours. She developed sinus bradycardia (40/min) on 6th day of her admission, so oral amiodarone was stopped. Meanwhile, she was also treated with i.v. antibiotics for pneumonia, insulin infusion for DM and aspirin as an antiplatelet. Her ECG showed normal sinus rhythm on 10th days.

Thyroid function test, serum electrolytes and troponin-I (2 samples, each 12 hours apart) were normal. Blood and urine culture showed no growth. After achieving sinus rhythm, an echocardiogram was done which showed diastolic dysfunction (grade 1) with good LV systolic function.

Discussion

As stated above, AF has some non-cardiac etiology. Our patient developed AF most likely due to pneumonia as no cardiac disease that can cause AF could be identified during her hospital stay.

AF is a relatively common arrhythmia that is more prevalent in men and with increasing age[3]. AF can have adverse consequences related to a reduction in cardiac output and to atrial and atrial appendage thrombus formation that can lead to systemic embolization[4-7]. The choice of therapy is influenced by whether the AF is recurrent paroxysmal, recurrent persistent, or permanent (chronic) as defined above[1]. The American Heart Association (AHA) guideline on first-detected AF reached the following major conclusions[1]:

- Measurement of the HR at rest and control of the rate using pharmacological agents (either a beta blocker or verapamil or diltiazem and ,in most cases) are recommended for patients with persistent or permanent AF
- In the absence of preexcitation, intravenous administration of beta blockers (esmolol, metoprolol, or propranolol) or nondihydropyridine calcium channel antagonists (verapamil, diltiazem) is recommended to slow the ventricular response to AF in the acute setting, exercising caution in patients with hypotension or HF
- Intravenous administration of digoxin or amiodarone is recommended to control the heart rate in patients with AF and HF who do not have an accessory pathway
- It is reasonable to use ablation of the AV node or accessory pathway to control heart rate when pharmacological therapy is insufficient or associated with side effects
- Intravenous amiodarone can be useful to control the heart rate in patients with AF when other measures are unsuccessful or contraindicated.
- When the ventricular rate cannot be adequately controlled both at rest and during exercise in patients with AF using a beta blocker, nondihydropyridine calcium channel antagonist, or digoxin, alone or in combination, oral amiodarone may be administered to control the heart rate
- When the rate cannot be controlled with pharmacological agents or tachycardia-mediated cardiomyopathy is suspected, catheter-directed ablation of the AV node may be considered in patients with AF to control the heart rate

Our case was a first-detected symptomatic AF with hypotension. So we proceeded first with i.v. digoxin. However, this case was refractory to digoxin, verapamil and even DC shock probably and possibly due to a potential cause of AF, pneumonia, was present that time. The precise mechanism through which amiodarone suppress atrial fibrillation remains unknown[8]. Amiodarone (with its active metabolite, desethylamiodarone) blocks sodium, potassium, and calcium channels. It is also a relatively potent noncompetitive alpha-blocker and beta-blocker but has no clinically significant negative inotropic effect[1,8]. At rapid heart rates, sodium channel blockade is increased[9]. Amiodarone therapy is initiated with a loading dose (for its delayed onset of action) of approximately 10 g in the first 1 to 2 weeks followed by 400 mg given orally each day for the next 2 weeks[10]. Approximately 30% of patients have a reversion to sinus rhythm during this loading phase, and the remainder can undergo electrical cardioversion, which has a high rate of success[11,12]. Our case was fortunate enough to respond early to amiodarone and did not require surgical procedure.

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REVIEW ARTICLES

ADVERSE DRUG REACTION: A COMMON DERMATOLOGICAL EMERGENCY

LUBNA KHONDKER[1], MD ABDUL WAHAB[2], MD SHIRAJUL ISLAM KHAN[3].

Abstract

In the evaluation of patients with a history of adverse cutaneous drug reactions, it is important to obtain a detailed medication therapy including over-the-counter drugs, herbal and neuropathic remedies. There are a significant number of offending drugs causing adverse cutaneous drug reactions. If we can find out the clinical pattern of drug reaction along with their risk and aggravating factors, a good number of lives can be saved. If the offending drugs can be identified, proper preventive measures can be taken by individual or policy makers. Many of the cutaneous drug reactions can be prevented if diagnosed early.

Introduction

Adverse drug reactions are a common cause of dermatologic consultation. Simple exanthems (75%-95%) and urticaria (5%-6%) account for the vast majority of drug eruptions. Females are 1.3 to 1.5 times more likely to develop drug eruptions, except in children under the age of 3 where boys are more likely affected.[1] Complications of drug therapy are a major cause of patient morbidity and account for a significant number of patient deaths. Drug reactions may be solely limited to the skin or they may be part of a systemic reaction, such as drug hypersensitivity syndrome or toxic epidermal necrolysis.[2]

Cutaneous drug reactions have become very common in recent times. The incidence of cutaneous drug reactions is about 2.2% and is reported to be higher among inpatients and females. Fatal reactions to drugs occur even though benign reactions are more common. The incidence increases in proportion to the number of drugs prescribed. Cutaneous drug reactions are the most common adverse reactions attributed to drugs. Any skin disorder can be initated, induced or aggravated by drugs.[3]

Adverse drug reactions (ADRs) are unwanted or unintended effects of drugs, which occur during proper use of a drug. The safe use of medicines is an important issue for prescribers, pharmacists, nurses, regulatory authorities, the pharmaceutical industry, and the public. Healthcare professionals have a responsibility to their patients, who themselves are increasingly aware of the problems associated with drug therapy. It is essential that the practicing pharmacist should have a thorough knowledge about the various adverse effects of the drugs, including its predictability and reversibility, frequency and severity, predisposing factors and recognition, relationship to dosage, and duration of treatment and prevention. Adverse reactions are responsible for a significant number of hospital admissions, among these; cutaneous ADRs (2 to 3%) are one of the frequent reasons for patients to visit the physicians. Although majority of ADRs are minor reactions and are self limiting, sometimes severe and potentially life threatening situations like Stevens-Johnson Syndrome (SJS) and Toxic epidermal necrolysis (TEN) can occur, which constitute from 2.6 to 7% of all drug reactions. Drugs, no matter how safe and efficacious, are always coupled with unavoidable risk of adverse reactions. ADRs are a cause of significant morbidity and mortality in patients of all areas of healthcare today. It has been estimated, that from one third to as high as one half of ADRs, are believed to be preventable. The incidence and severity of ADRs can be influenced by patient-related factors like age, sex, concurrent diseases, genetic factors, and drug related factors like type of drug, route of administration, duration of therapy, and dosage. The other important risk factors associated with adverse drug reactions are gender, increased number of drug exposures, advanced age, length of hospital stay, and function of excreting organs. The incidence of cutaneous drug

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reactions varies from 15 to 30%. Studies on the epidemiology of common cutaneous ADRs have rarely been reported, since such studies can only be successfully conducted in clinics of internal medicine, who employ consultant dermatologists and where there is a comprehensive or intensive ADR monitoring system. Such evaluations of ADR in dermatology are yet to evolve in India.[4]

Cutaneous adverse drug reactions (ADR) can be caused by a wide variety of agents. They are responsible for approximately 3% of all disabling injuries during hospitalization and complications of drug therapy are the most common type of adverse event in hospitalized patients. Many of the commonly used drugs have reaction rates above one percent.[5]

A morbilliform rash is the most common reaction to phenytoin, occurring in as many as 5% of cases overall. However, a wide variety of cutaneous reactions can occur, including acneiform lesions, exfoliative dermatitis, erythema multiforme, SJS, vasculitis, gingival hyperplasia, heel pad thickening, and lupus-like reaction. In a hospital-based adverse drug reaction reporting program from an Indian tertiary care hospital, phenytoin was the individual drug most frequently reported as a cause of adverse drug reaction. As calculated by Naranjo's adverse drug reaction probability score, the causable relationship between phenytoin and TEN in our case is 'probable'. TEN can also occur as a complication of other drugs.

Toxic epidermal necrolysis (TEN) is the most serious of the cutaneous drug reactions. It is blistering disorder, with erosions of multiple mucous membranes and small skin blisters developing on dusky or purpuric macules. The onset is usually acute, as in our case and epidermal necrosis involves >30% of body surface area. It can be distinguished from Stevens-Johnson syndrome (SJS), where the total surface of body surface area detachment is <10%, by definition.[6]

Fixed drug eruptions characteristically recur in the same site or sites each time the drug is administered; with each exposure, however the number of involved site may increase. Usually just one drug is involved. Although, independent lesion from more than one drug have been described. Cross-sensitivity to related drug may occur such as between phenylbutazone and oxyphenbutazone and between tetracycline type drugs, and there are occasional reports of recurrences at the same site induced by drugs which appear to be clinically unrelated, e.g. oxyphenbutazone and tetracycline. Sometimes the inducing drugs can be re-administered without exacerbation, and there may be a refractory period after the occurance of a FDE. Acute lesions are sharply marginated round or oval plaques of erythema and oedema becoming dusky and violaceous or brown in colour, and sometimes surmounted by a large bulla. They usually develop within 30 minutes to 8 hours of drug administration. Lesions are sometimes solitary at first but with repeated attacks, new lesions usually appear and existing lesions may increase in size. Lesions are commoner in the limbs than the trunks; the hands and feet, genitalia (glans penis) and peri-anal areas are favourite sites. Peri-oral and peri-orbital lesions may occur. Genital and oral mucous membranes may be involved in association with skin lesions or alone. Pigmentation of the tongue may occur as a form of fixed drug eruption in heroin addicts. A curious linear fixed drug eruption to intramuscular cephazolin occurred. As healing occurs, crusting and scaling are followed by pigmentation, which may be very persistent and occasionally extensive, and all that is seen between attacks. Local or constitutional symptoms are mild or absent. Diffuse hypermelanosis of extensive areas of trunk, face or limbs is perhaps more common in Negroids. Non-pigmenting fixed reactions have been reported in association with pseudoephendrine, tetrahydrozoline or piroxicam.

The number of drugs capable of producing fixed eruptions is very large but most are due to tetracyclines, sulphonamides (including co-trimoxazole), barbiturates, oxyphenbutazone, metamizol, acetylsalicylic acid, hyoscine butylbromide, ibuprofen, chlordiazepoxide, dapsone, phenazone, phenolphthalein, quinine and derivatives, paracetamol, benzodiazepines. Earlier series incriminated analgesics, sulphonamides and tetracyclines. In a recent report from Finland, phenazones caused most eruptions, with barbiturates, sulphonamides, tetracyclines and carbamazepine causing fewer reactions. Patch testing in a previously involved site may yield a positive response in a high proportion of cases. The mechanism of the reaction is unknown; serum factors and localized skin factors have been postulated, while the results of skin autotransplantation have been equivocal. Lesional skin contains T cells with suppressor/cytotoxic phenotype. Keratinocytes express the intercellular adhesion molecule ICAM-1, which is involved in interaction between keratinocytes and lymphocytes in lesional but not in normal skin, which may be of relevance to the preferential site specificity of the condition.

Erythema multiforme is more commonly precipitated by various interactions, and therefore many instances may have been wrongly blamed on drugs. Clinically,

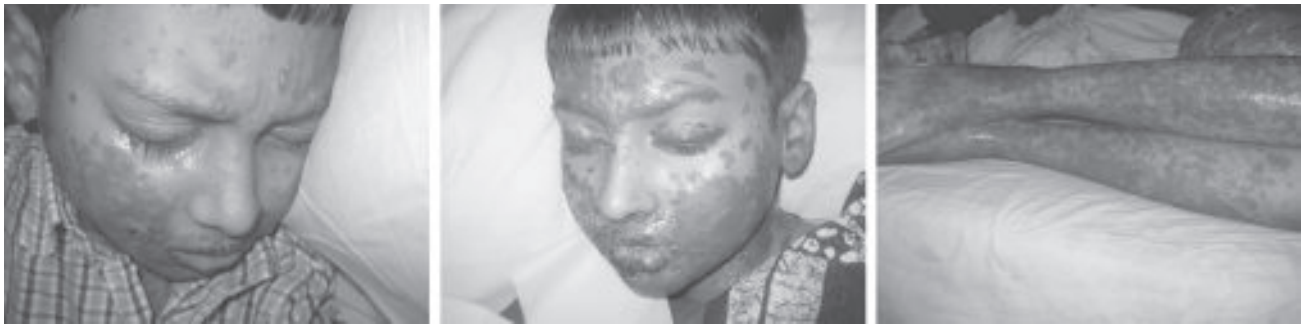

Figure: *Multiple bullous eruption with erythematous base involving skin and mucosa in a 9 years old patient of TEN.*

macular, papular, or urticarial lesions, as well as the classical iris or 'target lesions', sometimes with central vesicles, bullae or purpura, are distributed preferentially on the distal extremities, especially the dorsa of the hands and the extensor forearms. Lesions may involve the palms or trunk. In the Stevens-Johnson syndrome, there is in addition involvement of conjunctival, corneal, iris, buccal, labial and genital mucous membranes; occasionally mucous membrane involvement is all that is seen. Deposits of IgM and C3 may be found in the walls of superficial blood vessels, especially in lesions less than 24 hours old. Circulating immune complexes have been reported, suggesting that immune complex deposition may be important in the pathogenesis.[7]

Discussion

Cutaneous drug reactions are the most common adverse reactions attributed to drugs. Any skin disorder can be limitated, induced or aggravated by drugs. A study was carried out by Patel et al to determine the age, sex incidence and clinical pattern of drug eruptions, to recognize offending drugs (self medication or prescribed), to evaluate mortality and morbidity associated with drugs, to educate the patients, and to avoid self-administration of drugs and re-administration of the offending drugs. The diagnosis of cutaneous drug reactions is mainly based on detailed history and correlation between drug intake and the onset of rash. Two hundred patients (112 males and 88 females) presenting with cutaneous drug reactions were studied. Fixed drug eruption was seen in 61(30.5%) patients; others being urticaria and angioedema 39(18.5%), morbilliform rash in 37(18%), pruritus in 25(12.5%), Stevens-Johnson (SJS) syndrome in six, purpura in six, exfoliative dermatitis in five, photosensitivity in five, Toxic Epidermal Necrolysis in two, acneiform eruption in three, and erythema multiforme in two patients. The most frequently affected age group was 41-50 years, followed by the 21-30 and 31-40 years age groups. The youngest patient was one year old and the oldest was 80 years old. The period of development of lesions after the intake of drug(s) varies from 01-45 days. Cotrimoxazole was the offending drug in 26 cases, followed by Ibuprofen in 20 cases. Fixed drug eruption was the most common drug eruption seen. Cotrimoxazole was the most common cause of drug eruptions. The study finding of Patel et at-where majority of causative drugs in fixed drug reaction are co-trimoxazole 26(29.5%) and NSAIDs 20(22.8%) in number. NSAIDs were also the main offenders in causing urticaria, angioedema and morbilliform rash. Photosensitivity was seen mainly due to ciprofloxacin and sparfloxacin in four cases. Five cases of exfoliative dermatitis (2.5%) occurring due to carbamazepine (two), ibuprofen and NSAIDs and dapsone were seen. There were four cases of purpura-the offending drugs being aspirin, chloroquine, griseofulvin and an unknown drug. One case of angular cheilitis was due to isotretinoin.[3]

Ghosh et al did a study at Kasturba Hospital (KH), Manipal, a 1400 bedded tertiary care hospital. The study was focused on extending the ADR reporting and monitoring program to the dermatology department, with the objective to implement ADR reporting and monitoring system in the department of dermatology of Kasturba Hospital, Manipal; to categorize and analyze the reported cutaneous ADRs, which were reported during the study period; to evaluate the management and outcome of ADRs; and to assess the causality, severity and preventability of the reported cutaneous ADRs, using different scales. The study was a prospective one, conducted in the dermatology department of KH Manipal, for a period of six months, between November 2002 and April 2003. All the inpatients and the outpatients who visited the department during the study period, were monitored for ADRs. Patient case notes/files and suspected ADR notification forms were used as main sources of data collection. For the study purpose, the following documents were used. Suspected ADR notification form, ADR reporting and

documentation form, ADR alert card, Thank you card, Causality assessment scale (Naranjo's scale), Severity assessment and Preventability assessment scale (Hartwig *et al.* scale). The clinical pharmacist who was posted in the dermatology department, used to take part in the ward rounds along with other dermatologists, and actively monitor for any ADRs. To strengthen the awareness of the ADR reporting system posters were displayed, oral campaign, and formal speeches about the importance of reporting ADRs, were done. On intimation of suspected ADRs by the dermatologist, the notification form was filled up by the pharmacist, and the case was followed up for further details, and were documented in the ADR reporting and documentation forms. 'ADR alert card ' was given to the patients who exhibited hypersensitivity type of reaction, or near fatal reaction with any component of the drug. Thank you cards were issued to those dermatologists who reported ADR, so as to encourage further reporting. All the documented ADRs were analyzed for incidence, purpose of visit to the hospital, types of ADRs, drug classes, and individual drug causing cutaneous reaction, association of cutaneous reaction with drugs, predisposing factors, management and outcome of ADRs. ADRs were also assessed for causality using Naranjo's scale, severity and preventability, using Hartwig *et al.* scale. Severities of the reported ADRs were assessed at various levels, ranging between 1 and 7. Level 1 and 2 indicates mild, 3 and 4 as moderate and level 5 and above, as severe ADRs. The study of Ghosh et al was seen that majority of adverse reactions were Stevens-Johnson syndrome, erythema multiforme and urticaria among the 53 patients of adverse drug reactions. Ghosh et al was also seen that majority of adverse drug reactions were due to antibiotic 16(30%), anticonvulsants 13 (25%), anti-tubercular drugs 6(11%), antipyretics 5(9%) and ayurvedic 2(4%).[4]

A study was carried out by Sharma et al in the Department of Dermatology, Venereology and Leprology of Nehru Hospital attached to Postgraduate Institute of Medical Education and Research, Chandigarh, India. All patients suspected of having drug reactions seen in various outpatient departments and admitted in the wards during the period of six years were evaluated. In every case a detailed history was elicited and a thorough clinical examination was carried out as suggested by Sacerdots et al. to establish the etiologic agent for a particular type of reaction, attention was paid to the drug history, temporal correlation with the drug, duration of the rash, approximate incubation period, morphology of the eruption, associated mucosal or systemic involvement, improvement of lesions on withdrawal of drug and recurrence of lesion on rechallenge. If more than one drug was thought to be responsible, the most likely offending agent was noted and the impression was confirmed by subsidence of the rash on withdrawing the drug. The rashes were attributed to a drug following the guidelines of Boston collaborative drug reaction surveillance-programme. All the information was carefully recorded in a specially designed. A total of 500 patients with cutaneous ADR were enrolled during the study period. There were 298 (59.6%) males and 202 (40.4%) females, with an age range of 4 months to 76 years (mean 34.5 years). Maximum number of patients 252 (50.4%) were in the age group of 21-40 years, 126 (25.2%) below 20 years and 72 (14.4%) above 60 years. The incubation period for maculopapular rash and urticaria varied from 30 minutes to 3 weeks. Fixed drug eruption (FDE) had an incubation period ranging from two days to two months. The incubation period for serious drug reactions viz. Stevens-Johnson syndrome (SJS) and TEN varied from a few hours to one-week. Various clinical types of cutaneous ADR and the causative drugs are shown. Serious systemic complications were more frequently seen in cases of TEN. Septicaemia and/or renal failure or other organ dysfunction were seen in 14 patients with TEN and of these, 10 patients died. Other complications recorded were bronchopneumonia, altered liver and renal function tests. Two patients with SJS had major systemic complications (bronchopneumonia and septicaemia with hepatitis in one patient each). The complications observed in erythroderma were acute renal failure (1 patient) and impaired hepatic and renal function (1 patient). Fever was recorded in most of the patients with maculopapular rash, SJS, TEN and erythroderma. Pre-existing renal disease was seen in 2 patients and none of the patients had pre-existing liver disease. Only one patient was HIV positive. In 8 (1.6%) patients, more than one type of rash was observed. Anticonvulsants- phenytoin, carbamazepine & phenobarbitone were implicated in 41.6% of patients with maculopapular rashes. Sulfonamides accounted for 43.3% and NSAIDs for 30.7% of FDE; Urticaria was caused mainly by NSAIDs (24.3%) and penicillins (20%). Anticonvulsants were responsible for 43.8% of life-threatening reactions-TEN and SJS.

