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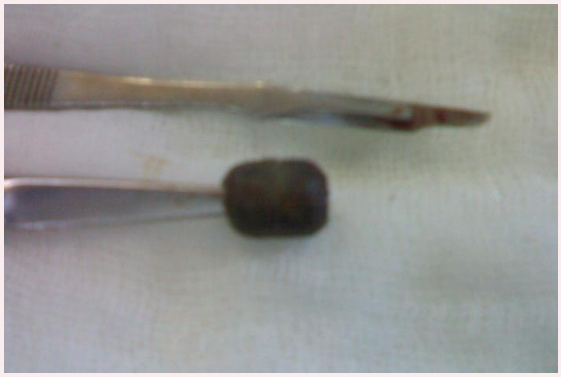

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Rational Drug Therapy: an Answer to Irrationality in Medical Care

Rationality – endowed by reasoning, should be the integral part of any product or service including that of the noble profession of medical care providers. However, this sector being no exception also at times faces irrationality at different levels. Prescribing and dispensing medicines on outdoor/ indoor basis is an integral part of patient care and is a place where the irrationality is prevalent and therefore, is an area of concern. Irrational drug therapy includes over medication, inappropriate medication, self medication, medication with sub standard drugs, combination drugs (when not required) etc. It will lead to false sense of security, masking /confusing /delaying correct diagnosis, emergence of drug resistant organisms, increased cost (for drugs and also managing the drug reactions), wastage of resources and loss of faith in medical profession. For the time being, we will concentrate on overmedication and self medication.

Overmedication: Anything in excess is injurious if it is drug then definitely it will be the worst. Drugs are extensively used in medical care when they are unlikely to produce any benefit. In many instances this does no apparent harm to the patient (except a hole in the pocket) but sometimes the results are tragic. Many drugs in proper doses are beneficial but if given in large doses for inappropriate indication could be potentially dangerous. Drugs interact with each other and even in conventional doses may cause harmful side effects. These may result in disability or in extreme cases death of patients. Therefore, when the patient is not injured, overuse of medicines is undesirable and money-wasting phenomenon. Common drugs involved in this, are antibiotics, pain killers and vitamin supplements. Other drugs also subjected to irrationality are sedatives and cough syrups.

Self medication: Self medication is not a new problem and increases further with increasing education as educated persons tend experiment more. While the irrationality begins with prescription where the drugs are prescribed when actually not needed or not prescribed when required. Dosage and the time schedules of the drugs are also not adhered to. In large number of cases, patients do not visit doctors but take the prescription of other patients (a relative/ friend who suffered earlier with similar symptoms) or their own prescription of earlier episode of illness. Seeking the prescription from the chemist is also common in our country where the regulations are not strictly implemented. Illiterate persons more so in rural areas ask chemist directly to give medicine for that particular symptom and in our country. Chemist may take this privilege without thinking the adverse effect of it.

Finally getting the prescription from doctors of alternative systems or quacks claiming “magical cure” is also seen which further add to the problem.

It is a fact that even the qualified treatment providers rely more on their experience and knowledge (not updated for long) rather than following the evidence based protocols/ therapy prescribed by national organizations and professional bodies. It should be noted that these guidelines are framed by top clinicians of the country in consultation with epidemiologists keeping in mind the local scenario of disease. A general suggestion in this regard is the adherence to the national guidelines wherever they are available.

Second stage comes when the drugs prescribed by the care providers are not taken for the full course. It may happen due to (1) patient does not have adequate money to buy the full course of

medicines, (2) doctor while prescribing medicines has not emphasized this point of compliance strongly and (3) despite the advice from doctors, patients discontinue the treatment in the mid way either because they got relief from symptoms or were not satisfied with cure process (particularly relevant with antibiotic use).

Antibiotic use: A common area of irrational drug use is the antibiotic usage leading to drug resistance for diseases like Malaria, Tuberculosis, HIV/AID, Gonorrhea, Pneumonia etc. Contrary to expectations, antibiotic misuse and/ or overuse are common not only in developing countries like ours but also in developed world. It is estimated that over 20 percent of all antibiotics prescriptions were useless. Partial treatment or early discontinuation (of antibiotics) invariably leads to microbial resistance. Microbial resistance – a byproduct of irrational drug therapy is an area of concern to all and therefore the theme of World Health Day (2011) has been the "Combat anti Microbial Resistance". Indiscriminate use of anti malarial drugs by the care providers has been responsible for the emergence of resistance against chlorquene and quinine. In cases of tuberculosis, early discontinuation of chemotherapy after the relief from symptoms is common and lead to the occurrence of drug resistant tuberculosis. Mono drug therapy by physicians in AIDS patients, results into the drug resistance. Patients of hypertension do not start treatment for the fear of side effects which are mostly unfounded and exaggerated or due to the fact that once the treatment is started, it has to be taken lifelong. At times patients on their own reduce the doses or duration of medication as they are afraid of the side effects. All this happens due to the lack of information either at the level of patients or the care providers. The providers give little time to their patients to explain about how to take the drug, its interaction with other drugs and foods, possible side effects. Since either no or inadequate instructions have been passed to the patients, they discontinue once some relief is observed.

Pain killers: Steroids and non steroid anti inflammatory drugs (NSAID) are probably the most common drugs which are taken as self medication or are sold as over the counter (OTC) products. It is usually an old prescription which is followed time and again by the patient whenever they suffer from pain of similar nature. Excessive use of pain killers is responsible for renal and gastric complications.

Nutritional supplements: Intake of various supplements such as vitamins, minerals, anti oxidants has been over emphasized especially in the western world. Now a days it is happening in our country too with support from mass media (newspapers & TV). While the water soluble vitamins are not that harmful as the excess amount is simple passed on in the urine; same is not true for the fat soluble ones which are stored in the body and their excess can cause the toxicity symptoms. The status of various other supplements containing minerals is still unclear however their unsupervised and prolong intake can lead to the health problems.

Combination drugs: Market is full of formulations containing fixed combination of drugs and therefore the poly pharmacy rather an exception has become a rule especially in case of pain killers, nutritional supplements and antibiotics. Ideally all the drugs should be prescribed as single compound. Fixed combinations are to be accepted only with documented Clinical value of simultaneous use of more than one drug, greater therapeutic benefit and safety of combination than the sum of individual drugs, lesser cost of combination over the cost of individual drugs and better compliance.

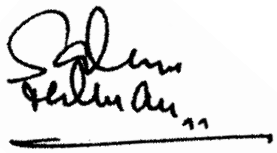
Promoting rational use of essential medicines: Selection of essential medicines is only one step towards the improvement of quality of health care; it should be followed by their appropriate use. Each individual should receive the right medicine, in adequate dose for adequate duration, with appropriate information; follow up treatment and at an appropriate cost. This selection is influenced by number of factors such as local regulatory bodies, procurement of medicines, information (about drugs) so the health care professionals should receive education about the use of medicines not only

during their training but also throughout their career. Medical Council of India (MCI) insists that definite time per patient should be allocated by treatment provider in first/ repeat visits to explain the prescription. Health care providers and pharmacist responsible for dispensing medicines should make use of every opportunity to inform consumers about the rational use of products, including those for self medication.

Our country faces a shortage of doctors and 67 percent population lives in villages which this shortage is even more severe. Here the treatment is administered mainly by paramedical/ health workers. Under these situations, even these workers also should be trained and instructed about the correct use of drugs including their indications, doses and side effects.

Essential drugs and rational therapy are two sides of the same coin. Drug selection must be based on the relevance (definite indication), efficacy and safety (based on the results from adequate studies), quality (contain the amount mentioned over it & within expiry period), cost (of treatment regime & not just unit cost), appropriateness (capability/ expertise of personnel in prescribing, administering, monitoring safety & adverse effects of drug/ drugs). Attention must also be paid to the concomitant, locally prevalent health problems and their influence on pharmaco-kinetics/ pharmaco-dynamics modifying response. Conditions like Malnutrition amongst children and Diabetes, Hypertension and Asthma (amongst adults) are so common that if doctors do not look for them than in all probability patients on their own may also not mention. Similarly when several comparable drugs are available for the same indication, it is necessary to select the one drug which provides the most favorable benefit /risk ratio.

To summarize the principles of rational drug therapy shall include genuine indication, minimum number of drugs, inexpensive and appropriate formulation, monitor for adverse drug reaction and patient education related to drugs and disease.



Saleem-ur-Rehman
Editor –in-Chief

The Profile of Anganwadi Workers and their Working Conditions in Kolar District.

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Abstract:

The Anganwadi constitutes the basic institutional infrastructure through which the ICDS operates at the village level. The key functionary in the anganwadi is the anganwadi worker (AWW) the front line worker who is expected to implement the programme at the village level. She is also a link between the community and other health workers in peripheral areas. Objectives: To study the profile of the anganwadi workers in Kolar, in terms of their socio-demographic characteristics, their working conditions and their job satisfaction. Methods: A cross sectional study of Anganawadi workers. Multistage sampling was adopted and randomly selected 37 anganwadi centres selected for the study. The profile of the anganwadi worker such as socio-demographic data, training, job satisfaction etc was collected. Results: The age of the anganwadi workers was between 15-40 years and all were married. Most (78.3%) of the AWW were educated up to 10th standard. Only 4 (10.8%) AWW were residing in the village where they were working. Majority 54.05% of the workers had work experience of 10-13 years. There was no uniformity in working hours of the AWC. Only 12 (32.43%) were not satisfied with their job. Conclusion: There is no uniformity in the working hours of the anganwadi centre. Most of the anganwadi workers lived in different villages and travelled daily to their work place

Key words:Anganwadi Worker, Job satisfaction, Training, Working Conditions, Residence

Introduction

The Integrated Child Development Service (ICDS) scheme is one of the premier National Human Resource Development Programmes of the Government of India. The scheme was initiated on 2nd October 1975. The programme provides a package of service facilities like supplementary nutrition; Vitamin A, Iron and folic acid tablets; immunization; health checkups; treatment of minor ailments; referral services; non-formal education on health and nutrition to mothers; preschool education to children 3 to < 6 years old; and convergence of other supportive health services like water, sanitation, etc.(1)

The Anganwadi constitutes the basic institutional infrastructure through which the ICDS operates at the village level; each anganwadi caters to a population of 1000 in rural and urban areas and 700 in tribal areas.(2) The key functionary in the anganwadi is the anganwadi worker (AWW) the front line worker who is expected to implement the programme at the village level. The success of the programme depends mainly on her performance. 2 She is also a link between the community and other health workers in peripheral areas; she assumes the pivotal role due to her close and continuous contact with the beneficiaries. (3, 4)

In the present study, attempt has been made to draw a profile of the anganwadi workers in Kolar district, in terms of their socio-demographic characteristics, their working conditions and their job satisfaction.

Materials

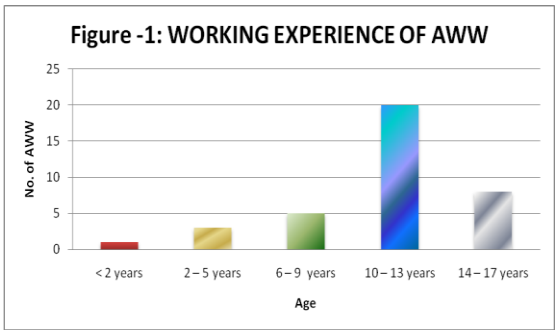
The study was observational in nature through interview of the anganawadi workers and observation of them on their job skills from December 1999 to January 2000. The study

population comprised of the anganwadi workers. Multistage sampling was adapted; out of five talukas of Kolar district Mulbagal taluk was randomly selected. The Mulbagal taluk has a total of 369 anganwadi centers a total of 37 anganwadi centres were randomly selected for the study. The anganwadi workers were contacted and interviewed with the help of pretested and semi-structured questionnaire. The profile of the anganwadi worker such as socio-demographic data, training, job satisfaction etc was collected.

Results

The age of the anganwadi workers was between 15-40 years. The majority of the anganwadi workers (AWW) were in 18-26 years (54.05%) and all were married. Most (78.3%) of the AWW were educated up to 10th standard and rest of the workers i.e., 8 (21.62%) were educated above 10th standard. Maximum AWW i.e., 23 (62.16%) were Hindus upper and intermediary caste and 11 (29.73%) were of lower caste (SC & ST). AWW monthly income was up to Rs.1000/= in majority i.e., 32 (86.48%) of workers and only 5 (13.5%) had income >Rs.1000/=. Only 4 (10.8%) AWW were residing in the village where they were working and the other 33 (89.2%) were travelling from different villages to their work place [Table-1].

27 (72.77%) were proud to be AWW. Majority 20 (54.05%) of the workers had work experience of 10-13 years. Majority (75.67%) of them had working experience as AWW for more than ten years [Figure-1].