To study the changing clinical reaction patterns and the causative drugs over a period of 6 years, the results were tabulated year wise. The statistical analysis was done by using linear trend analysis. It shows –2.6 times decreasing incidence of sulfonamide induced reaction and +1.1 times increasing incidence of

reactions to fluoroquinolones. Among the anticonvulsants phenytoin shows +1.5 times increasing incidence and carbamazepine +3.7 times increasing incidence-of-reactions. Sharma et al was also observed that adverse drug reactions were due to antimicrobials 42.6%, anticonvulsants 22.2%, NSAIDs 18% among the 500 patients of adverse drug reactions. Among the 14% cases of urticaria, 24.3% were due to NSAIDs and 20% were due to penicillin.[5]

Ahmad et al done a study where, life-threatening cutaneous adverse drug reaction, TEN was developed by sparfloxacin. TEN is known to occur with the fluoroquinolones. However, the incidence of sparfloxacin induced TEN is very low, with only four cases having been reported to the WHO database. Ahmad et al reported one more case. A 17-year-old boy with a three-day history of cough and fever was treated with sparfloxacin 400 mg on day one and 200 mg on the following two days. On day three of treatment the patient was hospitalized at their centre for an extensive blistering rash and involvement of the eyes, oral and nasal mucosa. He had greater than 60% cutaneous detachment and was diagnosed as drug induced toxic epidermal necrolysis (TEN). Except for electrolyte imbalance, all the hematological tests and liver and renal functions were within normal limits. Sparfloxacin was stopped and the patient was treated with injections of pheniramine maleate and methyl prednisolone 1 g o.d. intravenously for 4 days. The oral mucosa was treated with metronidazole 1% gel and chlorhexidine mouth wash. Oral prednisolone 40 mg o.d. was begun on the fifth day of admission and was continued until day 19, with constant monitoring of the patient's condition in an intensive care area. Based on culture sensitivity reports, he was treated with various injectible antibiotics during his hospital stay. These included amoxicillin + sulbactam 1.5 g b.i.d., ceftriaxone 1 g b.i.d., cefoperazone 1 g b.i.d. and gentamicin 120 mg o.d. on different days. During this period he was gradually improving, but on the day 22 of hospitalization, he died of suspected pulmonary emboli. The causality assessment of the reaction was 'probable' by both the WHO probability scale and Naranjo's ADR probability scale. A 50-year-old man was admitted for treatment of a posterior fossa cyst with hydrocephalus. It was planned to do a ventriculoperitoneal (VP) shunt for rapid relief of pressure symptoms, followed by endoscopic decompression of the cyst through the fourth ventricle in the same admission, but different sitting. Phenytoin was started after VP shunt was done. However, two days later, the patient started developing an erythematous rash, beginning in the perioral and periorbital areas, which spread to involve the whole trunk and limbs centrifugally over the next one day. Over 50% of the total surface area was involved. Next day, wrinkling and sloughing of the skin began and sloughing could be provoked by gentle stroking of the skin (Nikolsky's sign), even in areas apparently uninvolved. Large flaccid bullae developed and exfoliation continued in large sheets over the front and back of trunk, leaving behind denuded areas of red, glistening, but non-purulent skin. Since he was being treated with multiple drugs, including netilmycin, chloramphenicol, phenytoin, and NSAIDs, drug eruption was considered a strong possibility and all medications were stopped. In consultation with dermatologists, he was managed with topical antibiotics for the skin, eyes, and oral cavity, along with systemic steroids. Prophylactic intravenous antibiotics (vancomycin, levofloxacin, and piperacillin-tazobactam) were added when the patient developed fever after one week of illness. High dose cyclophosphamide/cyclosporin/intravenous immunoglobulin were considered in treatment but were not used in view of their side effects and improvement in patient's condition with the ongoing treatment. Multiple cultures from blood and raw areas of skin were either sterile or grew multiple contaminants. Other drugs were slowly restarted but phenytoin was replaced with sodium valproate. Care was taken to maintain the fluid and electrolyte balance.

A morbilliform rash is the most common reaction to phenytoin, occurring in as many as 5% of cases overall. However, a wide variety of cutaneous reactions can occur, including acneiform lesions, exfoliative dermatitis, erythema multiforme, SJS, vasculitis, gingival hyperplasia, heel pad thickening, and lupus like reaction. In a hospital-based adverse drug reaction reporting program from an Indian tertiary care hospital, phenytoin was the individual drug most frequently reported as a cause of adverse drug reaction. As calculated by Naranjo's adverse drug reaction probability score, the causable relationship between phenytoin and TEN in our case is 'probable'. TEN can also occur as a complication of other drugs. Steroids are the treatment of choice in severe cases, to limit the inflammatory process, along with prophylactic systemic and topical antibiotics. If severe drug reactions such as TEN occur, the suspected drugs, including antiepileptic drugs (AED), should be stopped immediately. A new AED can be started, if necessary, before the resolution of the rash without increasing the risk of further reactions. [6]

Conclusion and recommendations

Although some cutaneous drug reactions may not cause any significant harm to an individual and may cure spontaneously or require very minimum treatments but some are dangerous enough to cause serious harmful effects on the body even may lead to death if not diagnosed early and not promptly and efficiently treated. Hence, each of these cutaneous reactions are to be considered with great importance as it may cause deleterious effect on the working capability. To reduce the cutaneous drug reactions the following are the recommendations:

- The person must be meticulous about taking the drugs.
- Injudicious use of the drugs should be avoided.
- Drug having adverse effects should be carefully considered before prescribing to any diseased and co-morbid person.
- Careful history should be taken about any drug allergy on a particular drug on any previous occasions.
- Individual should stop the drug immediately and report to the doctor as early as possible when he develops any cutaneous lesions.
- Disposal and instruction given by dermatologist regarding individual's cutaneous reactions should be followed by individual and authority should supervise it.

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AWARENESS ON BREAST FEEDING AMONG READYMADE GARMENTS (RMG) WORKING WOMEN IN DHAKA CITY

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Abstract

Back ground: Breast-feeding is the unique source of nutrition that plays an important role in the growth, development and survival of infants. There are lots of readymade garments working (RMG) women in Dhaka city who have poor facilities for their child's breast feeding which is not only a National issue but also an International issue. Objective: To identify the awareness on breast feeding among RMG working women in Dhaka city. Methods: Descriptive Cross Sectional study was conducted among RMG Women in Dhaka City, aged 15–49 years. The study conducted in Readymade Garments factory at Mirpur Police station area in Dhaka city during the period of January 2009 to June 2009. The sample size for the cross sectional study was calculated by using Z test and it was 625. Result: About 94.5% of the mothers attempted breastfeeding. At 1 month, 71.6% were still breastfeeding, 49.6% continued to do so at 2 months, and 29.8% persisted till 4 months. By 6 months, the breastfeeding prevalence rate fell to 21.1%. The median duration of breastfeeding was 7.0 weeks and the mean duration was 12.7 weeks. The median duration of breastfeeding was shorter than the mean duration as the proportion of mothers who continued breastfeeding was smaller than that of mothers who stopped breastfeeding; and among those who persisted, their average duration were longer. Among the mothers who attempted breastfeeding, the shortest duration was 0.5 weeks, while 21.1% were still doing so at the end of 6 months. Conclusions: Many women would also find it useful to have more flexible working hours. In some work settings, giving women with young infants extra flexibility in work hours might be a low-cost and effective intervention

Keywords: *Postnatal care, Reproductive health services, Exclusive breast Feeding, Complimentary food.*

Introduction

Breast-feeding is the unique source of nutrition that plays an important role in the growth, development and survival of infants. The benefits of breast-feeding, especially exclusive breast-feeding, are well established [1,2] .Particularly in poor environments, where early introduction of other milk is of particular concern because of the risk of pathogens contamination and over dilution of milk leading to increased risks of morbidity and under nutrition.

Breast-feeding is promoted internationally as the preferred method of feeding infants up to 4-6 months and continued up to two years with the addition of home cooked food [3, 4]. In Bangladesh, only 14 per cent of infants were exclusively breastfeed up to 3 months. Though a number of studies have been done on breast-feeding in Bangladesh [5-8], none pointed out factors influencing duration of breast-feeding.

The proportion of Bangladeshi women initiating breast-feeding is relatively low [6-8]. The duration of breastfeeding largely determines how much this form of feeding has a favorable influence on infectious diseases prevention, child development and survival. Working women should be informed through health personnel and communication media, about the benefits of exclusive breastfeeding and about maternity entitlements. Provision of facilities to support breastfeeding in the workplace must also be encouraged so that maternal employment does not hamper breastfeeding. There are lots of RMG working women in Dhaka city who have poor facilities for their

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child's breast feeding which is not only a National issue but also an International issue

Material and Methods

Study design
Descriptive Cross Sectional study.

Study place
Mirpur police station area, Dhaka.

Study population
The study was conducted among Readymade Garments Working Women in Dhaka City, aged 15–49 years.

Study period
January– June'2009

Sample size
Sample size of 625 was obtained from the study area

Sampling Technique
Sample size for the cross sectional study was calculated by using Z test

Ethical implication
As the study was conducted in the garment factories, first of all a written permission was taken from the factory authority. Then both verbal and written consent was taken from the respondent RMG working women aged 15-49 years.

Data Collection instrument
A questionnaire was prepared as a research instruments in such a way that the interview could flow as naturally as possible. They were designed according to objectives of the study and were made simple and easily understandable manner. The questionnaire was pre-tested on a small number of respondents at Mirpur, Dhaka similar to the study population to identify and difficulty for understanding by the respondents. Then modified and finalized the questionnaire for data collection.

Data collection technique
Proportionate cluster sampling method was used. Five clusters were identified and one was randomly selected. All the Garments working women relate to our purpose and inclusion criteria in the selected cluster was included in the study.

Data processing and analysis
After completion of data collection data were processed and edited manually to reduce error. Both descriptive and analytical statistics were done by SPSS (11.5 versions)

Results

This was a cross sectional type of descriptive study. A total of 625 respondents' samples from January to June' 2009 was taken and studied. All data were taken, managed and analyzed. The demographic profile of the mothers is given in Table 7. Of the 625 mothers, the mean age of the mothers was 30 years (range 18–45 years). All the respondents were working. About 94.5% of the mothers attempted breastfeeding. At 1 month, 71.6% were still breastfeeding, 49.6% continued to do so at 2 months, and 29.8% persisted till 4 months. By 6 months, the breastfeeding prevalence rate fell to 21.1%. The median duration of breastfeeding was 7.0 weeks and the mean duration was 12.7 weeks. The median duration of breastfeeding was shorter than the mean duration as the proportion of mothers who continued breastfeeding was smaller than that of mothers who stopped breastfeeding; and among those who persisted, their average duration were longer. Among the mothers who attempted breastfeeding, the shortest duration was three days, while 21.1% were still doing so at the end of 6 months. The data showed that exclusive breastfeeding at any time between delivery and 6 months is not a common practice. For most mothers, breastfeeding was combined with supplementary feeds of powdered milk.Univariate analysis showed that ethnicity, age, educational attainment, religion, household income, working status, household living arrangement, total number of children, previous breastfeeding experience, number of babies delivered, length of mother's stay in hospital after delivery, length of baby's stay in hospital after delivery, baby's sex, whether baby had jaundice, perception of breastfeeding, ability to cite benefits of breastfeeding and advice on breastfeeding received from health professionals during pregnancy were factors related to breastfeeding 2 months after delivery. As some of these factors were inter-related, multivariate analysis was performed using continued breastfeeding as a dependent variable. The results of the multivariate analyses for predicting breastfeeding at 2 months are shown in Table 8. Interaction effects were investigated and were not included in the analyses as they did not result in a significant improvement of the model. The results of the multivariate analyses for predicting breastfeeding at 6 months are shown in Table 9. The inclusion of any interaction term did not result in a significant improvement over the 'main effects' model and hence were not included in the final multivariate model for breastfeeding at 6 months.

Unlike the earlier model for breastfeeding at 2 months, ethnicity and age ceased to be significant in the current model for predicting continued breastfeeding at 6 months. Instead variables such as baby's sex, whether baby had jaundice and mother's perception of breastfeeding were found to provide significant predictive information about continued breastfeeding at 6 months.

Table-I

Distribution by the respondents' Marriage Age

Marriage Age	Frequency
<16	88
>16	494

Table-II

Distribution by the respondents' No. of Children

No. of Children	Frequency
None	0
One to two	62
Three	520
Four	0
More	0

Table-III

Distribution by the respondents' Spouse's Education

Spouse's Education	Frequency
Graduate	3
Under grad	52
School	527

Table-IV

Distribution by the respondents' Relationship with Children

Relationship with Children	Frequency
Happy	400
Satisfactory	120
Strained	62

Table-V

Distribution by the respondents' Food Habits: Timings

Food Habits: Timings	Frequency
Regular	551
Irregular	21
Misses meals	10

Table-VI

Distribution by the respondents' awareness about breast feeding over radio/ TV/ health workers :

Awareness about breast feeding	Frequency
Radio	551
TV	120
Health workers	50

TableVII

Demographic profile of respondents (n = 625)

Demographic profile	*n*	%
Age group		
19 years and below	65	1.8
20–29 years	171	36.7
30–39 years	292	56.5
40–45 years	54	5.0
Religion		
Buddhism	0	0
Islam	474	29.9
Christianity	10	17.6
Hinduism	98	4.6
Education		
Primary	255	40.8
Secondary	277	44.32
Post-secondary	38	6.08
Illiterate	55	8.8
Household income		
Refusal to answer	43	10.1
Below 2000	149	26.6
2000–3999	299	45.8
4000–5999	72	14.6
6000–7999	42	9.1
8000–9999	17	4.0
10 000 and over	3	.7

Table-XIII

Predictors of continued breastfeeding at 2 months using multivariate stepwise logistic regression analyses

Variable	Exponential (B)	95% interval confidence exponential (B)	B for	Standard error
20–29 years	1	–	–	–
19 years and below	0.41	0.19, 0.91	– 0.88	0.40
30–39 years	1.30	1.04, 1.61	0.26	0.11
40–45 years	1.24	0.77, 1.99	0.21	0.24
Primary	1	–	–	–
Secondary	1.86	1.37, 2.51	0.62	0.15
Post-secondary	2.90	2.05, 4.09	1.06	0.18
Buddhism	0	–	–	–
Christianity	2.44	1.80, 3.32	0.89	0.16
Islam	6.69	2.69, 16.65	1.90	0.47
Hinduism	2.08	0.82, 5.31	0.73	0.48
Breastfed other babies	1	–	–	–
Did not breastfed other babies	0.31	0.21, 0.48	– 1.17	0.22
No experience as this is 1st baby	0.87	0.70, 1.08	– 0.14	0.11
Not able to cite any benefit of breastfeeding	1	–	–	–
Able to cite at least 1 benefit	2.45	1.72, 3.50	0.90	0.18
Did not receive advice on breastfeeding from health professionals during pregnancy	1 0.78	– 0.64, 0.94	– – 0.25	– 0.10
Received advice on breastfeeding				

Cox and Snell R^2 = 0.19.

Table-IX

Predictors of continued breastfeeding at 6 months using multivariate stepwise logistic regression analyses

Variable	Exponential (B)	95% interval confidence exponential (B)	B for	Standard error
Primary	1	–	–	–
Secondary	1.54	1.02, 2.34	0.43	0.21
Post-secondary	2.83	1.79, 4.49	1.04	0.24
Buddhism	0	–	–	–
Christianity	2.60	1.80, 3.75	0.96	0.19
Islam	2.39	1.68, 3.41	0.87	0.18
Hinduism	1.45	0.79, 2.65	0.37	0.31
Breastfed other babies	1	–	–	–
Did not breastfed other babies	0.26	0.13, 0.54	– 1.34	0.37
No experience as this is 1st baby	0.75	0.58, 0.95	– 0.29	0.13
Female baby	1	–	–	–
Male baby	0.78	0.62, 0.98	– 0.26	0.12
Jaundice	1	–	–	–
No jaundice	0.74	0.57, 0.95	– 0.30	0.13
Bottle feeding or combination of breastfeeding and bottle feeding deemed as best feeding method	1	–	–	–
Breastfeeding deemed as best feeding method	3.18	1.74, 5.82	1.16	0.31
Not able to cite any benefit of breastfeeding	1	–	–	–
Able to cite at least 1 benefit	1.74	1.00, 3.00	0.55	0.28
Did not receive advice on breastfeeding from health professionals during pregnancy	1	–	–	–
Received advice on breastfeeding	0.68	0.53, 0.86	– 0.39	0.12

Cox and Snell *R*2 = 0.15.

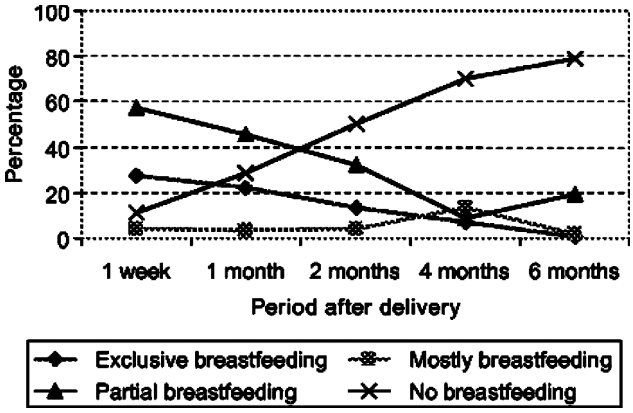

Fig. 1: *Type of infant feeding practices adopted by respondents.*

Discussion

It is important continuously to point out that breastfeeding is a woman's right and that society must adapt to this crucial need rather than forcing women to adapt to the sometimes impossible demands placed on them. But the experiences of a breastfeeding promotion project in Panama should caution us not to forget the limitations of such idealistic statements. It was stated in the evaluation of the working women component: "..as long as the activities are principally educational, they are seen as harmless. Trying to get support for enforcement of laws would be substantially more controversial and difficult to obtain".

Often, working women do not perceive it as appropriate to take very young infants to work with them. Due to high costs of housing, poorer women often live far from work, and have to travel on crowded, noisy busses. Constraints of this type probably cannot be overcome by heightened awareness of the importance of exclusive breastfeeding. For example, the Tanzania Food and Nutrition Centre established an on-site day care center in 1979 "to enable TFNC staff to breast feed their children while on duty...and to act as an example to government and organizations." However, a 1988 evaluation noted that no children under the age of 12 months had been brought to the center. There are also situations in which the work place is an unsafe place for an infant—and can even contaminate the milk of women who work and breast feed. Crèches at the work place tend to cater to older children and thus would have little impact on breastfeeding. In fact, personnel at day care centers often do not want to accept breast-fed infants unless a bottle is left to feed them in case they get hungry before the mother returns.