There was no uniformity in working hours of the AWC. Most of the AWC i.e., 15 (40.54%) were functioning between 10.00 am to 1.30 pm. Only 12 (32.43%) were not satisfied with their job, the reasons being insufficient honorarium among 32.42%, temporary job in 10.81% and lack of promotions in 16.21%. Nearly 30% of the anganwadi workers had work related problems like, lack of support from the villagers, irregularity in the food supply by the government, and interference from the local people in discharging their duties. Community response was good in 27 (72.97%) towards AWW [Table-2].

Table-1: Socio Cultural Characteristics of Anganwadi Workers

Particulars	No (n=37)	%
AGE (Years)		
21-25	3	8.1
26-30	8	21.6
31-35	14	37.83
36-40	5	13.5
41-45	4	10.8
46-50	3	8.1
EDUCATION		
Until SSLC	13	35.13
SSLC completed	16	43.24
PUC	8	21.62
CASTE		
Hindu Upper caste (Brahim, Achar, Smartha)	6	16.23
Hindu Intermediary (Vokkaliga, Gowda, Kurba, Banajiga)	17	45.94
Hindu lower caste (Dhobi, Bajantri)	3	8.10
SC/ST (AK Bhovi, Nayaka)	11	29.73
TYPE OF FAMILY		
Nuclear	29	78.37
Joint	8	21.63
AWW INCOME		
Rs.1000	32	86.48
Rs.1001-3000	1	2.7
Rs.3000-5000	4	10.82
AWC DISTANCE FROM AWW RESIDENCE		
2-4 kms	14	37.84
4-6 kms	13	35.14
6-8 kms	6	16.22
Native	4	10.81

Table-2: Job Satisfaction of the AWW

Aww Feeling About Her Job	No. (n=37)	%
Proud Of Being AWW	27	72.77
Sad Of Being AWW	7	18.93
Neither Proud / Nor Sad Of It	3	8.10
Working Experience		
< 2 Years	1	2.70
2 – 5 Years	3	8.10
6 – 9 Years	5	13.51
10 – 13 Years	20	54.05
14 – 17 Years	8	21.62
Working Hours Of Anganwadi Centre		
9.30 Am – 1.30 Pm	10	27.03
9.30 Am – 12.30 Pm	1	2.70
9.30 Am – 2.30 Pm	6	16.22
10.00 Am – 2.30 Pm	15	40.54
9.30 Am – 4.00 Pm	5	13.51
Job Satisfaction Of Aww		
Satisfied	25	67.56
Not Satisfied	12	32.44
Reasons For Non-Satisfaction Of Job		
Insufficient Honorarium	12	32.43
Not Treated As Government Servants	4	10.81
No Promotion / Increment	6	16.21
Not A Permanent Job	4	10.81
Pressure From Higher Officials For Achieving The Progress & Maintaining The Records	6	16.21
Work Related Problems Of The Aww		
Lack Of Support From The Villagers	2	5.41
Irregularity In Food Supply By The Government	3	8.11
Pressure To Include All Women Within The Village As Beneficiaries	3	8.11
Interference From The Local Persons In Discharging The Duties	4	10.81
No Problems	25	67.57
COMMUNITY RESPONSE TOWARDS AWW DUTIES		
Good	27	72.97
Fair	4	10.81
Poor	6	16.21

Discussion

The age of the anganwadi worker was between 15 and 40 years and most (78.3%) of them were educated up to tenth Standard. 75.67% of them had working experience as anganwadi worker for more than ten years [Table -1]. In a study conducted in urban slums of Delhi by Anuradha et al reported that 80% of AWW were between 21 and 45 years of age, only 35% of AWW were matriculate and 95% of them had working experience of more than 5 years.(5) (46%) of anganwadi workers belonged to Hindu intermediary caste, while Z.Khan and J.Hasan observed most of the AWW belonged to upper caste.(3)

Contrary to recommendations only 11% of AWW lived in the village where they worked. The other 89% lived in different villages and travelled 2 to 8 Kms daily to their work place, which is similar to the study by Z.Khan and J.Hasan.(3)

Only 12 AWW (32.43%) were not satisfied with their job. The reasons were insufficient honorarium among 32.42%, temporary job in 10.81% and lack of promotions in 16.21%. Maximum number of the AWW 25 (67.57%) had no problems in discharging their duties. Community response was good in 27 (72.97%) towards AWW.

Conclusion

There is no uniformity in the working hours of the anganwadi centre. Most of the anganwadi workers lived in different villages and travelled daily to their work place, this was contrary to the selection criteria. The reasons for not job satisfaction were insufficient honorarium, temporary job and lack of promotions.

Acknowledgements

Child Development Project Officer and Anganwadi Workers of Kolar District and staff of Community Medicine.

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A Study of Total Cost and Cost per Patient Consumed on Disposables in a Tertiary Care Hospital

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Abstract:
Introduction: From a few Dollars to thousands of Dollars spent per capita on health, questions arise about value gained for money spent on health. Hospital costs are increasing everyday, particularly due to ever increasing introduction of everyday new Disposable equipment .It is need of hour for every Doctor and hospital Manager to be cost conscious of various equipments and procedures. Methodology: Preliminary information of routinely used Disposable items was collected from inpatient areas and a proforma was developed for data collection of one year prospective study. Help of nursing staff was sought to fill up the proforma during shift duties. Results: Amount consumed was highest for disposable syringes(23.8%)followed by Blood bags(19.24%),I/V cannula's (12.57%),Rubber Gloves(11.53%)and I/V infusion sets (8.83%).ABC inventory analysis results were almost same as in other organizations. Cost consumption per patient per day on disposables was high(more than double) on patients admitted in surgical ICU (Rs.49.81)and other high dependency areas, than in routine wards of the hospital. Conclusion: Our study revealed the share consumed by different types of disposables utilized in the Hospital. It also observed the ABC analysis trend of Disposable items consumed during the study period. Information gained is a valuable guide for purchase policy and stores management of the Hospital. Cost consumption per patient per day on Disposables observed in the study is a ready made guide to charge the patients ,as per their areas of hospital stay. More and more costing information is required on all services provided in the hospital for planning, budgeting and stores management.

Key words:Cost, Patient ,Tertiary care

Introduction

Many of the world's poorest countries spend less than $10 per person per year on health, high income countries spend thousands of dollars per year(1).Per capita Public health expenditure in India is equivalent to Rs.324.00 annually(2).On the other extreme of the spectrum is $4,631.00 per capita spent in United States on health care annually(3). Yet across this entire range of several orders of magnitude, questions arise about value gained for money spent on health. Our Hospitals have been precisely focused in many specific ways to enhance quality with little or no attention paid to the cost implication of ever increasing introduction of every day new disposable items/equipments. The technological changes have been viewed as being primary driver of Hospital costs. Health administrators therefore must put great effort on cost analysis, formulate reasonable guidelines and establish standards through cost analysis, the purpose of which is to create cost awareness amongst the clinicians, hospital managers and other staff of providing a particular service. Determination of true costs will enable clinical managers to select the most effective method of treating a patient, know the financial implications of adding various items and equipments, relate cost to established norms of care and to contribute to organizations overall financial health. Doctors normally depend on managers for costing information, which may be phrased in a confusing language and is often difficult to relate directly to individual practice. Therefore

Doctors trained in management should be encouraged to undertake cost accounting studies for the costing information service. Present study was undertaken to determine the Direct material cost of disposables consumed as hospital supply in a super specialty hospital in Kashmir to develop cost consciousness among all those involved in patient care.

Objectives

- Study of total cost consumed on hospital supply disposable items.
- ABC inventory analysis of hospital supply disposable items.
- Calculate the cost per patient spent on disposables in different specialties in the hospital.

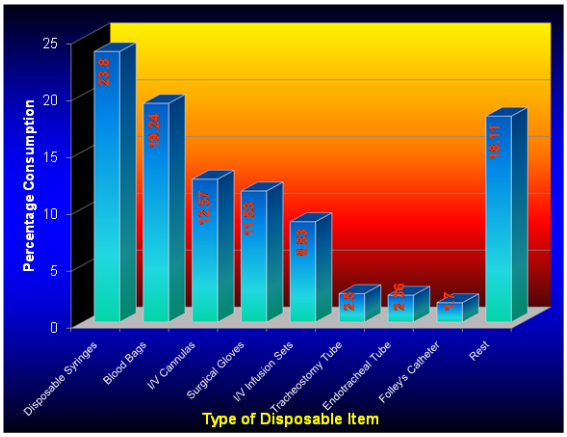
Materials

One year prospective study was conducted in a 650 bedded super specialty Hospital in Kashmir. Pro-forma was printed after collecting preliminary information about routinely used hospital supply disposables in different specialties. Pro-forma was pre-tested, and then applied for data collection. Help of nursing staff was taken to fill up the quantity of each disposable item consumed in each shift. The number of patients discharged, expired and transferred out during the shift was recorded in the proforma. Night shift staff would also record the midnight census of the ward in the Proforma.

Unit cost of each disposable item was obtained from the purchase section of the hospital. Data was compiled to obtain the total quantity of each disposable item consumed in a particular specialty for the study period. This quantity of each item was multiplied by its unit cost to calculate the total cost of the disposable items consumed for the period. Cost consumption per patient per day was calculated by dividing the total cost by the total censes for the same period.

Results

56 types of Hospital supply Disposable items worth Rs. 60,48,230/- were consumed in the hospital during the study period. Disposable syringes consumed the highest share of 23.08 percent, blood bags consume 19.24 percent, I/V Cannulas 12.57 percent, Surgical gloves 11.53 percent and I/V infusion sets 8.83 percent of the total amount..These five items consumed the major share(75%)of the total cost.Cost consumption on tracheostomy tubes(2.5%), endotracheal tubes(2.36%) and folley's cathers(1.7%)followed the above five Disposable items. Least share of 0.02% was consumed on L.P Needles. For all other disposable items, cost consumption ranged between 0.02 percent to 1.7% percent. Results



are represented in Bar chart (fig-I)

Fig.I - Graphic presentation of Percentage consumption on Disposable items.

ABC inventory analysis of hospital supply disposable items revealed that the first five (8.92%) routinely used disposable items consume 75.25% of the total cost consumed on disposable items during the study period. Next eleven types(19.65%) consume 14.95% and the rest forty types (71.43%) consume 9.8% of the total cost spent on disposable items(Table-I) .

Table-I ABC inventory analysis in present study.

Item	Percentage of item	Percentage of monetary value
A	8.92%	75.25%
B	19.65%	14.95%
C	71.43%	9.8%

Cost consumption per patient per day of the above consumed disposable items was found highest for the patients admitted in high dependency areas of the hospital. It was observed as Rs.49.81 on patients admitted in surgical intensive care unit (SICU), Rs.36.96 on patients in Medical intensive care unit(MICU)and Rs26.62 on patients in post operative ward. Consumption on disposable items in the routine wards was found between Rs.8.26 (physical medicine)to Rs.20.71(Medical oncology). Results obtained in various specialties of the hospital are summarized in table II and represented graphically in Bar chart (fig-II).

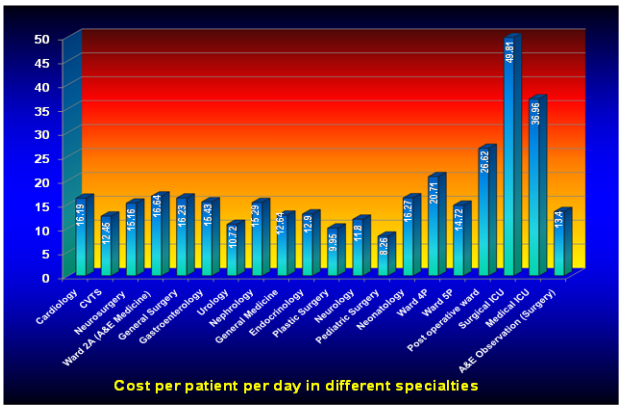
Table II: Cost consumption per patient per day.

S. No	In Patient Area	Cost per patient Per day
1	Cardiology	16.19
2	CVTS	12.45
3	Neurosurgery	15.16
4	Ward 2A (A&E edicine)	16.64
5	General Surgery	16.23
6	Gastroenterology	15.43
7	Urology	10.72
8	Nephrology	15.29
9	General Medicine	12.64
10	Endocrinology	12.90
11	Plastic Surgery	9.95
12	Neurology	11.80
13	Pediatric Surgery	8.26
14	Neonatology	16.27
15	Ward 4P (Medical Oncology)	20.71
16	Ward 5P (Radio Therapy)	14.72
17	Post operative ward	26.62
18	Surgical ICU	49.81
19	Medical ICU	36.96
20	A&E Observation (Surgery)	13.40

Discussion

In a country like ours, the services demanded of and available from the hospital are increasing both in number and complexity. Determination of costs for products and services provided by the hospital is required to prepare a basis for pricing, even if it provides services free or at subsidized rates. Present study was undertaken in a hospital, where almost all services are

Figure-II showing the cost per patient per day consumption.



provided free of cost to the admitted patients in the hospital including routinely used disposable items and a good amount of hospital budget is consumed on purchase of these items. Our study revealed that disposables worth Rs. 60,48,230/- were issued free of cost to the patients admitted in the study areas during the study period, which indicates that the total expenditure on other services(provided free of cost to the inpatients), must be in several million rupees each year, which is a huge amount in a scarce resource country like India. The bigger concern is that these services are provided free of cost to all patients alike whether rich or poor.