Breastfeeding breaks are worth struggling to obtain only when they are sought after by working women. Often women do not work close enough to their babies to find such breaks useful unless they can be combined and used as a way to leave work early. It would be more straightforward in such a case to just allow breastfeeding mothers to work a shorter day.

Many women would also find it useful to have more flexible working hours. In some work settings, giving women with young infants extra flexibility in work hours might be a low-cost and effective intervention. In others it might be nearly impossible for employers to implement. The right to various combinations of fully paid; partially paid and unpaid leaves would probably allow most women to combine optimal breastfeeding with working in the way that best met their economic circumstances and career goals.

The recommendations are:

1) Maximum flexibility or choice should be allowed to the woman so that the only leave taken before delivery is that which is really needed. (Most health professionals support women's common preference to work up to nearly the date of delivery, except in certain states of ill health.) This allows the bulk of leaves to be taken after delivery.

2) At least four but preferably six months leave should be provided at nearly full pay, to enable women to practice exclusive breastfeeding during this period. Employers should not be asked to pay for this, or if they do, should be given tax credits for it.

3) A small sum of money could be provided to women who wanted to take a longer leave than this, at least for a few months, with no risk of losing their job or their seniority.

4) Flexible and/or shorter working hours for another period of time, should be provided for those women who want it, especially if the total length of the maternity leave is less than four months.

5) Paternity leaves should be encouraged for men to be present at the time of delivery and to assist at home during the time of mother's recovery. In several countries parental leave is offered after the maternity leave and the father is encouraged to spend time at home later in his infant's life. Besides the obvious benefit for mother, father and child, parental leaves would help reduce the bias against hiring women.

6) The study explored the substantial improvement in the selected health parameters including nutritional status, receiving of preventive health

services or awareness or improvement of socioeconomic condition.

7) The findings relate to the awareness of the Garments workers of deteriorating water supply and sanitation, and personal hygiene was a matter of concern and needs to be addressed in future programs.

8) Information obtained will also be used to design awareness raising and behavior change program by the NGOs and government for the services.

9) Proper utilization of care and services will lead to a better service and thereby decrease maternal mortality and morbidity. This will ultimately lead to build a healthy nation.

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COMPARABLE EFFICACY OF TERBINAFINE AND ITRACONAZOLE IN THE TREATMENT OF TINEA PEDIS

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Abstract

Background: Tinea pedis (athlet's foot) is the most common fungal infection. Relapse is common in tinea pedis and may be result of recurrence following inadequate treatment or reinfection.

Objective: To evaluate the comparable efficacy of terbinafine and itraconazole in the treatment of tinea pedis.

Methods: 120 patients of tinea pedis confirmed by KOH microscopy were included in the study. The study was carried out in three different Hospitals and Private Chambers for a period of 3 years from July 2006 to June 2009. Mean age of the patients was 40.28±10.23. The patients were devided into 2 equal group:A & B. Group- A was given terbinafine 250 mg/day and group-B was given intraconazole 200 mg/day for 2 weeks.

Results: Follow up 2 weeks after cessation of therapy revealed clinical and mycological cure of 93.3% in terbinafine group and 86.6% in itraconazole group.

Conclusion: Efficacy analysis revealed that terbinafine is superior than itraconazole in the treatment of tinea pedis (P value 0.224).

Key words: *Terbinafine, Itraconazole, Treatment outcome, Tinea pedis.*

Introduction

Tinea pedis (Athlet's foot) is the most common fungal infection that causes scaling, flaking and itching of affected areas. Tinea pedis is contagious and can be passed through direct contact or contact with items such as shoes, stocking and shower or pool surfaces.There are several distinct forms encountered in clinical practice:

a. Interdigital type - toe web space infection in which the interdigital toe clefts become fissured, macerated and itchy and is the most common presentation of tinea pedis. The changes frequently recur endlessly following treatment.

b. Papulosquamous type - scaly papular lesions on dorsum of the feet and may also involved plantar aspect.

c. Hyperkeratotic type - minute papules with well demarcated erythema on margin, fine white scaling and hyperkeratosis confined to heels, soles and lateral border of feet.

d. Vesico-bullous type - occurs particularly on the soles and sides of the feet. These may widespread and confluent leading to quite big blisters. The areas are generally extremely itchy.

e. Mixed type - combination of above presentation.[1,2]

Male are affected more than female and 20-50 years age group is commonly affected. Relapse is common in tinea pedis and may be the result of inadequate treatment or reinfection.[3]

There are many conventional treatments such as topical antifungal agent, which can take the form of

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spray, powder, cream, gel or lotion and oral medication as griseofulvin, fluconazole, itraconazole, terbinafine, ketoconazole etc. Topical therapy sometimes are effective but recurrence is more after stopping.[4] There have been many reports on the therapeutic effects of oral terbinafine and itraconazole on tinea pedis. However till now no reports on these drugs have published in Bangladesh. So this study has been designed to evaluate the comparable efficacy of terbinafine and itraconazole in the treatment of tinea pedis.

Patients and Methods

Over a 3 year period from July 2006 to June 2009, 120 patients of tinea pedis aged 20-60 years were studied in the Department of Dermatology & Venereology at Bangabandhu Sheikh Mujib Medical University, Combined Military Hospital and Shaheed Suhrawardy Hospital and 3 Private Chambers, Dhaka, Bangladesh. The cases were taken based on clinical feature and KOH examination. Routine hematological and KOH examination were done at the start of treatment and at 6 week follow up end point. 80 male and 40 female of whom, 40 had papulosquamous type, 38 had intertriginous type, 30 had hyperkeratotic type and 12 had mixed type. The patients were randomly devided into 2 equal groups. Group-A was given terbinafine 250mg/day and itraconazole 200mg/day in group-B for 2 weeks. All patients had given informed written consent. The patients were excluded from the study if they were pregnant, nursing mother, age below 20 and above 60 years, sensitivity to terbinafine and itraconazole, patients who used any other antifungal (topical/systemic) within a week before initiating this treatment, taking medications that could interfere with trial drugs and having serious systemic illness.

Outcome measures were evaluated weekly during treatment and 2 weeks after cessation of therapy and then the patients (those cured) were followed up for 3 years to see the relapse.

Cure means resolution of signs & symptoms and –ve KOH microscopy.

Relapse means reappearance of signs and +ve KOH microscopy.

Demographic data of the patients and clinical findings and clinical response are summarized in table-I to V.

Results

120 patients (80 male and 40 female) of 20-60 years age group were included into this study. Mean age of the patients was 40.28±10.23 (Table-I). The duration of the disease ranged from less than 3 months to more than 6 months. The mean duration in group-A was 4.21±2.14 and in group-B was 4.83±2.77. Maximum patients (36.66%) in this study were in 3-6 months duration folllwed less than 3 months (35.83%) in table-II. In our study papulosquamous type was more 40 (33.33%) followed by intertrigenous 38 (31.66%). Mixed type was least variant 12 (10%) followed by hyperkeratotic 30 (25%) (Table III). The rate of clinical and mycological cure was found in 56 (93.3%) cases in Group A and 52 (86.6%) in group- B at the follow up end point (6 weeks after starting treatment). In total treatment produced cure in 108 (90%) and no cure in 12 (10%) cases. The severity of the clinical signs and symptoms decreased from baseline to treatment end point and to the treatment end point to follow up end point in both group. The tolerability of study medication was rated good in almost all patients. The patients (those cured) were followed up for 3 years to see the relapse. At 1 year, 12.5% had a relapse, at 2 year, 16.07% had relapse and at 3 year, 17.86% had relapse in group-A and in group- B, 17.30%, 21.15%, 23.07% had relapse at 1,2, and 3 year respectively.

Table I

Age and Sex incidence (N=120)

Age in	Male		Female	
years	Number	Percentage	Number	Percentage
20 – 30	15	12.50	08	6.66
31 – 40	20	16.66	10	8.33
41 – 50	35	29.16	18	15
51 – 60	10	8.33	04	3.33
Total	**80**	**66.66**	**40**	**33.33**

Mean age 40.28±10.23

Table-II

Duration of the disease (N=120)

Duration in months	Male		Female		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
<3 months	28	23.33	15	12.5	43	35.83
3–6months	30	25	14	11.66	44	36.66
>6 months	22	18.33	11	9.16	33	27.5
Total	80	66.66	40	33.33	120	100

Table III

Clinical pattern of Tinea Pedis (N=120)

Clinical pattern	Group A N= 60	Group B N= 60	Total N= 120
Papulosquamous	20 (33.33%)	20 (33.33%)	40 (33.33%)
Interginous	19 (31.66%)	19 (31.66%)	38 (31.66%)
Hyperkeratotic	15 (25%)	15 (25%)	30 (25.00%)
Mixed	06 (10%)	06 (10%)	12 (10.00%)
Total	60 (100%)	60 (100%)	120 (100%)

Table IV

Clinical response in Tinea Pedis

Clinical pattern	Clinical response in Group A (N=60)	Clinical response in Group B (N=60)
Papulosquamous (20)	20 (100%)	20 (100%)
Interginous (19)	19 (100%)	17 (89.47%)
Hyperkeratotic (15)	13 (86.66%)	12 (80%)
Mixed (06)	04 (66.66%)	03 (50%)
Total	56 (93.3%)	52 (86.6%)

Table V

Relapse of Tinea Pedis

Clinical pattern	Group A Terbinafine (N=56)			Group B Itraconazole (N=52)		
	1st year	2nd year	3rd year	1st year	2nd year	3rd year
Papulosquamous	3	3	3	2	3	3
Interginous	2	2	3	3	3	4
Hyperkeratotic	2	3	3	3	4	4
Mixed	0	1	1	1	1	1
Total	7 (12.5%)	9(16.07%)	10 (17.86%)	9 (17.30%)	11 (21.15%)	12 (23.07%)

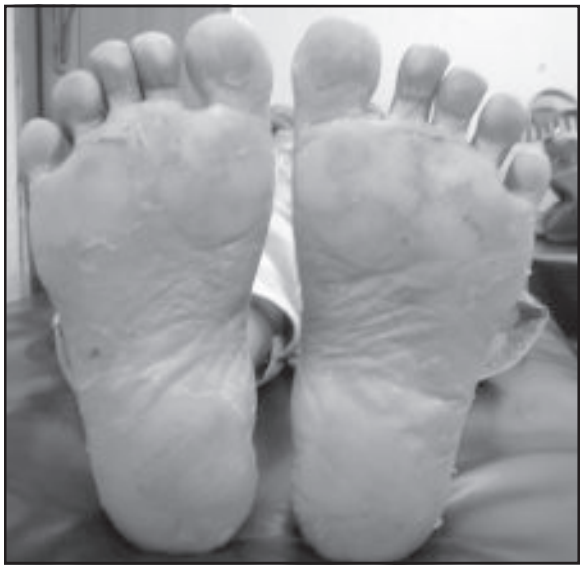

Fig 1a: *Hyperkeratotic type (Before treatment)*

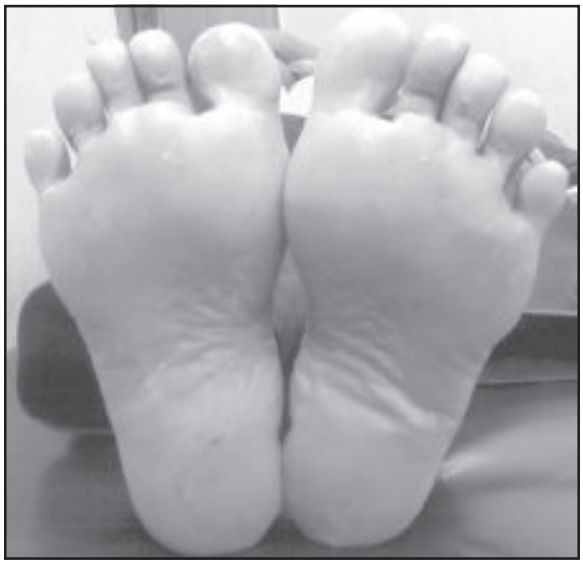

Fig 1b: *Hyperkeratotic type (After treatment)*

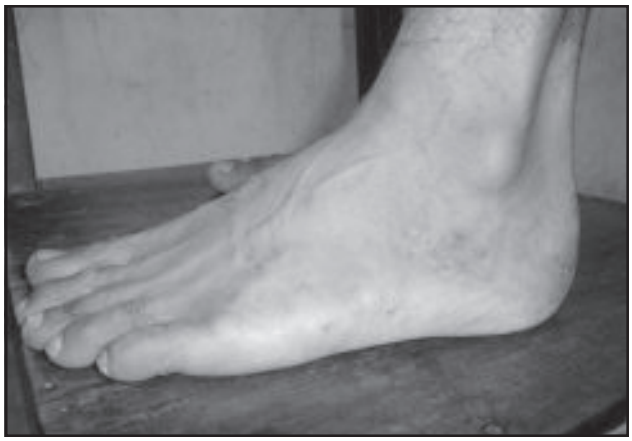

Fig 2a : *Papulosquamous type (before treatment)*

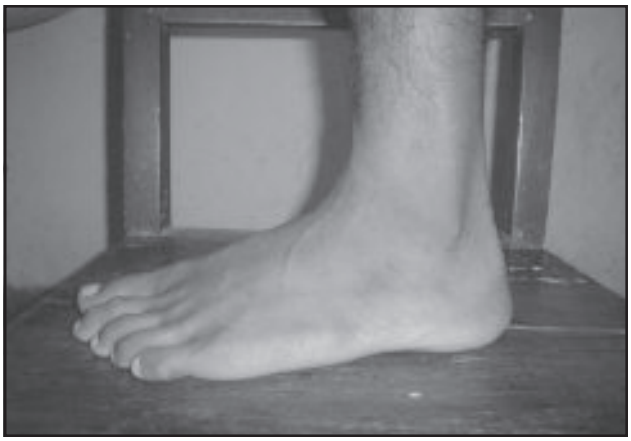

Fig 2b : *Papulosquamous type (after treatment)*

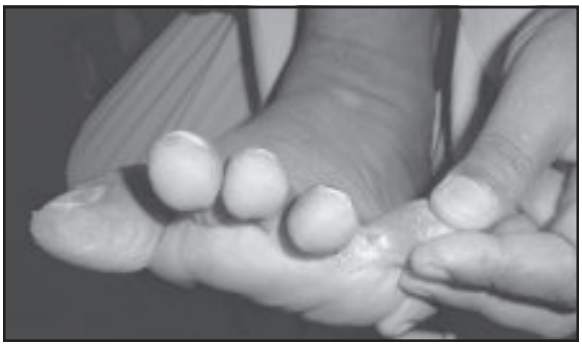

Fig 3a: *Interdigital type (before treatment)*

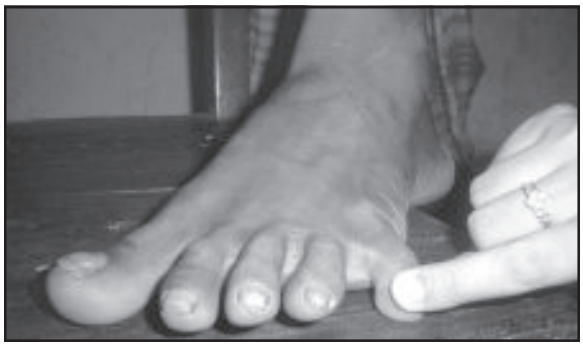

Fig 3b: *Interdigital type (after treatment)*

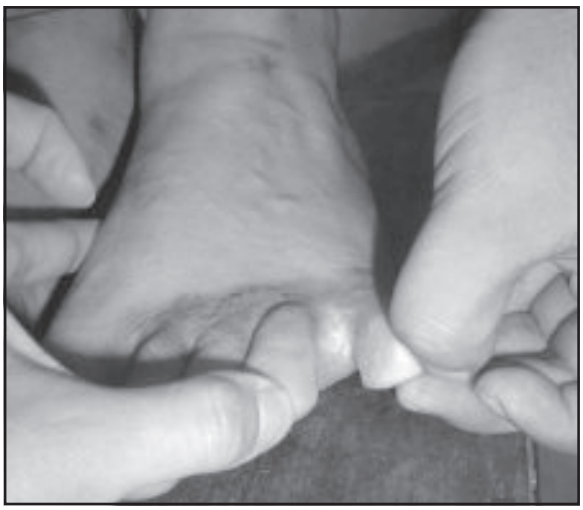

Fig 4a: *Mixed type (before treatment)*

Fig 4b: *Mixed type (after treatment)*

Discussion

Tinea pedis is the most common fungal infection. It may last for a longtime and may come back after treatment. The affected areas are usually itchy, painful or asymptomatic. It ranges from mild to severe. They may persist or recur but they generally respond to treatment. Longterm medication and preventive measures may be needed. There are several forms of tinea pedis such as papulosquamous, hyperkeratotic, intertriginous, vesico-bullous, mixed type etc.[1,3]

In this study, we have taken papulosquamous type, intertriginous type, hyperkeratotic type and mixed type in both the group A and B. Group-A was given terbinafine 250 mg daily and intraconazole 200 mg

daily in group-B for 2 weeks. Terbinafine is a synthetic allaylamine, inhibits ergosterol synthesis by inhibiting squalene epoxidase. It is known that accumulation has a biocidal effect on dermatophyte. In short, terbinafine has both mycostatical and biocidal effects on dermatophyte in general. The effectiveness of itraconazole can be attributed to its high tissue affinity and persistence in the stratum corneum for upto 4 weeks after discontinuation of therapy.[2]

In the present study total 120 patients were involved. Male 80 (66.66%) were predominant in the study than female 40 (33.33%) which is consistent with other study done by Lachapelle JM et al.[4] The age of the study population ranged from 20-60 years and maximum patients in our study were in 41-50 years age group 53 (44.16%) followed by 31-40 years age group 30 (25%) which is differing from other study done by Wishart J.M.[5] In this study, the duration of the disease were less than 3 months to more than 6 months, we found maximum number of patients were 3-6 months duration 44 (36.66%) followed by less than 3 months duration 43 (35.83%). This findings also is differing from other study done by Gupta A K et al.[6] In this study, most common clinical varients was found papulosquamous 40 (33.33%) followed by intertriginous 38 (31.66%) which is also differing from other study, where they found intertriginous type was most commonly found.[7]

Two groups of people were studied: guoup-A with terbenafine 250 mg daily and group-B with itraconazole 200 mg daily for 14 days. We evaluated weekly during treatment and 2 weeks after cessation of therapy. The clinical response was rated as cure 108 (90%) and no cure 12 (10%). The clinical response was found in papulosquamous type: 20/20, 20/20; intertriginous type: 19/19, 17/19; hyperkeratotic type: 13/15, 12/15; mixed type: 04/06, 03/06 in group-A and group-B respectively. In average 93.3% clinical inprovement was found in group-A and 86.6% in group-B.

Keysen De et al.[8] compared 2 weeks of terbinafine at 250 mg/day to 2 weeks of itraconazole at 100 mg/day in tinea pedis, they found terbinafine superior to itraconazole for clinical cure (94% vs 72.4%).Iwao Takinchi et al.[9] studied and found 89.3% improvement of tinea pedis with 1 week treatment with 250 mg terbinafine. A study done by Barnatson et al.[10] and found 72% improvement with 250 mg of terbinafine for 1 week in tinea pedis.

Hay et al.[11] compared 2 weeks of oral terbinafine (250mg/day) with 4 weeks of oral itraconazole (100mg/day) and cure of terbinafine group was 78% in tinea pedis.

Kagawa S[12] treated 184 patients with oral terbinafine (250mg/day) for 2 weeks and reported a clinical cure of 94%. Using similar regimen, White et al.[13] treated tinea pedis and found 86% improvement.