Cost analysis studies like the present one helps in planning the purchase of materials utilized in hospitals. Such studies are a guide to purchase of materials consumed in the hospitals. Our study on the basis of observations suggest the purchase of disposable syringes for appr.23% of the total budget reserved for disposables. Similarly 19% should be kept for purchase of Blood bags(Blood bank of a 650 bedded hospital),13% for I/V cannula's,15.5% for surgical Gloves,9% for I/V infusion sets,2.5% for tracheostomy tubes,2.36% for endotracheal tubes,1.7% for folley's catheters and rest 18.11% for all other routinely used disposable items in hospital. ABC inventory analysis of total cost of various inventories in most organizations (4) reveal the results as shown in table-III.ABC inventory analysis of total cost of disposables in our study revealed that the group A items constituting approximately 09 percent of total number of items, consume 75 percent of the total cost,

Group B items (approximately20%) consume 15% of the total cost and Group C items (71%)consume only 10% of the total cost consumed on routinely used disposable items. Our results are therefore in close conformity with the ABC inventory analysis of other organizations and therefore need the inventory control as recommended.

Customers (in hospitals customer is a patient)are charged are per the services provided by any organization or an area of a big organization. These charges depend upon the services provided. The sum total of the amount is the sum of the cost of various services provided to the patient (customer) in the hospital. Hospital administrators should be aware of the costs of various services provided to the patients, even if it is decided to provide services free of cost to the patients. One of the objectives of our study was to calculate the cost per patient per day consumed on disposables in different patient care areas of the Hospital. In our study, the average cost of all areas in the hospital spent on disposable items per patient per day was observed as Rs.15.56. In a study conducted in another tertiary care institute of India (5), cost per patient per day (Direct and indirect Cost) spent on disposables was obtained as Rs 18.14.
Our study revealed the cost of disposable items consumed per patient per day as highest and equal to Rs 49.81 on patients admitted in surgical ICU, followed by Rs 36.96 on patients admitted in medical intensive care and Rs 26.62 in post operative ward. It is because of frequent par-entral medications and strict aseptic precautions like frequent use of caps, masks, gloves being practiced by Doctors and paramedics working in these high dependency areas of the hospital. In other areas, the amount consumed varied between Rs 8.26 (Physical medicine) to Rs 20.71(medical oncology ward), and depended upon clinical specialty, where the patient is admitted. As is obvious from the results (Table-II), patients of medical oncology ward have higher consumption of disposables as compared to patients admitted in other wards. These results indicate that the use of disposable items is in fact more in the areas, where very sick or immuno compromised patients are admitted. Patients admitted in other routine wards are usually stable on oral medication, who hardly need any disposable for parentral medication or barrier protection. Our study revealed that the cost of disposable consumption is more than twice in high dependency areas, than in the routine wards of the hospital. It is therefore necessary for the hospital administrators that the admissions in these areas are reviewed regularly to ensure cost-efficient utilization of services.

Table-III- ABC inventory analysis

Item	Percentage of item	Percentage of monetary value
A	10%	70%
B	20%	20%
C	70%	10%

Conclusion

After review of literature regarding the subject, it was observed that very few cost analysis studies have been undertaken in hospitals so far. More and more costing information from public and private sector hospitals need to be undertaken so that a guideline is available for proper management of hospital resources .Inventory analysis in hospital stores should be a passion of every hospital administrator for proper utilization of material resource. Further, the policy of free services to all, irrespective of economic background needs to be reviewed.

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Seroprevalence of HIV Infection among Individuals Attending ICTC GMC Srinagar, Kashmir, India

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Abstract:
HIV infection is one of the major problems which the mankind is facing presently. The epidemic is growing in many regions and population groups of India. The main purpose of this study is to find the seroprevalence among the person attending ICTC, Government Medical College, Srinagar, who usually practice high risk behavior. 16715 serum samples were collected from patients attending ICTC from April 2002 to October 2009 after pretest counseling. Samples were tested as per the NACO guidelines, reports were issued after post test counseling, and strict confidentiality was maintained. Out of total samples tested, 125 were found positive with sero-reactivity of 0.74%. Male to female ratio of HIV sero-reactive individuals is 6.7:1. Maximum sero reactivity was found in age group 30-39 (46) followed by age group 40-49 in which 29 were sero-reactive. Heterosexual route was the predominant route of transmission, found in 84.3%. Thus this study which shows 0.74% of persons attending ICTC affected with HIV infection, could give us an insight of contributing factors for HIV infection in high risk groups, so that effective protective measures which can be taken.

Key words: Seroprevalance, HIV antibodies, Integrated Counseling and Testing Centre

Introduction

HIV infection has emerged as one of the major health problems in the last two decades. HIV has infected more than 33.2 million people worldwide. There are about 2.3 million people infected in India, with a population of more than a billion people. It is estimated that 39% of those infected are females. (1) The highest prevalence rates are found in India in Andhra Pradesh, Maharashtra, Tamil Nadu, Karnataka, Manipur and Nagaland. (2)

Our ICTC, located in the summer capital of beautiful valley of Kashmir, also happens to be the most well attended ICTC of Kashmir division. This study apart from detecting the prevalence among the persons attending the ICTC, also helps us in assessing and comparing HIV infection distribution in various high risk groups. This information could give us an insight into preventive strategies which can be taken to decrease the transmission of infection in our valley.

Materials

A total of 16715 people attended ICTC of Government Medical College, SMHS Hospital, Srinagar from April 2002 to October 2009. Blood samples were collected only after getting signed informed consent, and pretest counseling for HIV testing. Serum was separated and tested for HIV antibodies at HIV testing laboratory as per the National AIDS Control Organisation guidelines. Samples were initially tested with Micro ELISA (J. Mitra. Co). Samples reactive by Micro ELISA were confirmed by Comb AID (Span Diagnostic Ltd. Surat, India) and Tridot (Biomed Industries) rapid tests.

Results

Out of the total 16715 blood samples tested, 125 samples were found to be HIV seropositive. From among seropositive, 108 were males, 16 were females and 1 was eunuch. Male to female ratio was 6.7:1 and statistical difference between them was significant. Total males tested of HIV were 15580, out of which 108 were found seropositive (0.693%), while as out of 1135

samples of females tested for HIV, 16 were found seropositive (1.40%). Maximum number of seroreactivity was in age group 30-39(46), followed by 29 (1.148%) in 40-49 age groups. In 25-29 age groups, 27 (0.715%) were found seropositive while as in age group above 50, it was 11 (0.98%). In age group 0-14, only one child tested positive.

Table 1: age and sex-wise distribution of persons tested and seropositive individuals

Age group in years	Total no. of persons tested			Seropositive persons		
	male	female	Total	Male (No/%)	Female (No/%)	Total
0-14	48	20	68	1/100	0	1/1.47
15-19	929	200	1129	1/100	0	1/0.088
20-24	3465	170	3635	9/100	0	9/0.24
25-29	3516	256	3772	19/70.3	8/29.62	27/0.715
30-39	4126	339	4465	41/89.13	5/11.36	46/1.03
40-49	2425	99	2524	27/93.10	2/6.89	29/1.148
above 50	1071	51	1122	10/90.9	1/9.09	11/0.98
Total	15580	1135	16715	108/86.4	16 (+1 eunuch) /12.8	125/0.74

Table 2: Route of transmission in seroreactive persons

S no.	Rate of Transmission	Male	Female	Total
1	Heterosexual	104	15	119
2	Homosexual	2	1	3
3	Blood and Blood Products	1	0	1
4	Infected Syringes	0	0	0
5	Parent to Child	1	1	2
6	Not specified	0	0	0
	Total	108	16 (+1 eunuch)	125

Table 3: Marital status of seropositive individuals

Status	Male	Sero positive (Male)	Female	Sero positive (Female)	Eunuch
Married	7539	50	581	8	0
Unmarried	8040	58	554	8	1
Total	15579	108	1135	17	1

Discussion

HIV was first identified in USA, discovered in homosexuals dying of opportunistic infection in California in the summer of 1981. The disease spread rapidly and the first case of HIV infection in India was reported in 1986 in Madras (3) and later it spread to other parts of India. (4)

In India, HIV infection spread is varying with HIV epidemic being maximum in southern states. (5) Across India, HIV prevalence appears to be low among the general population, but high among the high risk groups (6).

In our present study, the persons attending ICTC were more from high risk behavior groups besides few hospitalized patients and persons referred by healthcare workers and NGOs. A large majority of the people in our study were composed of police personnel from other states posted on duty in our state.

The overall prevalence among the ICTC persons was found to be 0.74%. This is much lower than the seroprevalence of 31.28% found in person attending VCTC Nagpur in the year 2004. (7) In another study conducted in ICTC Government Medical College, Amritsar, the prevalence was found to be 10%. (8)

In another study conducted in Manipal from 1991 to 1999, HIV seropositivity increased from 0.38% (1991) to 9.31% (1995) and then lowered to 4.155 in 1995 among the people screened in the Department of Microbiology, Manipal. (6) The downward trend could be due to the awareness and education about healthy sexual practices of the masses.

In our state, the conservative nature of Kashmiris could also be an attributing factor to the low seroprevalence among the persons. In our study, HIV antibody prevalence was higher in men. Male to female ratio is 6.7:1 and the statistical difference between them was significant. The seropositivity in the male was 0.693% while as in females was 1.4%. This is largely due to the fact that the total number of females screened was only 1135 as compared to 15580 males screened over a period of seven and half years from April 2002 to October 2009. In our study, maximum number were found seropositive in age groups 30-39 followed by 40-49 age groups. Other workers have also reported similarly. (9)(10)

The predominant route of HIV transmission in this study was heterosexual route which is consistent with the other studies. (11)(12)

We need to take effective measures to prevent HIV transmission among the population. More emphasis needs to be laid on educating rural people of low socioeconomic status regarding preventive measures like condoms and importance of having monogamous relationship. More awareness and public education is needed so that healthy sexual practices are carried out to prevent spread of infection.

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Self-medication with analgesics for Dental pain: A cross sectional survey.

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Abstract:
Patients suffering from dental pain often self medicate themselves from the pharmacy store in order to get relief from pain, prior to seeking dental treatment. Most of the patient seems to view self medication as a mean to avoid dental treatment. This paper highlights: what percentage of the population seek help of pharmacy staff for medication and Reason for avoiding or prolonging the dental treatment

Key words: Dental pain, Self Medication, Analgesics.

Introduction

Odontalgia is a painful condition which is frequently associated to self-medication with analgesics. Many patients presents to dental clinic for treatment of painful conditions. Prior to seeking treatment, many of these patients will self-medicate with non-prescription analgesics (NPA), and some will unintentionally overdose on these products.

Self-medication is an age old practice in India, mostly in patients with dental problem, and it has always been a very controversial and debated issue in doctor-patient and pharmaceutical relationships. In a country like India, most of the country's population lives in the villages and, paradoxically, most of the country's doctors are in urban areas.

The World Health Organization (WHO) has pointed out that self-medication can help prevent and treat ailments that do not require medical consultation and provides a cheaper alternative for treating common ill-nesses1. However this does not holds true for dental treatment, as the patient takes analgesic to get relief from the acute symptoms, by the time the patient visits the dentist, the teeth which could have been saved would now need to be extracted.

We need to have involvement of health care professional in educating the patients. The health professionals should include the chemists in educating the masses regarding misuse of the drug and ensure these poorly educated patients reach the hospital and take a professional advice on time.

Materials

The study included all the adult patients above the age of 18 years who reported to the Department of oral and maxillofacial surgery with dental pain during the period of November 2010 – December 2010. Written informed consent was obtained from all the subjects who volunteered to participate in the study. A total of 627 patients participated in the study. The information pertaining to self medication was obtained using a preformed and pretested questionnaire containing 11 items. Interns posted in the department were trained to ask questions and record the data.

Definition of self-medication used was "Medication that is taken on patient's own

initiative or on advice of a pharmacist or lay person."

Results

Out of 627 patients, 134(21.37) % patients gave a history of self medication, of which 97(72.38%) were males and 37 (27.61%) were females. The percentage of the population taking advice for dental pain from the chemist was 57.46%.

Reasons for taking self medication.