J. Schuller et al.[14] studied and found 63% improvement with 400mg/day for 1 week with itraconazole and 75% in 100mg/day with itraconazole for 1 month at the end of 6 weeks follow up period.

Gupta, A. K. et al.[15] found 81% improvement of tinea pedis with 400mg/day for 1 week and 75% with 100mg/day for 4 weeks with itraconazole at the end of 6 weeks follow up period.

E. Van Hecka et al.[16] experienced 85% cure rate with 100mg/day of itraconazole in tinea pedis for 1 month after 2 weeks of end of treatment.

E.M. Difonzo et al.[17] studied and concluded 82.2% cured with itraconazole 100mg/day for 30 days in tinea pedis.

R. Savin.[18] treated tinea pedis with 125mg of terbinafine twice daily for 6 weeks and found 88% improvement after 2 weeks follow up period.

Tausch I et al.[19] studied with a course of itraconazole 200mg twice daily for 07 days and terbinafine 250mg daily for 14 days in tinea pedis and revealed clinical improvement 80% in terbinafine group and 79% intraconazole group after follow up period of 6 weeks end point. So in comparing the other studies with our study revealed some of the studies are almost consistent with our result and some of the studies are slightly differing from our study.

The issue of recurrence versus reinfection must always be considered in patients with relapse. Our findings of 12.5% had relapse at 1 year, 16.07% at 2 year and 17.86% at 3 year in group A and in group B at 1 year, 2 year and 3 year had relapse 17.30%, 21.15% and 23.07% respectively suggest that reinfection is more likely than recurrence.

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DIETARY FIBRE INTAKE AND INFLUENCES ON RISK FACTORS REDUCTION IN CORONARY HEART DISEASE PATIENT

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Abstract:

Coronary heart disease is now one of the most common killer diseases in Bangladesh. . It is estimated that prevalence of the disease in the country is 6.8 million[1] and day by day this alarming statistics is becoming worse. The causes of coronary heart disease is related to multiple risk factors and most common factors are high cholesterol and triglyceride rich food intake, lack of fresh vegetables and fruits in diet, tobacco abuse, obesity, physical inactivity, high blood pressure, diabetes, excessive stress in work etc. Among these risk factors dietary habit is one of the most important modifiable factors that can prevent coronary heart disease in various ways. By making some simple lifestyle intervention like increase the amount of dietary fibre intake can reduce the risk of getting coronary heart disease and as well as can also causes risk reduction for development of major coronary events like heart attacks.

Key Words: *Coronary Heart Disease,Dietary fibre,Diabetes Melitus,Cholesterol.*

Introduction:

Dietary fibre is the indigestible portion of plant foods having soluble and insoluble portion. Soluble fibre dissolves in water to form a gel-like material which can help lower blood cholesterol[2] and glucose levels. Soluble fiber is found in oats, peas, beans, apples, citrus fruits, carrots, barley and psyllium but insoluble fibre promotes the movement of material through the digestive system and increases stool bulk, so it can be of benefit to those who struggle with constipation or irregular bowel habit.

Chemical structure of dietary fibre:

Chemically, dietary fiber consists of non starch polysaccharides such as arabinoxylans, cellulose and many other plant components such as dextrins, inulin, lignin, waxes, chitins, pectins, beta glucans and oligosaccharides.[3] A novel position has been adopted by the US Department of Agriculture to include functional fibres as isolated fiber sources that may be included in the diet.[3]

Observational findings:

An increasing number of observational findings have reported a lower incidence of coronary heart disease in subjects who consume diets high in fiber. Dietary fiber is thought to affect several cardiovascular disease (CVD) risk factors. Soluble fiber decreases serum total and low-density lipoprotein cholesterol concentrations and improves insulin resistance. The effect of fiber on inflammatory markers and coagulation is not yet well established. While soluble, gel-forming fiber has beneficially affected CVD risk factors, food sources of mainly insoluble fibers, primarily contributed by cereal products, have been the most consistently associated with lower incidence rates of CVD[4]. Despite the contradiction, the evidence promotes a food-based approach favoring increased intake of whole-grain cereals, fruit, and vegetables providing a mixture of different types of fibers for CVD prevention.

Risk factors for coronary heart disease:

Scientific position of American Heart Association regarding the major modifiable risk factors of coronary heart disease are tobacco smoking, high blood cholesterol, high blood pressure, physical inactivity, obesity and overweight, diabetes mellitus etc(3).The Framingham Heart Study results demonstrated that the higher the cholesterol level, the greater the risk

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of coronary artery disease; alternatively, coronary artery disease was uncommon in people with cholesterol levels below 150 mg/dL. In 1984, the Lipid Research Clinics-Coronary Primary Prevention Trial revealed that lowering total and low density lipoprotein (LDL) or bad cholesterol levels significantly reduced coronary artery disease. More recent series of clinical trials using statin drugs have provided conclusive evidence that lowering LDL cholesterol reduces- (1) the rate of myocardial infarction, (2) the need for percutaneous coronary intervention, and (3) the mortality rate associated with coronary artery disease-related causes[5].

Dietary fibre for elderly people:

People older than 65 years are the fastest-growing segment of the population and account for the majority of cardiovascular disease (CVD) morbidity, mortality, and health care expenditures. Additionally, the influence of dietary habits on risk may be less pronounced in elderly persons, when atherosclerosis is more advanced. A study conducted on elderly people showed that higher cereal fiber intake was associated with lower risk of total stroke and ischemic stroke and a trend towards lower risk of ischemic heart disease death. In a post hoc analysis, dark breads such as soya bean, wheat, rye, or pumpernickel were associated with a lower risk of CVD incident rather than cereal fiber from other sources. Cereal fiber consumption late in life is associated with lower risk of CVD[6] supporting recommendations for elderly individuals to increase consumption of dietary cereal fibre.

Daily requirements:

American Dietetic Association recommends that public should consume adequate amounts of dietary fiber from a variety of plant foods and intake should be 20-35 g/day for healthy adults and age plus and 5 g/day for children. These requirements are not always fulfilled because intakes of good sources of dietary fiber, fruits, vegetables, whole and high-fiber grain products, and legumes are low. Consumption of dietary fibers that are viscous lowers blood cholesterol levels[7] and helps to normalize blood glucose and insulin levels, making these kinds of fibers part of the dietary plans to treat cardiovascular disease and type 2 diabetes. North Americans consume less than 50% of the dietary fiber levels recommended for good health. In the preferred food choices of today's youth, this value may be as low as 20%, a factor considered by experts as contributing to the obesity crisis seen in many developed countries.[8,9]

Mechanism of action of dietary fibre:

When soluble fiber is fermented, short-chain fatty acids (SCFA) are produced. SCFA are involved in numerous physiological processes promoting health, stabilize blood glucose levels by acting on pancreatic insulin release and liver control of glycogen breakdown .SCFA can also stimulate gene expression of glucose transporters in the intestinal mucosa, regulating glucose absorption and thus can prevent diabetes progression.[10] It can also suppress cholesterol synthesis by the liver and reduce blood levels of LDL cholesterol and triglycerides responsible for atherosclerosis.[11] A pooled analysis of cohort studies[12] suggest that dietary fibre can reduce the risk of coronary heart disease (CHD) through a variety of mechanisms, such as improving blood lipid profiles,[13,14,15] lowering blood pressure,[16,17] and improving insulin sensitivity[18,19] and fibrinolytic activity[20]. Dietary fiber has been found to be inversely associated with the with risk factors for CHD in observational studies.[21,22,23,24]. The association between dietary fiber and CHD incidence has been examined in at least 10 prospective cohort studies.[21,25-33] All but one[30] of these studies reported an inverse association. with risk of CHD in both men and women. The associations were stronger for coronary mortality (27% reduction in risk for each 10-g/d increment in total dietary fiber) than for all events (14% reduction in risk). Although cereal and fruit fiber had strong inverse associations with CHD risk, no such associations were observed for vegetable fiber. These associations seemed to be independent of other dietary factors, sex, age, and baseline body mass index, and smoking, history of hypertension, diabetes, and hypercholesterolemia.

Dietary fibre and Obesity:

Obesity is another important risk factor when we think about the prevention of coronary heart disease. Fiber intake is inversely associated with weight and waist circumference change[34]. In a prospective cohort study with 89,432 European participants, aged 20-78 year, who were free of cancer, cardiovascular disease, and diabetes at baseline and who were followed for an average of 6.5 year showed that for a 10gm/day higher total fiber intake can significantly changed weight and waist circumference. Fruit and vegetable fiber was not associated with weight change but had a similar association with waist circumference change when compared with intake of total dietary fiber and cereal fiber.

Dietary fibre and Diabetes:

Diabetes is a potential risk factor for dyslipidemia and generealized atherosclerotic plaque forming

metabolic disease, which control remains the main step for preventing coronary heart disease. According to a number of observational studies, consumption of foods containing fiber has been associated with a reduced risk of type 2 diabetes[35]. Dietary fiber is thought to play an important role in the reducing the risk of diabetes and nutritionally managing the disease by helping to normalize the glucose response and decrease insulin concentration and requirements. Higher intake (between 13-16 grams per day or greater) of dietary fiber, especially cereal fiber, has been consistently associated with lower risk of type 2 diabetes and improved insulin sensitivity[36-39]. While the exact mechanism for these effects related to nonviscous fibers are unclear, viscous fiber from oats, legumes, gums, and pectins has been found to significantly reduce the glycemic response by delaying gastric emptying and glucose absorption[40,41] Yet, studies support a stronger link between non-viscous fiber, mainly from whole grain foods, and reduced risk of developing insulin resistance and type 2 diabetes. One explanation for this difference is that the quantity of viscous fiber consumed in the average diet is insufficient to observe a significant effect on glycemic control[42]. In addition to fiber, other components of whole grains, including magnesium, vitamin E, phytic acids, and phenolic compounds, also may contribute to the decreased risk of type 2 diabetes[43,44] .Approximate intake of different types of fibre for risk factor reduction in coronary heart disease is a established fact. The studies conducted to date have found reduced coronary heart disease rates in individuals consuming certain sources of dietary fiber (cereal foods) and certain viscous fibers (gums such as oatmeal and barley and pectins such as apples, berries, and citrus fruits). This benefit is believed to be primarily a result of fiber's effects on interfering with cholesterol and bile acid absorption[45,] thus lowering blood levels of total cholesterol and low-density lipoprotein (LDL) cholesterol. Another proposed mechanism is the delayed absorption of fat and carbohydrate, which leads to increased insulin sensitivity and decreased levels of circulating triglycerides[35].

Observational findings:

An increasing number of observational findings have reported a lower incidence of coronary heart disease in subjects who consume diets high in fiber. Dietary fiber is thought to affect several cardiovascular disease (CVD) risk factors. Soluble fiber decreases serum total and low-density lipoprotein cholesterol concentrations and improves insulin resistance. The effect of fiber on inflammatory markers and coagulation is not yet well established. While soluble, gel-forming fiber has beneficially affected CVD risk factors, food sources of mainly insoluble fibers, primarily contributed by cereal products, have been the most consistently associated with lower incidence rates of CVD[5]. Despite the contradiction, the evidence promotes a food-based approach favoring increased intake of whole-grain cereals, fruit, and vegetables providing a mixture of different types of fibers for CVD prevention.

Dietary fibre and high blood pressure:

A recent American Dietetic Association position paper on dietary fiber and health also suggests other mechanisms, including fiber's affect on blood pressure and C-reactive protein, which are also biomarkers for cardiovascular disease risk[46]. Several studies have examined the effects of various fiber types (cereal, fruit, and vegetable) on the risk of coronary heart disease. Three large prospective studies, which were instrumental in setting current intake recommendations, found a strong relationship between cereal fibers and a weak or no relationship between vegetable and fruit fibers[26-28].

Dietary fibre and blood cholesterol level:

More recently, a pooled analysis of research confirmed that CVD risk was 10 to 30 percent lower for both men and women for each 10 gram per day increment of total, cereal or fruit fiber[47] Further investigation has revealed that the viscous fibers, including oat bran (betaglucan), psyllium, pectins, and guar gum, are most effective in reducing blood cholesterol levels. Two of these fibers, beta-glucan (from oats or barley) and psyllium have been sufficiently researched for the FDA to issue an approved health claim for soluble fiber and risk of coronary heart disease[(48,49)] Furthermore, soluble fiber sources from oats, barley, and pectin-rich fruits and vegetables provide lipid lowering benefits beyond those achieved by reducing intake of saturated fat and total fat alone[50]. The American Heart Association's 2006 Diet and Lifestyle Recommendations emphasize high-fiber foods, especially whole-grain products, legumes, fruits and vegetables, as part of an overall dietary pattern to reduce the risk of heart disease in the general population.[51] An added benefit observed with increasing fiber intake from whole grains, fruits and vegetables is preventing the rise in blood levels of triglycerides, a consequence often associated with a low fat, high carbohydrate diet[52].

Conclusion:

In summary, we can say that dietary fibre has been inversely associated with the cardiovascular risk

factors, atherosclerosis, and incident of cardiovascular disease. In light of the above evidences, policymakers, scientists, and clinicians should redouble efforts to incorporate clear messages on the beneficial effects of dietary fibre into public health and clinical practice endeavors.

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ORIGINAL ARTICLES

EVALUATION OF PRIMARY SCREENING TEST FOR PLATELET HOMEOSTASIS IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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Abstract:

This observational study was done on 50 cases of predialytic chronic kidney disease (CKD) patients. The aim of the study was to determination of total platelet count and bleeding time, comparison of the platelet count and bleeding time with the severity of chronic kidney disease. The mean age of the patients was 41.22±2.0 years, mean haemoglobin 4.96 ±0.32gm/dl , serum creatinine430.74± 11.92 µmol/L ,platelet count 246.50 ± 13.63x10^9/L and bleeding time were 4.13± 0.28 min respectively. Thrombocytopenia (<150x10^9/L) were found in 19(38%) cases. Bleeding time was prolonged (>9min) 6(12%) cases , among them only 4(8%) cases were thrombocytopenic. There was no significant relationship between platelet count and serum creatinine. No correlation was found between platelet count and bleeding time. No significant correlation was also found in Bleeding time and creatinine. Therefore, it can be concluded that platelet count is highly variable in chronic kidney disease and it is not a reliable screening test for bleeding diathesis in chronic kidney disease patients. Bleeding time is the best platelet function test that correlates clinical bleeding.

Key words: platelet, haemostasis, chronic kidney disease

Introduction:

Numerous haemostatic abnormalities associated with chronic kidney disease (CKD)[1]. Patients with Chronic kidney disease develops haemostatic disorder mainly in the form of bleeding diathesis . Hemorrhage occurs at cutaneus, mucosal and serosal sites. Retroperitoneal and intracranial hemorrhage also occur [2]. Bleeding diathesis in Chronic kidney disease is one of the indication for dialysis. Therefore it is important to know the exact platelet haemostatic status of the chronic kidney disease patients with bleeding diathesis for proper management.

Chronic kidney disease is associated with excessive bleeding for a variety of reason[3]. Pathogenesis of bleeding in chronic kidney disease is multifactorial in origin, there is no single explanation for this complex and confusing disorder[4]. Platelet dysfunction is probably the most consistent and important feature particularly platelet-platelet and platelet vessel wall interaction. Platelet dysfunction resulting from different adverse biochemical and hormonal effects associated with progressive uremia. There is defective membrane expression and activity of glycoprotein adhesive receptor complex causing both impaired platelet aggregation and adhesion to endothelium[5]. In addition, platelet volume and the circulation platelet mass are reduced in chronic kidney disease possibly due to reduction in thromboxane concentration or activity[6].The mean platelet life span also reduce in advance chronic kidney disease[7].Bleeding time in chronic kidney disease patients not only depends on circulating platelet mass ,largely depends on its functional status.

Determination of total platelet count and bleeding time are the most popularly used primary screening test for bleeding diathesis. Among the different platelet function test, determination of bleeding time is the single most test that mostly correlates with the clinical bleeding and it is frequently used test for platelet function [1,8]. In this study total platelet count and bleeding time was determined in chronic kidney disease patients , comparison between platelet count and bleeding time and correlation between platelet count and bleeding time, platelet count and serum creatinine, bleeding time and creatinine were evaluated.

Materials and Methods:

This descriptive observational study was conducted in the Nephrology Unit of Rajshahi Medical College

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Hospital, Bangladesh from July, 2007 to December, 2007. A total 50 patients due to various causes were included in this study .There were 33 male and 17 female patients. The age ranges between 21-65 years. The inclusion criteria were predialytic chronic kidney disease patients with serum creatinine concentration >177 µmol/L not taking anti platelet drug like aspirin/ clopedegrol or other and erythropoietin therapy . Chronic kidney disease patients having primary haematologial disorder, chronic liver disease and pregnancy were excluded from the study. All patients gave verbal consent prior to study entry.

After taken all aseptic precaution, 05 ml venous blood was collected from antecubetal vein ,two spot blood film were made and aliquots of blood send to the laboratory for biochemical and haematological analysis. Blood films were dried in the air and stained in with Leishman's stain for examination of smear under microscope. Total platelet count was determined by visual microscopic methods from the smear white blood cell (WBC) as reference(PCW=Platelet count based on WBC).Total platelet count $<150x10^9/L$ regarded as thrombocytopenia.Bed side bleeding time was determined following IVYs method. Bleeding time >9 min was regarded as prolonged bleeding time. Serum creatininine concentration was estimated by Alkaline cupric method. The results were recorded in printed form and subsequently analyzed. All data's were expressed as mean+ SD and SPSS windows version 12 software package was used for all statistical analysis.

Results:

A total of 50 Chronic kidney disease patients were included in the study. There were 33 male and 17 female with a male female ration of 1.9:1.The mean age of the patients was (41.22±2.0) years(ranges between 22-65 yrs) and the mean haemoglobin , serum creatinine concentration, platelet count and bleeding time were 4.96 ±0.32 gm/dl, 430.74± 11.92 µmol/L , 246.50 ± 13.63 $x10^9/L$,4.13± 0.28 min respectively (Table-I).Out of these 50 patients thrombocytopenia were found in 19(38%) patients (<150x109/l). Bleeding time were found prolonged (>9 min) in 6(12%) patients. Among those patients with prolonged bleeding time , thrombocytopenia were found in 4(8%) patients (Table-II).There was no correlation observed between platelet count and severity of Chronic kidney disease (r=0.079 , p=<0.584). No correlation between platelet count and bleeding time(r =0.100, p=<0.49). No significant correlation also observed between bleeding time and severity of CKD (r=0.189 , p=<0.189) (Figure-1,2,3).

Table-I

Characteristics of 50 Chronic Kidney disease patients

Total number of patients	50
Sex	
Male	33
Female	17
Mean age	41.22±2.0
Mean haemoglobin	4.96 ±0.32 gm/dl
Mean serum creatinine	430.74± 11.92 µmol/l
Mean Platelet count	246.50 ± 13.63x10^9/l
Mean bleeding time	4.13± 0.28 9(min)

Table –II

Comparison between bleeding time and platelet count

Bleeding time	Platelet count x10^9/L			
	<150 (n, %)	150-300 (n, %)	300- 450 (n, %)	>450 (n, %)
Bleeding time prolonged (>9 min) n=6	04(8)	01(2)	01(2)	0
Bleeding time normal n=44	15(30)	13(26)	14(28)	02(4)
n=50	19 (38)	14 (28)	15 (30)	02 (4)

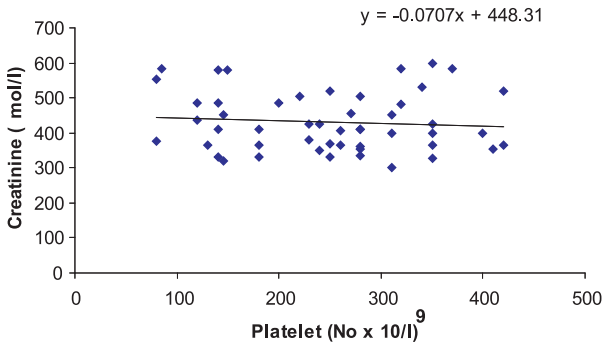

Fig.-1: *Scattered diagram showing no correlation between platelet count and creatinine*

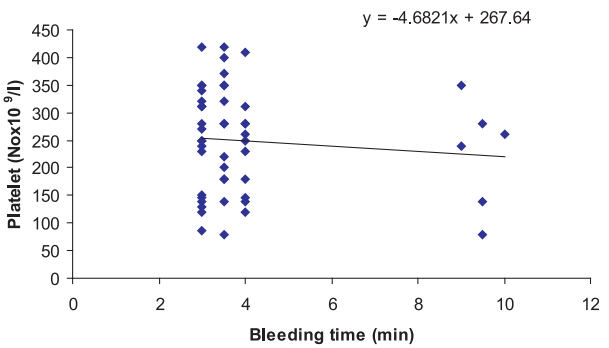

Fig.-2: *Showing no correlation between platelet count and bleeding time.*

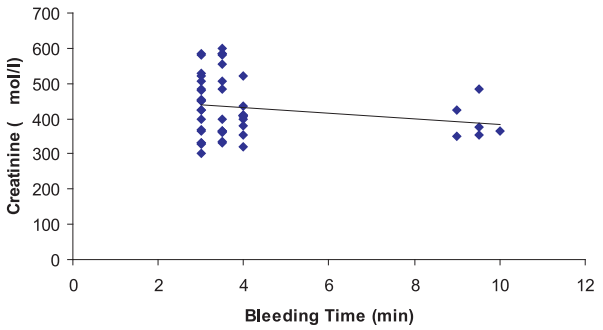

Fig.-3 : *Scattered diagram showing no correlation between bleeding time and creatinine.*

Discussion:

The frequency of thrombocytopenia in chronic kidney disease patients is controversial[9]. Platelet count is highly variable in chronic kidney disease patients , largely depends on the etiopathogeneis of the disease. The greatest role in the development of haemostatic disturbences in patients with chronic kidney disease is ascribed to the Platelet [10]. Bleeding tendency in chronic kidney disease patients not only depend on platelet count mostly depends on the platelet functional status. Patients with advanced chronic kidney disease suffer from complex haemostatic disorders. Ureamic patients show a bleeding diathesis that mainly due to abnormalities of primary haemostasis; in particular platelet dysfunction and impaired platelet vessel wall interaction [11].

In present study , out of 50 predialytic chronic kidney disease patients , thrombocytopenia was found in 38 % cases ($<150x10^9/L$). This finding contradict with that of Akinsola et al, Talwar et al and Aboo et al ,where they found thrombocytopenia in 7.6%, 52% and 29.3% cases respectively [12,13,14]. Small variation may be possible due to difference in the method of determination of platelet count. But this contradiction justified that platelet count in chronic kidney disease patients is highly variable.

Out of 50 chronic kidney disease patients , bleeding time was found prolonged (>9 min) in 6(12%) cases, among them , thrombocytopenia was found in 4(8%) cases. This findings are in consistent with that of Akinsola et al, who found prolonged bleeding time in25.6% cases where 7.6% cases were thrombo-cytopenic [12].

There was no correlation observed between platelet count and serum creatinine. No correlation between platelet count and bleeding time. No significant correlation also observed between bleeding time and serum creatinine (Figure-1,2,3).This findings are consistent with that of Akinsola et al who found no correlation between platelet count and bleeding time and between bleeding time and serum creatinine[12].

Conclusion:

Therefore, it is concluded that though determination of total platelet count is the first line screening test for platelet haemostatic disorder , it is not a absolute reliable parameter as it is highly variable in chronic kidney disease patients. It is also concluded that bleeding time is the best platelet function test that reflects both qualitative and quantitative platelet haemostatic abnormalities and should considered first line screening test for bleeding diathesis associated with chronic kidney disease patients in developing countries.

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EXTRAINTESTINAL MANIFESTATIONS OF CROHN'S DISEASE IN BANGLADESH

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Abstract

Crohn's disease has been considered to be uncommon in Asia Pacific region The study was undertaken to know the extraintestinal manifestations of Crohn's disease in Bangladesh and to compare the result with that of other Asian and Western countries. This was an observational study consisting of patients seen in the department of gastroenterology, Bangabandhu Sheikh Mujib Medical University for 20 years (between 1991 and 2010). Individual case records were carefully reviewed with regard to gender, sex and extraintestinal manifestations. A total of 41 patients with Crohn's disease were identified. 70.7% were male and 29.3% were female with male to female ratio was 2.4:1. Mean age was 34±11.8 years and peak age group was 21-30 years. The chief extraintestinal manifestations were arthritis, aphthous ulcer in the oral cavity, erythema nodosum and episcleritis. Arthritis was the most frequent among the extraintestinal manifestations. So, Crohn's disease should be considered as an important differential diagnosis when a patient presents with bowel symptoms associated with extraintestinal manifestation and thus early recognition and treatment could be possible.

Key words: *Crohn's disaese, extraintestinal manifestation*

Introduction

Crohn's disease is an inflammatory bowel disease that primarily affects small intestine and colon. Extraintestinal manifestations of inflammatory bowel disease are common, occuring in up to 25% of patients with inflammatory bowel disease. These manifestations can occur during periods of active inflammatory bowel disease and at any time unrelated to the activity of bowel disease.[1] Crohn's disease has traditionally been considered a disease of developed countries and Asia–Pacific region had previously been thought as an area with a low incidence of Crohn's disease. More recent reports from India, Japan and China have shown it is an emerging disease in the part of the world where tuberculosis and infective colitis had previously been thought to predominate.[2]

The aim of the study was to find out the extraintestinal manifestations of Crohn's disease amongst Bangladeshi population and to identify any difference between the result in our population and that of other Asian as well as Western population.

Materials and methods

All patients attending the Gastroenterology department of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh with a diagnosis of Crohn's disease between 1991 and 2010 were enrolled in the study. Total forty one patients with Crohn's disease were included in the study. The medical records of these patients were thoroughly reviewed from the time of diagnosis up to the date of each patient's last follow up. Data were collected about gender, age at presentation and extraintestinal manifestations.

Data were entered systematically into computer with Microsoft Excel. The test statistics used to analyze the data were descriptive statistics.

Results and observations

A total of 41 patients diagnosed as Crohn's disease from 1991 to 2010 were reviewed. Twenty-nine patients (70.7%) were males and twelve (29.3%) were females. Male to female ratio was 2.4:1 (Figure 1). Age ranged from 18 to 70 years with a mean age of 34±11.8 years (Mean ± SD). Of the total patients, 3 patients (7.3%) were in 11-20 years age group, 20 patients (48.7%) were in 21-30 years age group, 5 patients (12.2%) were in 31-40 years age group, 2 patients (4.9%) were in 51-60 years age group and rest 1 patient (2.4%) was in 61-70 years age group (Figure 2). So the peak age group was 21-30 years.

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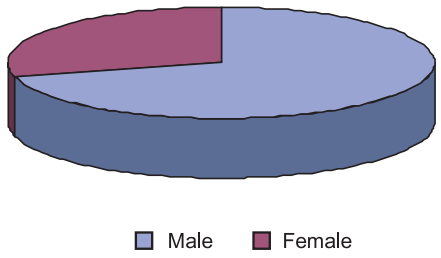

Fig.-2: *Sex distribution of Crohn's disease*

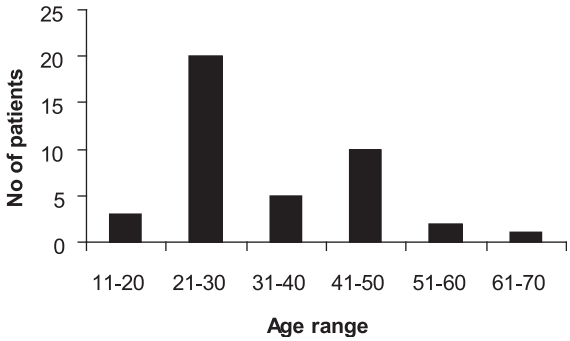

Fig.-3: *Age distribution of Crohn's disease*

The extraintestinal manifestations reported by the patients were arthritis, oral ulceration, ocular problem mostly episcleritis and erythema nodosum during the course of disease at the time of diagnosis or at different follow up. Most of the extraintestinal manifestations appeared during flare of intestinal manifestations and disappeared when intestinal manifestations achieved remission.

Out the total patients, 10 patients (24.4%) patients had arthritis, 4 patients (9.7%) patients had aphthous ulceration in the oral cavity, 2 (4.9%) patients had erythema nodosum and 1 (2.4%) had episcleritis (Table 1)

Table-I

Extraintestinal manifestations of Crohn's disease (n=41)

Features	Number of patients	Percentage
Arthritis	10	24.4
Aphthous ulcers	4	9.7
Erythema nodosum	2	4.9
Episcleritis	1	2.4

Arthritis found in Crohn's disesae were mostly peripheral asymmetrical oligoarticular involving the large joints of both upper and lower limbs. Pyoderma gangrenosum and primary sclerosing colangitis were not reported in our study.

Discussion

The present study was an observational study done in a referral, teaching hospital where we noticed the extraintestinal manifestations of Crohn's disease over the last two decades.

Extraintestinal manifestations in Crohn's disease are common in developed countries but uncommon in Asian countries like China (6.1%) and Singapore.[3] In Jewish patients with Crohn's disease, Sephardic patients had significantly more frequent extraintestinal manifestations than Ashkenazi patients (35% vs. 17%).[4] Extraintestinal manifestations were reported to be uncommon in patients with Crohn's disease from Pakistan.[5] Arthritis was found in 24.4% of our patients, in 9.1% of Chinese patients,[6] in 10 to 20% patients of developed countries. Erythema nodosum was found in 4.9% of our patients, in 3.1% of Chinese patients[3] and in 6–15% of patients with Crohn's disease in developed countries.[7] Oral ulceration occurred in 9.7% of our patients and in 4.9% of Chinese patients[6] whereas it was 70% in one report from a developed country.[8] Finally, episcleritis was found in one of our patient (2.4%), while in 2.3% Chinese patients[3] and Orchard *et al*[7] reported 5% in 483 Crohn's disease patients with more serious eye complications.

In conclusion arthritis in our patients was more frequent than other Asian countries but similar to Western countries. Extraintestinal manifestations other than arthritis are uncommon in our population

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IS AUDIO VISUAL METHOD BETTER THAN TRADITIONAL FOR MEDICAL STUDENTS? - A SURVEY REPORT

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Abstracts

Objectives: *Different teaching aids are advocated in the medical colleges for delivery of lectures such as power point presentation, blackboard, transparency sheet, overhead projectors, extempore and lecture sheets .The aim of our study was to compare the more acceptable teaching methods between the students of Dhaka Medical College and Enam Medical College.*

Materials and Methods: *Total one hundred students were selected from fourth year in each medical college. They were asked to fill in a fourteen item questionnaire about their perception of five lecture delivery methods. Questionnaire was properly explained. The results were analyzed separately to find out any differences between preferences of teaching methods in both medical colleges.*

Results: *In DMC 50% students preferred traditional blackboard method ,25% PowerPoint presentations, 5% both blackboard and PowerPoint, 16% extempore and 4% lecture sheet .On the other hand, in EMC, 53% mentioned PowerPoint presentation as most acceptable, 38% blackboard, 5% combined blackboard and PowerPoint and 4% extempore. Some important comments were recorded which could be valuable for the medical teachers.*

Conclusion: *The study showed that students of DMC clearly prefer traditional blackboard method rather than other teaching aids, whereas students of EMC prefer PowerPoint presentation. The study does not bring out any evidence based superiority of any lecture delivery method. It appears that any teaching aid can be appropriate and effective if the teachers are properly trained. This highlights the need for formal training in teaching technologies for good presentation and thus motivate the students.*

Keywords: *lecture delivery methods, blackboard, PowerPoint presentation, medical education*

Introduction

Lectures can be traced as far back as the Greeks of the fifth century BC, and in medieval times lectures were the most common form of teaching (Brown and Atkins, 1988)[1]. Therefore, the lecture has its merits. The most common method of teaching for medical students is lecture. Though small group learning is the best way for teaching ,still we prefer lecture as we have a large numbers of students. Hence, it is immensely important that lecture should be as effective as possible[2]. A learner's learning style, whether visual, auditory or kinesthetic, is usually resistant to change[3]. Hence it is likely that mismatches exist between the learning styles of medical students and the teaching styles of medical teachers.

At present, the most common ways of lecture delivery include the lectures using PowerPoint (PPT) presentations, lectures utilizing the transparency and overhead projector (TOHP) besides the traditional 'chalk and talk' method. There is no conclusive study stating the superiority of one method over the other. Garg et al.(2004) have observed that students want the teachers to include audiovisual aids during the lectures, but it is not certain whether it increases

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their understanding or performance in the examinations. Bartsch and Cobern (2003) noted that students preferred lectures with PPT over the use of TOHP, but that in some instances the content of the PPT presentation distracted students and they performed less well on tests compared with another group given lectures using chalkboard[4]. According to one study, traditional classes with blackboard presentation were the most favored by students from biomedicine and medicine courses[9] while another study observed that most students preferred PPT presentations over traditional presentations (eg, chalk and talk). One extensive study comparing PowerPoint and TOHP observed no difference in student performance in tests (Szabo and Hasting, 2000)[5] while in another study there was marked improvement in examination results when PPT replaced the use of TOHP (Lowry, 1999)[6]. Therefore, this study was undertaken to find out students' opinions of the impact of PowerPoint presentations in lectures compared with TOHP, lecture sheet, extempore and the traditional chalkboard teaching.

Materials and Methods:

A questionnaire-based survey of the medical undergraduate students in Dhaka medical college and Enam Medical College, Savar was conducted after getting permission from the principal and institutional ethical committee of the college. In these colleges, the annual intake of medical students is 175 and 100 respectively. A 14 item questionnaire was circulated to total of 200 3rd year medical students,100 from each medical college .The students were asked to fill in the structured questionnaire about their views and perception regarding five methods of delivering lecture, i.e blackboard, PowerPoint, overhead projector, lecture sheet and extempore. They were also asked to write several comments regarding each method.

Results:

Perception of students from Dhaka Medical College:

The majority of medical students from DMC rated Blackboard teaching higher in terms of all the parameters studied as compared to the chalkboard or TOHP-based teaching. The students' preferences for each teaching aid (given as a percentage) were as follows:

- PPT: 25%
- Blackboard: 50%
- TOHP: 0%
- Lecture sheet:4%
- Extempore:16%

Perception of students from Enam Medical College:

Majority students from EMCH preferred PowerPoint method. The students' preferences for a teaching aid (given as a percentage) were as follows:

- PPT:53%
- Blackboard: 36%
- TOHP: 0%
- Lecture sheet: 0%
- Extempore :4%

In the opinion of the majority of students:

1. With the blackboard method, there is more student-teacher interaction and less chance of attention diversion and the contents are easy to understand.
2. With the PowerPoint method, both text and images can be displayed on same slide ,so it is clearly legible.
3. With the extempore method, teacher can make the whole subject interesting and easy for students.
4. With the lecture sheet method, It is helpful to follow lecture while teacher is delivering it.

Comparison of preference: DMC versus EMC students:

The medical students of EMC clearly preferred the use of PPT presentations. The blackboard method was the most preferred method among the DMC students (50%) but this was not much appreciated by the EMC students (36%). The DMC students showed more affinity towards the extempore method (16%) as compared to their EMC medical colleagues (4%). (figure – 1)

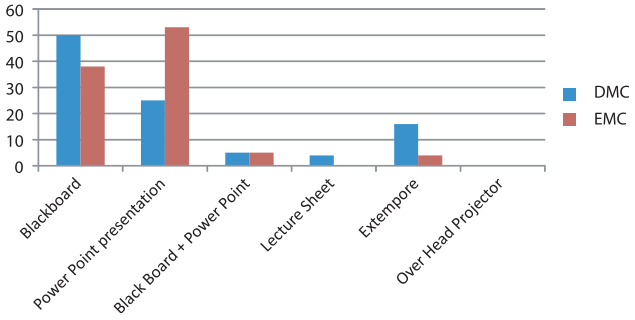

Fig.-1: *Comparison of the preferences of DMC students with EMC students for each of the teaching method*

Important comments provided by the medical students

Blackboard:

1. The main reasons for being in favour of this technique were that the student-teacher interaction was better, maintenance of good eye contact, it helped taking down the notes and diagrams as the students follow the hands of the teacher and the lecture contained natural pauses and breaks.
2. The main reasons against this technique were that poor handwriting might not be legible and sometimes the blackboard was dirty. Also fewer diagrams were provided and less information was covered in the lecture.

Transparencies and overhead projector:

1. The main reasons for liking these techniques were that more information on the topic was covered in a shorter time
2. The main reason for disliking these technique was that any power failure interrupted the lecture, and sometimes the lecture delivery was too fast
3. Often if a large amount of information was presented in a single transparency it made the lecture monotonous and it was difficult to concentrate.
4. The issue of poor visibility and poor handwriting could be avoided by printing eg, by using PPT printouts and photocopying on the transparencies. The letter size should be clearly legible from a distance

PowerPoint (PPT) presentation:

1. The main reasons for liking this technique were that it provided a better quality of text and diagrams, and it avoided the issue of dirty blackboard and faulty chalks. PPT is more interesting because it can incorporate animations, pictures, graphs etc.
2. The main reasons for disliking this technique were that some teachers went too fast and then students found it difficult to cope up. Many students claimed that slides were not prepared by the teachers themselves in many occasion and that's why they could not read it properly and could not make it understandable to the students.

Lecture sheet:

Point in favour of lecture sheet was that it was easy to follow lecture when sheets were provided beforehand.

Extempore:

16% DMC students and 4% EMC students liked extempore (Figure -2).

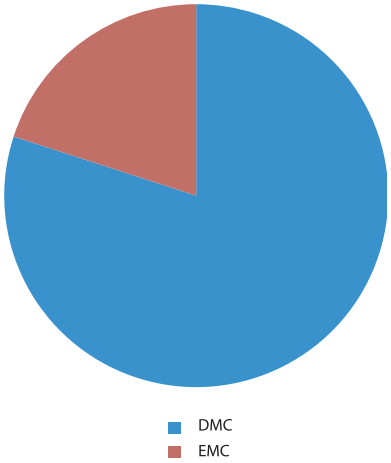

Fig.– 2: *Pie chart showed DMC and EMC students' likings for extempore*

They also commented that a teacher should be smart, should have clear voice and his pronunciations should be good.

Discussion:

From this study this was clear that there were differences in perception of lecture delivery methods between the students of DMC and EMC. Students from DMC favour in the order of priority blackboard> PowerPoint> extempore> lecture sheet > OHP whereas students of EMC have chosen Power Point> black board > lecture sheet and extempore > OHP. DMC students significantly preferred blackboard method than the EMC students.