Reasons for taking self medication	Percentage of patients
Cost of the treatment	24.62%
Travel to a far distance to take treatment	23.13%
Unavailibity of a Dental Surgeon in the area.	17.16%
Fear for dental Treatment	14.92%
Time saving	12.68%
Lengthy waiting period for consultation	07.46%

Source of information regarding analgesics:

Knowledge about analgesics	Percentage of patients
Chemist	57.46%
Previous / old prescriptions	23.13%
Relatives / friends	15.67%
Advertisement	03.73%

Discussion

This type of study, by interviewing the patients using a self administered questionnaire, is largely dependent upon information given by respondents.

Previous studies on self medication for common illness in India shows in range between 31.3% to 82%2,3,4, In a study of rural Maharashtra, Phalke et al4 has identified the prevalence of self-medication for overall ailement to be 82 % (one of the highest reported). Few Studies have been done on self medication for dental pain. In the present survey the prevalence of self medication with analgesics was 21.37%, which is quite less when compared to similar study done by Baños JE et al 5 self medications with analgesics for dental pain was 70%. In our study men were more commonly seen self medicating than females for their dental pain.

In our study we found 57.46% of patients seek advice from chemist for their dental pain, which was quite high when compared with the previous study by Shanmuga P et.al6 in which they showed 22.4% of the pharmacists dispensed antibiotics and painkillers without any referral. In a study done by Phalke VD et al4 the major source of procurement of drug were chemist shop (36.1%) and other shop (54.18%) including grocery shop. Phalke's study was on overall self medication for common ailment; our study was concise to dental pain. Banos JE et al(5) did their study among Spanish population where literacy and health awareness is quite high showed most of the patient selected themselves the drug and only a small number were advised by pharmacist or non health professionals for dental pain. Contradictory results were obtained in the current study were 57.46% of the subjects relied on chemist's advice.

Table: I: Percentage of the population taking advice from the chemist

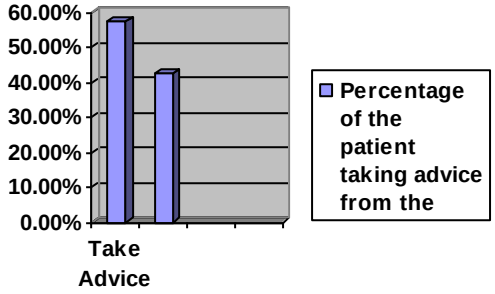


Table: II: Percentage of the patients who check expiry date of the drug

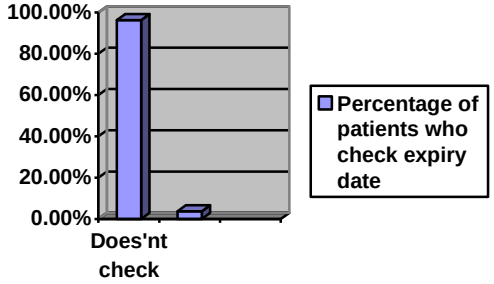
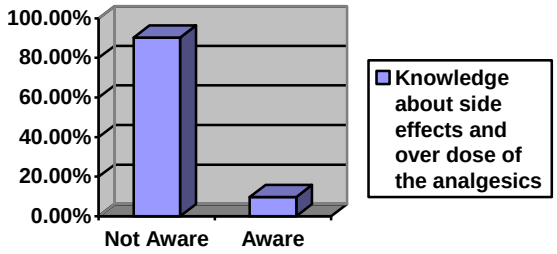


Table: III: Knowledge about side effects & Over dose of analgesics



Of the 134 patients, none of the patients in our study had the complete knowledge about the analgesics; most astonishing observation from our study was 121 patients were not aware about side effects. 2 patients with history of asthama took brufen from the chemist. 21 patients gave the history of taking analgesic for 1 to 3 months. Present study showed cost is the main reason for delaying dental treatment followed by unavailability of dental or medical staff in the area.

Present survey highlights pharmacist are no more dispensers of medication to patients but their role has expanded to giving medication to the patient. This is a matter of great concern since short-term pain relief means patient will postpone consulting the dentist or physician, thereby the opportunity to diagnose the disease in early stage will be missed. And in case of dental infection, those teeth which could have been saved with timely intervention now need to be removed. The concept of self medication is good for acute pain where there is unavailability of dental care, provided there should be proper education via media & literature and through the chemist, so that patient takes dental treatment on time. For this the chemist should do their bit of role in stopping self medication.

Conclusion:

The Current survey shows majority of the patients with dental pain self medicate from the chemist, the major reason was cost of the treatment; most of the patient had poor knowledge of the drug which they were taking.

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An Epidemiological Study On Reproductive Tract Infections Among Rural Women Of District Budgam

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Abstract:

The aim of the study was to assess the prevalence, sociodemographic determinants of reproductive tract infections(RTI) among rural women in Nagam,Budgam Objectives: 1. to estimate the prevalence of RTI among women of reproductive age by using the syndromic case definition. 2. To find out other socio-demographic variables associated with of RTI in women. Study design: Crossectional. Setting: Twelve villages in rural area. Participants: 424 eligible women in the reproductive age group (i.e. 15-45 years). Study period: One year. Study variables: Age, Age at marriage, literacy status, number of live children, symptoms (according to the Syndromic approach), treatment seeking behaviour. Statistical analysis: Percentages, Chi square test. Results: Prevalence of RTI/STI came out to be 53.54%. More than two third of the symptom-positive women were of 25-29 years of age. Prevalence of RTI was found to be highest among women with 1 or 2 live children (55.4% and 67.5%). The symptoms were also common in illiterate (60.2%) and those women using cloth during menstrual cycle (64.8%). The commonest symptom of RTI was vaginal discharge (53.54%) followed by lower abdominal pain (26.7%). Treatment seeking was very low as more than two third of the women had no consultation for their symptoms. Conclusion: As prevalence of RTI among rural and illiterate women is quite high it indicates the urgent need for effective and culturally sensitive health education, particularly targeted to the poor rural population.

Key words: Reproductive tract infection, Syndromic case definition, illiterate

Introduction

Reproductive tract infections (RTIs) among women have become a widespread health concern.[1] Consequences of RTIs are numerous and potentially devastating. These include postabortal and puerperal-sepsis, ectopic pregnancy, fetal and perinatal death, cervical cancer, infertility, chronic physical pain, emotional distress, and social rejection of women. In Indian community based studies, the range of self-reported morbidity has been reported to vary from 39–84%[2]. The problem of RTI/STI morbidity in women is largely due to ignorance, low level of awareness regarding sexual and reproductive health and other social factors like low female literacy, cultural factors and taboos - all withholding the women from seeking health care for RTI/STIs. Many of these infections are asymptomatic and unnotified (80 percent Gonococcal and chlamydial)[3].