Possible reasons for difference:

Though the syllabus and curriculum of medical students were same in both medical colleges, the preference of method was different, where teachers might be the main contributing factor. Regarding PowerPoint presentation 80% students of DMC stated that there were less student teacher interaction and eye contact was not properly maintained. More chance of attention diversion was there. Some teachers just read off the slides commented by 5% students. Some went through the slides so rapidly that it became difficult to follow for the students(10%). Some prepared their slides with too much content that it seemed to be overloaded and boring. Few students noted out that the slides were not prepared by teachers

themselves and as a result teachers feel uneasy to read slides during delivery of lecture. During class, 5% students kept themselves busy writing and thus they could not give attention to the materials. One disadvantage of PPT seemed to be that the student became a passive observer rather than an active participant[13]. It has been suggested that it is better to print out the PPT slides [20] and give them to the students, or put them online, and/ or to videotape the lecture and provide the videotape to the students.

But majority (53%) of EMC preferred PowerPoint. 83.5% students thought that it was easy to understand and follow. According to 6.5%, pictures, graphs and several images could be put altogether to make the topic interesting. 10% think that they were able to give more attention in this method. The students found presentations more interesting, as noted earlier, perhaps because of the novelty factor[16]. A study had pointed out that in PPT the ability to integrate text, pictures, and images was a great advantage which improved the educative value of the subjec[17]. PPT was a program which could make a lecture very interesting[21] or could cause distraction[4], the difference was up to the teacher using it[22].

Regarding blackboard method, 50% of the students of DMC liked this method.70% of them thought that there was good student-teacher interaction. 5% stated that learning seemed to be more interesting. 5% commented that there was less chance of attention diversion. Eye contact maintained be properly (5%) and contents could be grasped nicely(5%). Some students mentioned that in blackboard method teachers had their natural pauses, so it was easy to follow the lecture and cope up with the speed.

38% students of EMC liked blackboard. Majority did not prefer it as they think that it was difficult to see from the distant (85%) and hand writings was not legible(15%). In this context, a chalkboard may be said to be more student-centered while PPT is more teacher-centered[19].

In Overhead projector method, none of the students of DMC and EMC liked this. 80% students thought that too much contents were placed on one page or slide,10% think that sheets were poorly visible from distant, writings were not legible and faded(5%) and transparencies were not properly placed sometimes(5%). It was explained in an article that although the use of a TOHP was easy and had some advantages, at times it served as a distraction[18].

4% DMC students preferred lecture sheet method as they thought if the reading materials were provided before the class they could go through it properly and it was easy to follow teachers afterwards.

16% DMC students and 4% EMC students were in favour of extempore method where teachers deliver lecture without any aid. They liked it because they thought that a good teacher knew how to start at a basic point of the course and then lead them gradually through the new and more difficult points[15].Smartness, clear voice, good pronunciation were expected from the teachers.

Some previous studies have found that students preferred PPT[4,7,8] while in others the students preferred traditional blackboard teaching to TOHP and PPT[9]. One extensive study was suggested that the efficacy of PPT was case specific rather than universal[7]. Some had argued that PPT presentations encouraged an active learning environment, increased the effectiveness of lectures, and lend clarity to the subject[10-12]. One disadvantage of PPT was that the student became a passive observer rather than an active participant[13].It was suggested that although PPT had some positive effects, it did reduce the interactive discussion between teacher and students[14].

Conclusion

In our survey report, there was difference of perception of methods of teaching was noted between students of DMC and EMC. But this study actually did not bring out any superiority of any method. It emphasizes that proper understanding of a lecture does not depend on the method but depends on the teacher. If the teacher is well trained, any method would be effective.T eaching is not the quality of technology, but the quality of teacher. Formal training in teaching technologies is needed to improve the presentation and thus motivate the students.

Conflicts of interest: None

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LOW IRON LEVEL IS RELATED TO TELOGEN EFFLUVIUM IN WOMEN

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Abstract

A case-control study conducted in the Department of Dermatology and Venereology of Bangabandhu Sheikh Mujib Medical University, Dhaka from July 2008- December 2010. A total 60 female patients of telogen effluvium attending in outpatient department (OPD) were enrolled in the study with 30 having hair loss considered as case (Group-A) and another 30 females had no history of hair loss were considered as control (Group-B). The study included 60 patients and the mean age were 25.4±7 years ranging from 18 to 42 years in group A and 24.8±5.6 years ranging from 17 to 36 years in group B. Maximum number was found in the age group of 21- 30 years in both groups and nearly three fourth (73.4%) patients were unmarried in group A and 18(60.0%) in group B. Most of the patients were student in both groups, which were 21(70.0%) and 17(56.7%) in group A and group B respectively and majority of the the patients were HSC level in both groups, 15(50.0%) and 14(46.7%) in Group A and Group B respectively. Most of the patients came from middle class, which were 20(66.7%) and 16(53.3%) in group A and group B respectively. The mean serum ferritin were 18.8±8.1 g/L ranging from 4.5 to 36.54 g/L and 36.6±9.9 mg/L ranging from 18.46 to 56.3 mg/L in group A and group B respectively. The mean Hb level was 11.5±1.4 gm/dl ranging from 8.5 to 14.0 gm/dl in group A and 12.8±1.1 gm/dl ranging from 10.5 to 14.5 gm/dl in group B. The mean difference of Hb level was statistically significant ($p<0.05$) between two groups in unpaired t-test. It can be concluded that low iron level is associated with telogen effluvium in women.

Introduction

Iron deficiency anaemia is a common nutritional deficiency. The prevalence of iron deficiency anaemia in premenopausal women is estimated to be 12%.[1] Iron deficiency is the most common cause of telogen effluvium in premenopausal women due to menstrual blood loss & pregnancy. Telogen effluvium is a form of non-scarring alopecia characterized by excessive diffuse hair shedding.[2] Although hormonal imbalance & medications are the most common causes of telogen effluvium in postmenopausal women, iron deficiency due to gastrointestinal blood loss & malabsorption should not be ruled out.[3] Besides being a trigger for telogen effluvium where the majority of hair shedding occur, iron deficiency can also be the most likely underlying cause. It is understood that levels of iron play a significant role in various body functions but it is also essential for sustaining normal growth and maintenance of hair. As a continuously growing and metabolically active tissue, hair requires high level available nutrients for hair cell DNA synthesis and development. [4] Iron is fundamentally required by the body to form adequate numbers of normal red blood cells. These are the cells that carry oxygen throughout the body. The key protein in red blood cells to which oxygen attaches is called haemoglobin. Haemoglobin is a very iron rich biochemical. [5]

Iron deficiency is a common and reversible cause of telogen effluvium. [6] No specific therapy is required for most patients with acute telogen effluvium. [7] But if the course is prolonged or if history or physical examination suggests an abnormality, iron status should be determined to find any deficiency of iron. Moreover, hair loss treatments can be expensive, so it is always a good idea to check iron status before starting treatment. [8] Several studies were conducted to find out the relation between iron deficiency and hair loss. But conflicting observational data have failed to determine whether an association exists between alopecia and iron deficiency in women. Here an endeavor had made to find out the relation between iron level and telogen effluvium.

Materials and Methods

This was a case-control study conducted in the Department of Dermatology and Venereology of Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka from July 2008-December 2010. A total sixty female patients of telogen effluvium attending in outpatient department(OPD) were enrolled in the study with 30 having hair loss considered as case(Group-A) and another 30 females had no history of hair loss were considered as control(Group-B). Purposive type of non probability sampling technique was followed in this study.

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2. Associate Professor, Department of Dermatology & Venereology, BSMMU
3. Specialist in Dermatology & Venereology, BSMMU
4. Specialist in Dermatology & Venereology, Combined Military Hospital (CMH)

Inclusion criterias of patients include:

1. Clinically diagnosed telogen effluvium.
   a. History of diffuse hair loss for more than 6 months.
   b. Daily hair loss count more than 100.
   c. Positive pull test.
   d. Absence of central parting and miniaturized vellus hair(to exclude female pattern hair loss)..
2. Patient who gave informed consent.
3. Women with childbearing age.

Exclusion criterias of patients include:

1. Not willing to participate.
2. Persons taking iron supplementation.
3. Patients with scalp psoriasis, seborrhiec dermatitis and fungal infection.
4. Patients with area of total alopecia or sign of inflammatory scalp dermatitis.
5. Patients with hypothyroidism or hyperthyroidism.
6. Patients with female patterned hair loss (FPHL).
7. Patients with known triggering event for hair loss like pregnancy, surgery, febrile illness etc.
8. Patients with anticancer chemotherapy and immunosuppressive therapy.
9. Patients with concomitant chronic systemic illness.
10. Patients with trichodynia.
11. Children and postmenopausal women.

Inclusion criterias of control group:

1. Women with childbearing age without a history of hair loss.
2. Persons who gave informed consent.

Exclusion criteria of control group:

1. Not willing to participate.
2. Persons taking iron supplementation.
3. Children and postmenopausal women.

Procedure of the study:

All women patients of hair loss attending in dept. of Dermatology, BSMMU were seen. According to a structured questionnaire, their particulars and history was taken.

Then patients for the study were selected on the basis of history, clinical examination and inclusion and exclusion criterias. Thorough general physical examination of all the study subjects was done to exclude any systemic illness. Diffuse hair loss patients without any known triggering factors were included in the study. Diagnosis of telogen effluvium was confirmed by daily hair count and hair pull test and absence of miniaturized villus hair or widening of central parting (to exclude female pattern hair loss). Then from the selected patients blood samples were collected with aseptic measures for estimation of serum ferritin, serum free T4, thyroid stimulating hormone(TSH), blood glucose, Heamoglobin level, total count of WBC(TC), differential count of WBC(DC), erythrocyte sedimentation rate(ESR), serum ALT and serum creatinine. The tests other than serum ferritin and heamoglobin level were done to exclude the metabolic and systemic causes of telogen effluvium. Serum ferritin, free T4, TSH were done in dept of Biochemistry, BSMMU, Dhaka. Other tests were done in Dept of clinical pathology, BSMMU, Dhaka. At the same time a control group of healthy women without hair loss were selected with exclusion and inclusion criterias and serum ferritin, Hb, TC, DC, ESR were done. Data were collected from biochemical reports and standared questionnaire. Reports of cases and controls were then compared.

Collection of blood samples:

With all aseptic precautions from all study subjects 5 ml of blood was collected from median cubital vein by disposable plastic syringe. The needle was detached from the nozzle and blood was transferred immediately into dry clean plastic test tube. The blood collected in dry test tubes was allowed to clot and then was centrifused. Separated serum was collected into micro-centrifused tubes and was appropriately labeled and stored in freezer at -35^0C until analytical measurement of serum. Blood was taken for one time from each study subject for estimation of serum ferritin and all other investigations.

Method of estimation of serum ferritin:

Microparticle Enzyme Immunoassay (MEIA) technology was used for the quantitative determination of ferritin in human serum in the dept of Biochemistry, BSMMU, Dhaka.

Ethical consideration:

1) All informations of benefits and hazards were delivered to the patient.
2) Patients were informed about the methodology, objective and purposes of the study.
3) They were made free to give consent.
4) Information's obtained from the patient were kept confidential.

5) Thesis protocol was accepted by the University ethical review committee.

Data collection technique:

Relevant data were collected in a preformed data collection sheet for each of the patient from their history, clinical examination and biochemical reports.

Analysis of the data and results:

All data checked and verified thoroughly to reduce the inconsistency. Data were collected and processed by SPSS (statistical package of social science) version 12.0. The quantitative data were expressed as mean and standard deviation (mean+SD) for normally distributed variables. The chi-square test and student t test were used for comparison between two groups.

Results

This was a case-control study conducted in the department of Dermatology and Venereology of Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka. The main objective of the study was to find out the relationship between low iron level and telogen effluvium in women. A total sixty female patients were enrolled in the study with thirty having hair loss considered as case (Group-A) and another thirty females had no history of hair loss were considered as control (Group-B).

The study included 60 patients and they were divided into four age groups. The mean age were 25.4±7 years ranging from 18 to 42 year in group A and 24.8±5.6 years ranging from 17 to 36 years in group B. Maximum number was found in the age group of 21-30 years in both groups. The mean age difference was not statistically significant (p>0.05) in unpaired t-test.

Nearly three fourth (73.4%) patients were unmarried in group A and 18(60.0%) in group B and the difference was not statistically significant (p>0.05) regarding the marital status in chi square test. Most of the patients was student in both groups, which were 21(70.0%) and 17(56.7%) in group A and group B respectively. Housewife was 9(30.0%) in group A and 9(30.0%) in Group B. No service holder in Group A but 4(13.3%) were in group B.. The difference was not statistically significant (p>0.05) regarding the occupation in chi square test.

Majority of the the patients were HSC (higher secondary school certificate) level in both groups, 15(50.0%) and 14(46.7%) in Group A and Group B respectively. However, 11(36.7%) and 13(43.3%) was graduate in Group A and Group B respectively. The difference was not statistically significant (p>0.05) regarding the level of education in chi square test. Most of the patients came from middle class, which were 20(66.7%) and 16(53.3%) in group A and group B respectively. Upper class found 10(33.3%) in Group A and 14(46.7%) in Group B. The difference was not statistically significant (p>0.05) regarding the socio-economic status in chi square test.

Low serum ferritin level was found 23(76.7%) and 5(16.7%) in group A and Group B respectively. The mean serum ferritin were 18.8±8.1 mg/L ranging from 4.5 to 36.54 mg/L and 36.6±9.9 mg/L ranging from 18.46 to 56.3 mg/L in group A and group B respectively. The mean difference of serum ferritin level was statistically significant (p<0.05) between two groups in unpaired t-test.

Low Hb level was found in 10(33.3%) and 2(6.7%) in group A and group B respectively. The mean Hb level was 11.5±1.4 gm/dl ranging from 8.5 to 14.0 gm/dl in group A and 12.8±1.1 gm/dl ranging from 10.5 to 14.5 gm/dl in group B. The mean difference of Hb level was statistically significant (p<0.05) between two groups in unpaired t-test.

Table-I

Distribution of the study patients according to age (n=60)

Age group (years)	Group A (n=30)		Group B (n=30)		P value
	n	%	n	%	
£ 20	9	30.0	8	26.6	
21 – 30	15	50.0	16	53.3	
31 – 40	5	16.7	6	20	
>41	1	3.3	0	0.0	
Mean±SD	25.4 ±7		24.8 ±5.6		0.741 ns
Range (min – max)	(18 -42)		(17 -36)		

P value reached from chi square test.

Table II

Distribution of the study patients by marital status (n=60)

Marital status	Group A (n=30)		Group B (n=30)		P value
	n	%	n	%	
Unmarried	22	73.4	18	60.0	0.199
Married	8	26.6	12	40.0	

P value reached from chi square test.

Table III

Distribution of the study patients according to occupation (n=60)

Occupation	Group A (n=30)		Group B (n=30)		P value
	n	%	n	%	
Student	21	70.0	17	56.7	
Housewife	9	30.0	9	30.0	0.328
Service holders	0	0.0	4	13.3	

P value reached from chi square test.

Table IV

Distribution of the study patients according to education (n=60)

Education	Group A (n=30)		Group B (n=30)		P value
	n	%	n	%	
SSC	4	13.3	3	10.0	
HSC	15	50.0	14	46.7	0.915
Graduate	11	36.7	13	43.3	

P value reached from chi square test.

Table-V

Distribution of the study patients according to economic status (n=60)

Economic status	Group A (n=30)		Group B (n=30)		P value
	n	%	n	%	
Upper	10	33.3	14	46.7	0.457
Middle	20	66.7	16	53.3	

P value reached from chi square test.

Table VI

Distribution of the study patients according to serum ferritin and Hb level (n-60)

Investigations	Group A (n-30)		Group B (n-30)		P value
	Low	Mean±SD	Low	Mean±SD	
SF(mg/L)	23 (76.7%)	18.8± 8.1	5 (16.7%)	36.6± 9.9	0.001
(min-max)	(4.5-36.54)		(18.46-56.3)		
Hb (gm/dl)	10 (33.3%)	11.5± 1.4	2 (6.7%)	12.8± 1.1	0.001
(min-max)	(8.5-14.0)		(10.5-14.5)		

P value reached from unpaired t-test
Serum ferritin-Low<22µgm/L
Normal range-22-120 µgm/L
Haemoglobin - Low <11.5gm/dl
Normal range-11.5-16gm/dl

Discussion

A case-control study conducted in the Department of Dermatology and Venereology of Bangabandhu Sheikh Mujib Medical University, Shahbag, Dhaka. This study included only premenopausal women, age range was 17 to 42 years not similar to a case-control study in1993 by Kantor et all of 106 female subjects aged 18 to 70 years presenting with alopecia. They included premenopausal and postmenopausal both group of patients.[9] Also not similar to a cross sectional study by Amade Bregy and Ralph Trueb of total 181 females, where mean age of 22 tellogen effluvium patients was 39.23 years(range,13-60). [5]

Data showed that highest percentage patients with telogen effluvium were in the age group 21 to 30 years (50.0%) . This is probably because these age group patients were more concerned about their hair loss. For the age matching the present study campared the mean ages of cases and controls and found no statistically significant difference between the two groups.

Nearly three fourth (73.4%) patients were unmarried in group A and 20(60.0%) in group B. Most of the patients were student in both groups, which were 21(70.0%) and 17(56.7%) in group A and group B respectively. Majority of the patients were in HSC level, 15(50.0%) in group A and 14(46.7%) in group B, however 11(36.7%) and. Most of the patients came from middle class, which were 20(66.7%) and 16(53.3%) in group A and group B respectively. This is because these groups of women have the habit of inadequate diet. So along with menstrual blood lose they have dietary iron deficiency. The study compared the mean of marital status, occupation, educational status and economic status among the cases and controls. No significant difference was found between the two groups of patients. This was done to reduce the differences in two groups of population.

The present work demonstrated that the serum ferritin levels were significantly decreased in telogen effluvium patients compared to control group. Both groups were categorised for serum ferritin levels using a cut-off point 22µgm/L (official lowest value for female used in Dept of Biochemistry, BSMMU). Low serum ferritin level were found 23(60.5%) and 5(16.7%) in group A and Group B respectively. The mean serum ferritin levels were 18.8±8.1 mg/L ranging from 4.5 to 36.5 mg/L in group A and 36.6±9.9 mg/L ranging from 18.5 to 56.3 mg/L in group B. The mean difference of serum ferritin level was statistically significant ($p<0.05$) between two groups in unpaired t-test.

Low Hemoglobin (Hb) level was found in 10(33.3%) and 2(6.7%) in cases and controls respectively. The

mean Hb level was 11.5±1.4 gm/dl with ranged from 8.5 to 14.0 gm/dl in cases and 12.8±1.1 gm/dl with ranged from 10.5 to 14.5 gm/dl in controls. The mean difference of Hb level was statistically significant ($p<0.05$) between two groups in unpaired t-test. It reflects that telogen effluvium patients are also associated with anaemia. This agrees with Rushton et al who showed that serum ferritin concentration may be a factor in non anaemic women and telogen effluvium. Rushton et al in a case-control study quantitatively evaluated 100 women who presented with diffuse alopecia and compared with 20 controls. Among 100 women with hair loss 50 were selected for biochemical and heamatological investigations. Among them seventeen(34%) had changes in iron metabolism, while in thirty six(72%) serum ferritin levels were below the lowest control value. As serum ferritin levels were reduced in 72% and this suggest that iron stores in non essential tissues such as scalp hair may be more important than has so far been recognized. [10] This is also supported by his another study with 200 women where found that sixty five percent of women had serum ferritin levels below 40µgm/L, the lowest control value obtained in women without hair loss. [11]

It is also supported by Nidal A Obaidat who concluded their study by stating that there was a significant association between low serum ferritin levels and chronic telogen effluvium. In their study mean serum ferritin levels between patients and controls were 18.7ng/ml and 47.6ng/ml respectively which was statistically significant ($p<0.05$).[12]

But in a case-control study by Kantor et al of 106 female subjects aged 18 to 70 years presenting with alopecia, the 30 subjects of telogen effluvium(TE) did not have significantly decreased serum ferritin concentration compared with 11 female control subjects(mean 50.1 versus 59.5 ng/ml respectively). They found that the mean ferritin level were significantly lower in androgenic alopecia and alopecia areata but not in telogen effluvium and alopecia areata totalis/universalis. [9]

In a cross sectional study of a total 181 female, 22 was with telogen effluvium and 159 were female pattern hair loss. The mean serum ferritin level was 40.09 ìgm/l (range 2-209). They found no correlation between ferritin levels<10ìgm/l whether in female pattern hair loss(FPHL) or tellogen effluvium (TE) patients. [5]

Although the number of subjects in my study was rather small, a recent case-control study involved just 60 women, in which 34 were patients with hair loss and 26 were healthy control group. Their conclusion was similar to present study in that serum ferritin levels were significantly decreased in telogen effluvium patients compared to control group.[14] However, Sinclair reported that no direct relationship between low serum ferritin and hair loss can be established. They concluded that usefulness of serum ferritin in routine investigation of women with chronic diffuse telogen hair loss and hence the role of iron supplementation therapy in management of hair loss are unlear. [14]

Previous authors claimed conflicting results; some suggesting an association between telogen effluvium and decreased iron stores, while others do not. Different authors used different range of serum ferritin level. Most previous studies included other types of hair loss in addition to chronic telogen effluvium and some of them addressed both men and women as patients.

Though there were some limitations in the study, it was first time in a developing country like Bangladesh where iron deficiency is a common nutritional problem. So the findings of the study should serve as an epidemiologic stepping stone from which further research, including clinical trials of iron therapy in hair loss patients can be launched. As ferritin levels accurately reflect body iron stores, however the present study clearly demonstrates an association between low iron stores and telogen effluvium in women.

W.F. Bergfield et al in a review article said “we believe that treatment for hair loss is enhanced when iron deficiency, with or without anaemia is treated. Treating iron deficiency without anaemia is controversial. Treatment of nutritional iron deficiency anaemia includes adequate dietary intake and oral iron supplementation. [8]

Chronic telogen effluvium is unlikely to resolve rapidly, but it is reassuring that hair loss will not progress to baldness. Decreased Hemoglobin level (Hb) and seum ferritin levels are best corrected with oral iron therapy, which is safe, relatively inexpensive and generally well tolerated. The normalisation of levels may take 4 to 6 months or longer and therapy may be discontinued ones these levels exceeds 70 ng/ml. [12]

Conclusion

It can be concluded that low iron level is associated with telogen effluvium in women.. Therefore Hemoglobin level and serum ferritin level may be of value in the evaluation of diffuse hair loss in women.

Recommendations

1) To evaluate the patients with diffuse hair loss Heamoglobin level and serum ferritin level would be a value, so it may be done routinely in hair loss patients.

2) A large scale study with adequate time and resources should be carried out in our country where iron deficiency as well as hair loss is a common problem especially in women.

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RETICULOCYTE PARAMETER ANALYSIS IN THE AUTOMATED HAEMATOLOGY ANALYZER USED IN THE LABORATORIES

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Abstract

Background: Reticulocyte count with immature reticulocyte fraction (IRF) used in the laboratories to evaluate the bone marrow erythropoietic activity and have great diagnostic and prognostic importance in the treatment of anemias and other pathological conditions. Objective: The aim of this study was to establish the normal reference range for reticulocyte count and its parameter. Methods: In this study reticulocyte profile were evaluated by automated analysis in 40 healthy control subjects by XT-2000i (Sysmex) hematology analyzer and compared with measurements obtained by manual methods. Manually reticulocytes were supravitally stained with new methylene blue. Results: This study found MRC was 0.81 ±0.46 % .The FCMR was 0.97±0.17 %, Ret abs was found .04±.02(10^6/ µl) and IRF was found 3.92±1.35%. Conclusion: The precision of the automated analyzer was found significantly higher than the manual methods.

Keywords: *Reticulocyte parameter, automated haematology analyzer.*

Introduction:

Reticulocytes are the precursor red blood cells, 10-15 micrometer in diameter [12,13]. They are cells, more rounded, non-nucleated and 20% greater, in volume, than the erythrocytes. Reticulocytes contain ribonucleic acid residues. These residues are stained with new methylene blue or brilliant cresyl blue dyes that confer the characteristic aspect of reticulum by brightfield microscopy. Known criteria were observed for good manual reticulocyte counting with special attention being paid to the preparation of reticulocyte slides, to counting fields without overlapping cells, and to the number of evaluated cells. The aim of this study was to evaluate the inter-observer variation and also to analyze the statistical error of manual reticulocyte counting. The reticulocytes can be classified as mature or immature depending on the amount of granules or reticula they contain. Reticulocyte counting is routinely and widely used in the laboratory to evaluate bone marrow erythropoietic activity. It is of great diagnostic and prognostic value in hemolytic anemias, in acute hemorrhage, in response to iron, folic acid and vitamin B_{12} therapy, as well as, after chemotherapy or bone marrow transplantation[11]. The manual method of reticulocyte counting is still very frequently used today due to its low cost in comparison to the automated method that has seen widespread. But the fully automated haematological analyzer has marked the most important progress in the last few years. These analyzers give the percentage and the absolute number of reticulocytes, together with new reticulocyte parameters that are much more accurate and precise than before. Moreover they give us a lot of information on the quality of reticulocytes and, therefore, on the recent erythropoiesis. The aim of this evaluation is to establish the reference range of reticulocyte parameters: Ret%, Ret#, IRF in the hematology analyzers.

Materials and methods:

This cross sectional study was carried out in the Clinical Pathology Department, BSMMU, Dhaka during the period of October' 2009 to September' 2010. Samples were taken from 40 healthy subjects, out of which 20 children and 20 adults were included in this study.

Automated reticulocyte counting was carried out in the haematology analyzer with reticulocyte counter in 40 healthy subjects. Blood sample (2 ml) was collected in an EDTA tube for complete blood count (CBC) and reticulocyte profile. Count was done

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preferrably within 2 hrs of collection. If delayed, blood sample was kept at 4ëë C before test. The measuring principle of the system is based on flow cytometry combined with hydrodynamic focusing. EDTA blood (100 µl) is aspirated and intracellular RNA is stained by auramine O, which is fluroscent under argon laser light[12]. The reticulocyte population is further subdivided into LFR, MFR and HFR (Figure-II). The percentage of reticulocyte is given as the sum of LFR, MFR and HFR. The IRF was calculated by MFR plus HFR.

Manually supravital staining of unfixed RBCs was done with new methylene blue (NMB) in 40 healthy subjects. Then mixing of 100 µl whole blood with 100 µl of 1% NMB solution in a 10x75- mm tube were done. After incubation at 37^0 for 15-20 minutes, the dilution was remixed and a wedge smear was performed[11]. The number of reticulocytes per 1000 RBCs was determined microscopically on x100 objective. Then percentage of reticulocyte was done. A reticulocyte was defined as a RBC containing at least 2 granules of reticulum (Figure-I). Absolute reticulocyte count was calculated from RBC count obtained from automated hematology analyzer.

All necessary and relevant data were processed. Data were evaluated by standard statistical methods. Analysis was done by SPSS (Statistical package for social science) by applying appropriate formula. Reference ranges were established by Mean, Median, Unpaired t test and Co-efficient of variance test.

Results:

In this study randomly enrolled 40 healthy subjects were taken. Out of them 20 were children and 20 were adult. The healthy control children were divided into three age groups and healthy control adults were divided into four age groups. The maximum number 11 (55.0%) was found in the age group of 6 – 10 year followed by 5 (25.0%) belonged to 1 - 5 year and 4 (20.0%) belonged to 14-18 year in healthy control children. In healthy control adults maximum number 9 (45.0%) was found in the age group of 19 – 30 year followed by 5 (25.0%) belonged to 31 - 40 year, 4 (20.0%) belonged to 41-50 year and 2 (10.0%) belonged to 51-60 year. It was found that 12 (60.0%) of the healthy control children was male and 8 (40.0%) was female. Male female ratio was 1.5:1. In healthy control adult male and female ratio was 1.9:1 and 13(65.0%) and 7(35.0%) were male and female respectively. The mean (±SD) MRC was 0.77±0.46 % and 0.85±0.46 % in healthy children and healthy adults respectively. The mean coefficient of variance of MRC was 45% and 49% in healthy children and healthy adults respectively. The mean (±SD) FCMR was 0.94±0.15 % in healthy children and 1.0±0.19 % healthy adults. The mean coefficient of variance of FCMR was 16% and 19% in healthy children and healthy adults respectively. The mean (±SD) Ret abs was 0.04±0.03 (10^6/µl) and 0.04±0.02 (10^6/µl) in healthy children and healthy adults respectively. The mean (±SD) IRF was 3.92±1.69 % in healthy children and 3.911.0 % healthy adults. No statistical significant difference ($p<0.05$) was observed between healthy children and healthy adults.

Table-I

Comparison of MRC (%), FCMR, Ret abs and IRF (%) between healthy child and healthy adult (n=40)

Follow-up (day)	Control (Children) (n=20) Mean±SD	Control (Adult) (n=20) Mean±SD	
MRC (%)	0.77±0.46	0.85±0.46	0.611^{ns}
Range (min-max)	(0.2-2)	(0.2-2)	
CV	45	49	
FCMR (%)	0.94±0.15	1.0 ±0.19	0.752^{ns}
Range (min-max)	(0.223-2)	(0.26-2)	
CV	16	19	
Ret abs (106/µl)	0.04±0.03	0.04±0.02	0.564^{ns}
Range (min-max)	(0.01-0)	(0.01-0)	
IRF (%)	3.92±1.69	3.91±1.0	0982^{ns}
Range (min-max)	(1.3-9)	(2.1-6)	

P value reached from unpaired t-test

Table-II

Age distribution of the healthy control children and healthy control adult (n=40)

Age in year	Control (Children) (n=20)		Control (Adult) (n=20)	
	N	%	n	%
1-5	5	25.0	-	-
6-10	11	55.0	-	-
14-18	4	20.0	-	-
19-30	-	-	9	45.0
31-40	-	-	5	25.0
41-50	-	-	4	20.0
51-60	-	-	2	10.0

Table-III

Sex distribution of the healthy control children and healthy control adult of the studied subjects (n=40)

Sex	Control (Children) (n=20)		Control (Adult) (n=20)	
	N	%	n	%
Male	12	60.0	13	65.0
Female	8	40.0	7	35.0

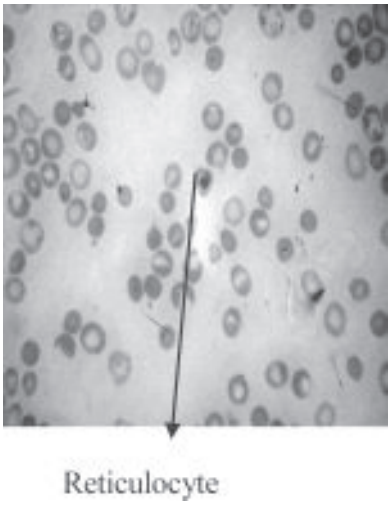

Fig-1: *Photomicrograph of reticulocytes, Stained supravitally by new methylene blue (x1000).*

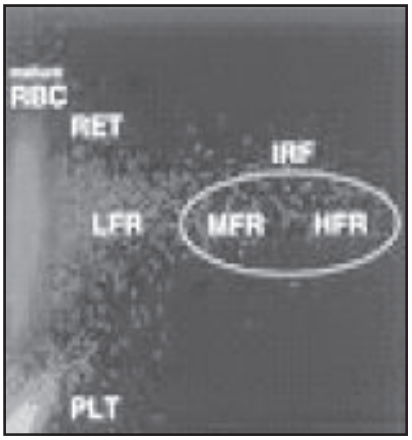

Fig-2: *IRF scattergram in Sysmex XT-2000i in hematology analyzer.*

Discussions

The traditional visual method of reticulocyte enumeration is limited in its usefulness because of the manual reticulocyte procedure's inherent imprecision. Coefficients of variation for the manual visual method are reported to range between 25% to greater than 50%[1]. This study found CV of manual count was 47% and CV of automated analyzer was 17.5%. Flow cytometric reticulocyte procedures use fluorescent dyes that bind to nucleic acids. Most clinical laboratory testing is performed using thiazole orange or auramine 0. Possible disadvantages of these methods include high cost, time-consuming preparation, and the need for experienced or highly technical operators. Additionally some dyes are suspected carcinogens[2]. Most recently, reticulocyte analysis has been incorporated into hematology analyzers. All flow cytometric procedures increase the usefulness and versatility of reticulocyte analysis by improving precision[2]. Some procedures also provide information about reticulocyte subpopulations. Precision improves significantly with flow cytometric methods because an average of 30,000 to 50,000 cells is evaluated as compared to 1000 cells by the visual methods [3].

Sandberg and collaborators established reticulocyte parameters by sysmex R-1000 and the technicon H*3 as follows: Mean values: Reticulocytes $0.044x10^{12}$/L, IRF- 11.9%, CV was 33%. They did not identify any sex-associated difference in the reticulocyte count [4]. This study found MRC was 0.81 ±0.46 % .The FCMR was 0.97±0.17 %, Ret abs was found .04±.02(10^6/µl) and IRF was found 3.92±1.35. Our study also did not found any sex related difference. Herkner evaluated automated reticulocyte enumeration in infants and children and established age dependent reference ranges[7]. Turowski and coworkers reported as mean ± 2 SD reticulocyte count 2.00±1.56%; Absolute reticuocyte count $88.8±68.94x10^3$/ml and IRF 0.22±0.16[8]. Reticulocyte quantification as a percentage or absolute count with immature reticulocyte fraction tests are simple, quick, inexpensive, reproducible and fairly reliable[5, 6]. So, this study was done to establish the reference ranges for reticulocyte profile.

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RETROSPECTIVE ANALYSIS OF 52 CASES OF ENTERIC FEVER IN A TERTIARY CARE HOSPITAL IN DHAKA CITY

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Abstract:

Enteric fever remains a serious problem in developing countries. School aged children and young adults are mainly the sufferer. Salmonella typhi infection results in a clinical syndrome that varies widely in presentation; especially in new antibiotic era. Records of 52 enteric fever cases who were admitted to BSMMU, from July 2007 to June 2008 was reviewed and information was recorded in a prescribed form. Descriptive analysis was done through SPSS. Mean age was 6.7±4 years and male: female ratio was 1.2: 1. Most common presenting features were fever in 100% cases, abdominal pain 40% cases, vomiting 35% and diarrhea, constipation 10%cases. Hepatomegaly was present in 71% and splenomegaly in 52% cases. In our study32% of children were under 5 years; and the result is similar with some other studies.[7, 8] Typhoid fever is still a disease which is difficult to diagnose. In some cases of delayed response antibiotic may be required for longer duration where patients became afebrile after 10 days or more from starting antibiotic.

Key words: *enteric fever, children, presentation*

Introduction:

Enteric fever is an important public health problem in many of the developing countries. Estimates of the global burden of typhoid fever suggest an annual incidence of 12.5 million cases, with three-quarter occurring in Africa and South-East Asia.[1,2] The incidence of typhoid fever is considered to be low in 1st few years of life, peaking in school age children and young adults and then falling in the middle age.[2,3] Various organs have been affected in the course of enteric fever; and there is a wide array of presentations varying from nonspecific febrile illness to one of the severe life threatening illness.[2,4] Emergence of MDR S typhi is a concern about response to treatment among treating physician.[4]

Salmonella typhi infection results in a clinical syndrome that varies widely in severity. At onset fever, malaise, flu like symptoms with dull frontal headache are common. The fever is initially low grade, and rises gradually and become high grade and sustained by second week. Often symptoms include poorly localized abdominal pain and dry cough. Physical signs are few – coated tongue, abdominal tenderness, rose spot, relative bradycardia and hepato-splenomegaly.

The epidemic nature of the disease in Bangladesh sufficiently warrants a review of the special features of the disease in children. If appropriate antibiotic is given fever gradually fall over 3 days. Due to emergence of MDR species and epidemiological aspect this study was conducted to see the presentation, outcome and response to antibiotic of enteric fever cases of BSMMU.

Materials and methods:

We reviewed all patients of Paediatric medicine unit 1 of BSMMU who were admitted over the period from July 2007 to June 2009. BSMMU is a referral hospital in Dhaka city where typhoid fever is endemic.[5] In this ward children aged 1 month to 15 years were admitted. And cases were selected with strong clinical suspicion of enteric fever – like high continued fever for 7 days or more, along with one or more clinical features suggestive of enteric fever – like abdominal pain, vomiting, constipation, loose motion, abdominal distension, tenderness and hepato-splenomegaly. Other febrile illness was excluded. Patients were investigated to confirm the diagnosis and exclude other diagnosis and for any complications. Investigations were CBC, Widal test, blood culture & sensitivity, ALT, S bilirubin. Final diagnosis was considered with suggestive clinical features and positive Widal test or positive blood culture. All patients were treated with injectable antibiotics and

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followed up regularly. Antibiotic were continued up to 5 days after patient became afebrile. Patients were discharged after complete antibiotic course and followed up 2 week after discharge.

Results:

Records of A total 52 cases of typhoid fever were analyzed. Mean age was 6.7±4 years. And male: female ratio was 1.2: 1. Most common presenting features were fever 100% cases, abdominal pain 40% cases, vomiting 35% and constipation 10%cases. About physical findings 71% had hepatomegaly and 52% had splenomegaly.

Table-I

Symptoms and signs of patients at presentation

Symptoms Features	(%) of patients	Signs Features	(%) of patients
Fever	100	Abdominal distention	19
Abdominal pain	40	Abdominal Tenderness	39
Vomiting	35	Hepatomegaly	71
Dirrhoea	19	Splenomegaly	52
Constipation	10	Rose spot	2
Cough	8		

Table-II

Laboratory investigations

Findings	% of patients
Anemia	36
Widal Test positive	69
Blood culture positive	17

All patients received injection ceftriaxone and resolution of fever showed a wide range of 1 – 15 days with mean 6.5 days. During this study period no death occurred due to typhoid fever.

Discussion:

Salmonella typhi infection remains a serious problem in developing countries and a major cause of mortality and morbidity. In our study32% of children were under 5 years; and the result is similar with some other studies.[7, 8] In our series dirrhoea was predominant gastrointestinal symptoms than constipation, and in accordance with other studies.[8, 9] Typhoid is still difficult to diagnose, particularly in infant, Matheu et al reported 10 patient in their series presenting with mild illness like fever and cough.[10] In our study 8% children presented with fever and cough.

In a study febrile convulsion was presenting symptom in 20% of the patients.[2] In our study none of the patient presented with seizure. In our study hepatomegaly was higher than splenomegaly (71% vs. 52%), which is accordance with other studies.[2, 11] Ohel and Latitan reported that, in their series hepatomegaly was almost twice as frequent as splenomegaly.[8, 12] In another study in Turkey, Kanra et al found 17% encephalopathy, 73% hepatitis, 4% pneumonia, 4% gastrointestinal bleeding; but we did not find similar features. Some of our children required antibiotics for longer duration even up to 23 days. In case of delayed responders, we did not change the antibiotics when the patients were seen to be stable i.e. not deteriorating clinically and also isolates were found to be sensitive to the given antibiotic. No fatal out come occurred in this series.

Conclusion:

Enteric fever is variable in presentation, none of the investigations is conclusive; sensitivity of widal test is slight higher but specificity is low and both sensitivity and specificity of blood culture are low. So Knowledge of variable presentations could help in diagnosis. It appears that in case of appropriate antibiotic we can wait safely for a longer period; here we waited up to 15 days for convalescence and no harm occurred. Rather frequent change of antibiotics may linger the illness and may lead to antibiotic resistance.

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CASE REPORTS

SEVERE MICROCYTIC ANAEMIA DUE TO CROHN'S DISEASE - AN UNCOMMON PRESENTATION

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Abstract

Crohn's disease is an uncommon disease. Most common presentation is abdominal pain, diarrhea and weight loss. It may present as subacute or even acute intestinal obstruction. Crohn's disease is very rare in Bangladesh. Here we report a case of Crohn's disease where the initial presentation was severe microcytic hypochromic anaemia. Who had repeated blood transfusion for one year. Initially cause was not detected. Later on he presented with subacute intestinal obstruction. After all diagnostic work up no definitive diagnosis could be found. So laparotomy was done in Bangabandhu Shiekh Mujib Medical University (BSMMU). Histopathology report was suggestive of Crohn's disease and he was on mesalazine with significant clinical improvement.

Intrduction

Inflammatory bowel diseases (IBD) are chronic inflammatory bowel disease. Two major forms of non-specific IBD are recognized: Crohn's disease (CD), which can affect any part of the GI tract, and ulcerative colitis (UC), which affects only the large bowel. There is overlap between these two conditions in their clinical features, histological and radiological abnormalities; in 10% of cases of colitis a definitive diagnosis of either UC or CD is not possible. The incidence of CD varies from country to country but is approximately 4–10 per 100 000 annually, with a prevalence of 27–106 per 100 000. It is very rare in developing country like Bangladesh. This disease is a multisystem disease which can affect any part of the body. The most common problem in diagnosing a case of Crohn's disease is similarity with tuberculosis. Its actually a diagnostic challenge to differentiate between disseminated TB.

In this particular case we present an isolated Crohn's disease that was initially presented with severe anemia.

Case Report

A 26-year-old married male was initially presented with profound asthenia two and half year back. For that he was evaluated and diagnosed as a case of severe anemia and was treated with seven unit of blood transfusion on two different occasion, but he lost all his documents. On that time, he had no history of haematemesis, melaena, jaundice, vomiting or bladder-bowel complaints. For the last one year he developed recurrent central abdominal pain. His pain was intermittent and moderate to severe in intensity, compelled to leave his job. He was admitted in BSMMU for further evaluation.

On admission he was severely anaemic, pulse 90/min, BP 100/70 mm hg. There was no lymphadenopathy, bony tenderness, or organomegaly. He had mild tender abdomen with normal per rectal examination. Other systemic examination was also normal.

Investigation revealed Hb: 6.4 gm/L, MCV 67 fL, MCH 20 pg, MCHC 290 g/L, RDW 18%. Peripheral blood film showed microcytic hypochromic anaemia. He underwent extensive evaluation for iron deficiency anaemia after admission to BSMMU. Haemoglobin electrophoresis was normal. S ferritin was 7.13 µgm/L, occult blood test was positive but upper GI endoscopy was normal. After 3 units of blood transfusion Hb level was 8.6 gm/L, but after less than a month Hb level was again 5.2 gm/L with features consistent with iron deficiency anaemia. LFT and S Creatinine were normal. USG of the whole abdomen was also normal.

Radionuclide imaging for GI bleeding failed to show any site of GI bleeding. Barium follows through showed persistent and alternate narrowing & dilatation of ileum. The terminal ileum, caecum, & proximal ascending colon were narrow & contracted consistent with granulomatous disease (Fig 1). He

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developed acute abdomen and we failed to do colonoscopy. He was referred to surgery department and underwent laparotomy on 2nd March 2011.

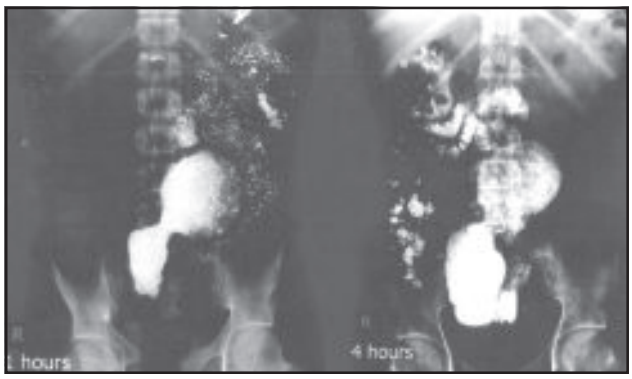

Fig.-1: *Alternate narrowing and dilatation of Ileum*

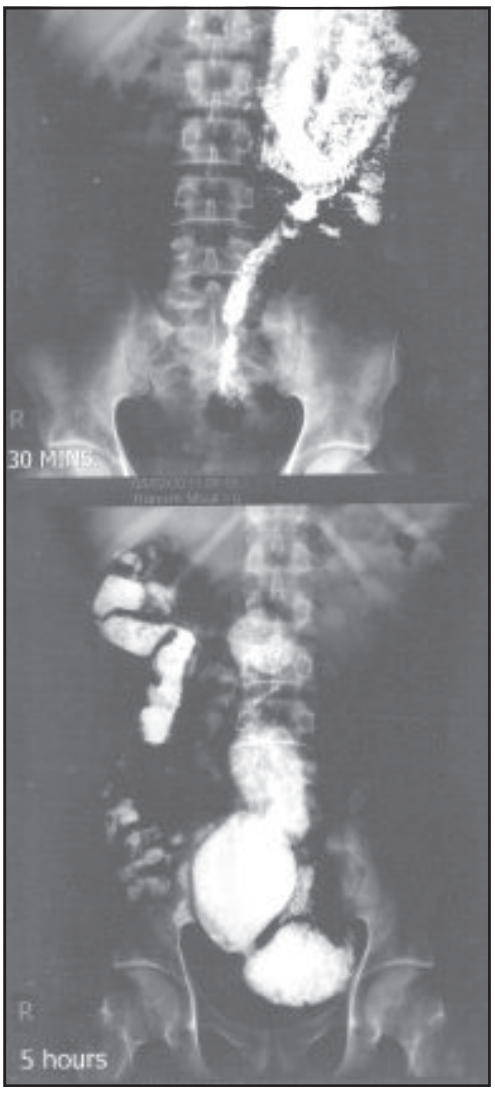

Fig.-2: *Narrowing of the Jejunum & Ileum*

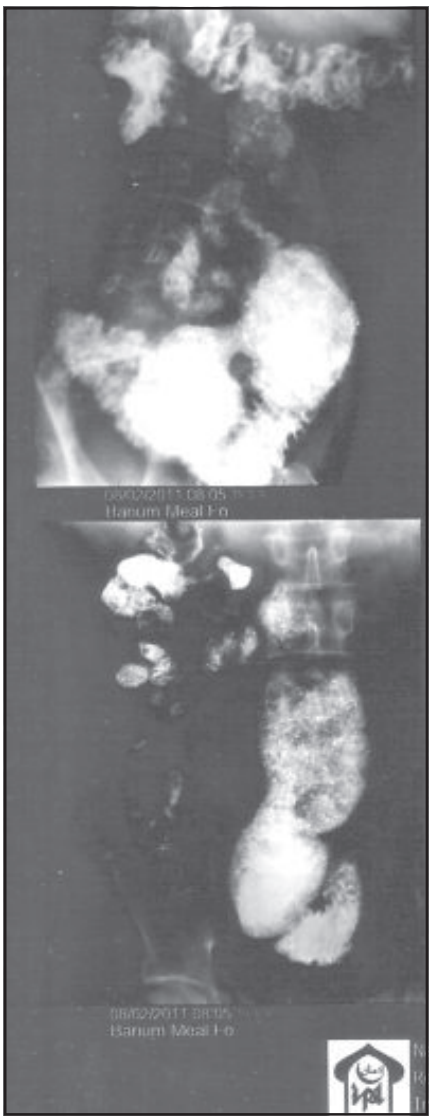

Fig.-3: *Terminal Ileum, caecum and a ascending colon narrowed & contracted*

During laparotomy multiple strictures with an ileo-ileal internal fistula was found. Proximal ileum was distended with collapsed distal part. Multiple congenital bands and adhesions were also noted within the different portions of ileum. Multiple mesenteric lymphadenopathies were seen. Adhesionolysis, resection with ileo-ileal anastomosis was done. Histopathology of the resected ileum showed multiple ulcers lined by granulation tissue overlying the pseudopyloric metaplasia; lining areas shows goblet cell depletion; submucosa shows smooth muscle proliferation; transmural inflammation is also noted; features consistent with Crohn's disease.

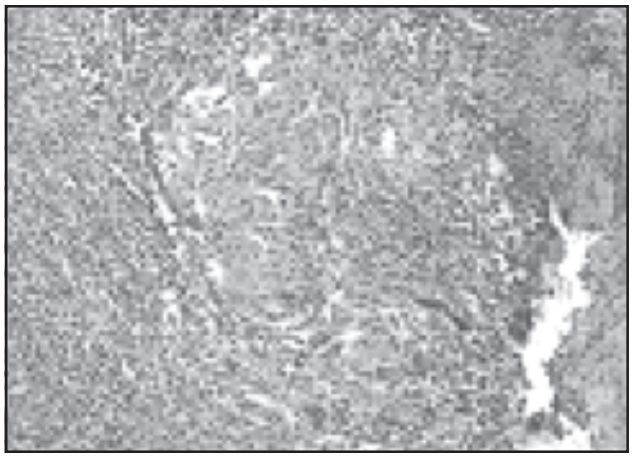

Fig.-4: *Histopathology of resected ileum*

With this finding he was diagnosed as a case of Crohn's disease. He is on mesalazine 1600mg/day with significant clinical improvement.

Discussion

Crohn's disease is a multisystem disease. Most to the cases patient present with abdominal symptoms such as abdominal pain, alteration of bowel habit, haematemesis, meleana, and also extraintestinal symptoms such as joint pain redness of eye, skin lesion etc. But this patient presented with unexplained iron deficiency anaemia. In most patients with CD, anemia is due to gastrointestinal blood loss and chronic inflammation. But there are other causes which should be kept in the list such as autoimmune hemolytic anaemia (AHA). The difference in the incidence of AHA between ulcerative colitis and CD has been frequently noted. For diagnosis of this patient we had extensive workup. At the end we went for surgery. The biopsy confirmed as CD. After confirmation of the diagnosis he was initially started with I/V methylprednisolone. Now the patient is quite settled we are maintaining with aminosalisylates.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing Interest

The authors declare that they do not have any competing interests.

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THYMIC CARCINOMA : A RARE CAUSE OF SVC OBSTRUCTION

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Abstract

Superior vena caval obstruction in majority of cases is caused by bronchial carcinoma. Thymic carcinoma which by itself is a rare malignancy is a very rare cause of superior vena caval obstruction. Here by we are reporting a young ma le of 26 year of age who presented to us with feature of superior vena caval obstruction caused by thymic carcinoma. Initially he was misdiagnosed as a case of tubercular mediastinal lymhadenopathy as a cause of superior vena caval obstruction but after proper evaluation and investigation he was confirmed as a case of thymic carcinoma. Considering the rare cause of SVO and unusual age of presentation, here we are reporting a case of thymic carcinoma.

Key ward: *Thymic Carcinoma. Superior vena caval obstruction.*

Introduction

Superior vena cava (SVC) syndrome results from pathologic processes involving the right lung, lymph nodes, and other mediastinal structures, or by thrombosis of blood within the SVC[1.]

In the preantibiotic era, syphilitic thoracic aortic aneurysms and untreated infection were frequent causes of the SVC syndrome[2,3.] Subsequently, malignancy (90%) became the most common cause[4,5.] More recently, the incidence of SVC syndrome due to thrombosis has risen [5, 6.] Benign causes now account for 20 to 40 percent of cases of SVC syndrome**.**

Thymic carcinoma is a rare tumour of the anterior mediastinum, which often invades adjacent organs such as the lungs, heart and great vessels. It is often asymptomatic and detected whilst investigating other problems, but may present

Thymic carcinoma is a rare tumour of the anterior mediastinum, which often invades adjacent organs such as the lungs, heart and great vessels. It is often asymptomatic and detected whilst investigating other problems, but may present with local cardiovascular or paraneoplastic symptoms. There is a well-known association between thymic tumours and myasthenia gravis. Surgery is the only curative modality,[7] but many patients are elderly with locally advanced disease. Palliative radiotherapy is often advocated.

Case Report:

26 yr old male admitted with sudden onset of swelling of the face, neck and upper part of the chest and upper limbs. He also complained of sudden difficulty in breathing along with alteration of voice. There was no associated pyrexia, cough or chest pain and he did not complain of any fatigue, muscular weakness, weight loss, or loss of appetite. He was otherwise systematically well in himself. He is a smoker with a 10 pack year history.

General examination revealed a plethoric face with congested conjunctiva and non-pulsatile prominent neck veins. There was no evidence of clubbing and no evidence of cervical or generalized lymphadenopathy.

Respiratory examination revealed a respiratory rate 30resps per minute, trachea central, bilateral expansion on both side. Percussion note was resonant with good air entry. Other systemic examination revealed no abnormalities.

His chest x-ray revealed bilateral lobulated soft tissue shadow in superior mediastinal region and lateral view showed the retrosternal space to be full.

The patient's full blood count, liver and renal function tests were normal, however the lactate dehydrogenase enzyme (LDH) raised 921U/L. Montouex test was also negative. Ultrasound whole abdomen was normal but it did reveal a mild right-sided pleural effusion was whichnot visible on chest X-ray. CT scan of the chest performed showed superior mediastinal mass (Fig.1)

CT guided FNAC showed a good number of epitheloid like round cells, some spindle-shaped cells which are compatible with features of thymic carcinoma. (Fig.-2). After confirming the thymic carcinoma he was referred to Cancer Hospital for definitive mangement.

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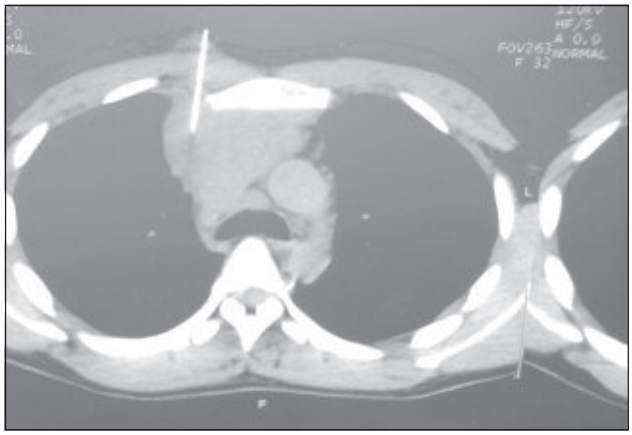

Fig.-1: *Mediastinal mass*

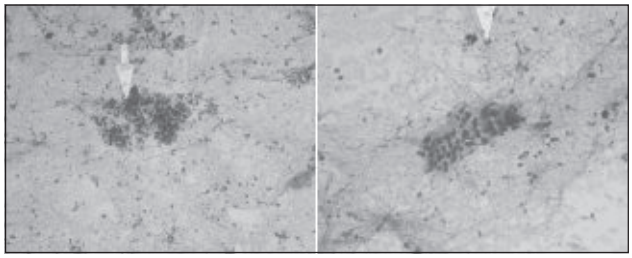

Fig.-2: *Showed epitheloid like round cells, some spindle-shaped cells which are compatible with features of thymic carcinoma.*

Discussion

Superior vena cava (SVC) syndrome results from pathologic processes involving the right lung, lymph nodes, and other mediastinal structures, or by thrombrbosis of blood within the SVC [1].

In the preantibiotic era, syphilitic thoracic aortic aneurysms and untreated infection were frequent causes of the SVC syndrome [2,3]. Subsequently, malignancy (90%) became the most common cause [4,5]. More recently, the incidence of SVC syndrome due to thrombosis has risen [5,6]. Benign causes now account for 20 to 40 percent of cases of SVC syndrome.

Thymomas account for about 20 percent of mediastinal neoplasms. Most thymoma patients are between 40 and 60 years of age, and there is slight male predominance. There are no known risk factors. Thymic carcinomas account for less than 1 cent of thymic malignancies [8]

Symptoms from a thymoma or thymic carcinoma may be due to the presence of a tumor in the mediastinum or may be a manifestation of a paraneoplastic syndrome. Up to one-half of thymomas are diagnosed incidentally, based upon a radiographic abnormality in an asymptomatic patient.

Clinical signs and symptoms are related to the size of the tumor and its effects on adjacent organs (eg, chest pain, shortness of breath, cough, phrenic nerve palsy, superior vena cava obstruction). Less commonly, systemic ("B") symptoms including fever, weight loss, and/or night sweats may be present.

Pleural or pericardial effusions are the most common manifestation of metastatic involvement. Extra thoracic metastases occur in less than 7 percent of patients, most commonly to the kidney, extrathoracic lymph nodes, liver, brain, adrenals, thyroid and bone [9] Metastases to the ipsilateral lung are unusual.

Thymomas are associated with a wide variety of paraneoplastic disorders, the most common of which is myasthenia gravis. These syndromes are seen in 50 to 60 percent of patients, and more than one syndrome may be present.

Thymomas account for about 20 percent of mediastinal neoplasms.

Thymic carcinoma is defined as a thymic epithelial tumor with a high degree of histological anaplasia, obvious cell atypia and increased proliferative activity, which closely resembles carcinoma seen in other organs and is unassociated with immature T cells [10]. Although thymic carcinomas are distinct neoplasms that differ from thymoma, the classification of thymic carcinoma is controversial. A variety of histopathological subtypes of thymic carcinoma have been reported in literature such as squamous cell, spindle cell, lymphoepithelioma like, sarcomatoid, basaloid, small cell, mucoepidermoid, clear cell, mixed and undifferentiated carcinomas [11-16]. Further, Suster and Rosai [17] reported 60 patients with thymic carcinoma and classified them into two prognostic groups based on pathological criteria (low-grade versus high-grade histological type). Thymic carcinoma occurs over a broad age range, with an average of 46 years. Localization of thymoma resembles that of the thymus itself with 75% of thymomas originating in the anterior mediastinum, 15% originating in both the anterior and superior mediastinum, and 6% originating in the superior mediastinum [18]. The other 4% occur ectopically. Diagnosis of thymic carcinoma is suspected by presence of areas of necrosis, hemorrhage, calcification within the mass, or cyst formation; gross invasion of contiguous mediastinal structures and wide spread to involve distant intrathoracic sites and high incidence of extrathoracic metastases. Although paraneoplastic syndromes such as myasthenia gravis, pure red cell aplasia and autoimmune diseases are frequently seen in patients with thymoma but they are extremely rare in cases with thymic carcinoma [14, 19, 20] as seen in our case.

The prognosis is often very guarded owing to the propensity of thymic carcinoma to invade adjacent organs: the median survival from diagnosis is around 2 years.[21] Surgery remains the only curative modality, although complete resection is rarely possble, most patients presenting with advanced disease.

Conclusions

Thymic carcinoma is very rare cause of superior vena caval obstruction. It is hoped that this case report will highlight the need occasionally to consider unusual causes for symptoms and signs related superior vena caval obstruction.

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