Though the Reproductive tract infection is important public health problem among the women but there are only few community based studies which have been done in Kashmir to find the prevalence and its sociodemographic determinants. Because of the poor treatment seeking behaviour of women with RTI the actual prevalence especially in rural areas is yet to be determined at community level. In this context the present study has been taken up not only to find the prevalence and it sociodemographic correlates but also to identify the need for evidence based intervention for its control and prevention.

Materials

A community based cross-sectional study was conducted over a period of one year from May 2008- June 2009 in block Nagam of district

Budgam. The block has two functional PHCs and 7 subcentres. From each PHC area six villages were selected randomly using random number table .At village level selection of eligible women was done by systematic random sampling. Considering 50 per cent prevalence rate of RTIs among the married women in the age bracket of 15-45 the sample size of 400 married women was calculated by using the formula ,$S = Z^2PQ/L^2$.The permissible error was taken as 10% within 95 per cent confidence limits ($p<0.05$).

A predesigned and pretested schedule was used to collect information related to reproductive tract morbidity. After taking the informed consent from the study subjects information was collected regarding age, age at marriage, education, family income, parity, use of contraceptives (IUCD) and Menstrual Hygiene. The second part dealt with the assessment of self-reported morbidity. Married women were asked whether they were having any problem related to reproductive tract, followed by different questions on presence of unusual vaginal discharge, nature of discharge, pain in lower abdomen, ulcers/swelling in genital areas and other symptoms of RTI (as per WHO Syndromic Classification). Information was also collected regarding treatment seeking among all those who were found to have symptoms of Reproductive tract Infection.

Results

A total of 424 women were interviewed and 227 of them were found to have RTI giving a prevalence of 53.54%. The age trend shows that maximum cases were found in 25-29 years old age group (70.83%). The difference was found to statistically significant (X2 =.27.14, p <0.001) .Those women who were married at earlier age showed higher prevalence (75% for those who got married at <18 years of age). The different was found to be statistically significant (X2 =.26.84, p <0.001) .Prevalence of RTI was found to be higher in illiterate women (60.20%) and it showed a decreasing trend with increase level of education. The prevalence of RTI was significantly less in women with no children (23.52%) and difference was statistically significant(X^2 =.27.02, p <0.001). A total of 48 women were using IUCDs and among them 75% found to be suffering from RTI (p<0.001). The prevalence of RTI/STI was found to be highest in those women who were using old washed cloth (64.86%) and least in those using sterilized pads (18.1 per cent). The differences in proportion were also found to be statistically significant. As far as Menstrual practices are concerned the prevalence of RTI/STI was found to be highest in those women who were using old washed cloth (64.86 %) and least in those using sanitary pads (33.60 %)(P <0.001).(Table 1)

Table 2 shows the most common symptom of presentation was vaginal discharge (53.54%) followed by lower abdominal pain (26.70 %). Swelling and / Ulcer in genital area were found in 8.7% of women. Other associated symptoms were found in 4.24%.(Table 2)

Table 3 shows Out of the total women suffering from RTIs as per WHO Syndromic approach majority (71.36%) did not seek any treatment.

Discussion

The prevalence of RTI in present study was found to be 53.54% which is high probably due to early age of marriage, Illiteracy and lack accessibility to health services. The results of some other community based studies also showed higher prevalence of RTI among the women of reproductive age[4-7] (15-45 years). Our study showed higher prevalence in age group of 25-29 years (70.83%) showing a relation with period of high fertility. According to findings of a hospital based study the highest prevalence of sexually transmitted infection in our country has been found in the age group of 21 to 30 years, which is attributed to higher sexual activity in this age group[6]. The findings are also supported by findings of community based study where higher prevalence of RTI was found in the age status, promiscuity and traditional taboos against openness about these diseases are the usual factors responsible group of 21-30 years[7].

Table 1: Sociodemographic determinants of RTI among study women

Variables		Total Number of females (n)	Number of females with symptoms of RTI (n)	Prevalence of RTI (%)	x^2	P Value
Age of woman	<=24	34	14	41.18	27.14	<0.001
	25 to 29	120	85	70.83		
	30 to 34	132	73	55.3		
	35 to 39	107	42	39.25		
	>= 40	31	13	41.94		
	Total	424	227	53.54		
Age at marriage	< 18	69	52	75.36	26.84,	<0.001
	18 – 21	245	133	54.29		
	22-25	78	34	43.59		
	>=26	32	8	25.00		
	Total	424	227	53.54		
Women Literacy	Illiterate	299	180	60.20	19.03	<0.001
	Primary	69	28	40.60		
	Middle	27	8	29.6		
	High and above	29	11	37.93		
Contraceptive Practice	IUCD User	48	36	75	10.02	0.002
	Non user	376	191	49.2		
	Total	424	227	53.54		
Number of children	0	17	4	23.52	27.02	<0.001
	1	74	41	55.40		
	2	114	77	67.54		
	3	134	75	55.97		
	4	52	19	36.53		
	>- =5	33	11	33.33		
	Total	424	227	53.54		
Menstrual practices	Sanitary pads	125	42	33.6	29.38	<0.001
	Using newer cloth for every cycle	151	89	58.94		
	Old washed cloth	148	96	64.86		
	Total	424	227	53.54		

Table no 2: Symptoms of Reproductive Tract Infection in studied women

Symptoms (As per WHO Syndromic Classification)	Number of female (n)	Number of Female with symptoms (n)	Prevalence (%)
Vaginal Discharge	424	227	53.54
Lower Abdominal Pain	424	113	26.70
Ulcers &/ swelling in genital areas	424	37	8.70
Other Symptoms(Burning micturation, fever , itching , dyspareunia)	424	18	4.24

Table No 3: Treatment seeking behaviour of women suffering from RTIs

Treatment Practices	Frequency (n)	Percent (%)
Government Hospital	36	15.85
Private Hospital	20	8.81
Hakeem	9	3.96
No Treatment received	162	71.36
Total	227	100.00

Prevalence of **RTI** in Nagam was found to be highest among women with 2 or 3 live children (67.54% and 55.97%). In his article on

prevalence of RTIs/STDs among women of Agra district Deoki Nandan et al (2002)[5], also reported maximum prevalence in women having one or two children. In our study, the highest prevalence (60.2%) was among the illiterate women. Deoki Nandan et al (2002)[5] reported a similarly high prevalence among illiterate women. Data from **NFHS**-II (1998-99)[8] and Pawanarkar (2004)[9] reported a higher prevalence of lower **RTI**; (41% and 42.9% in illiterate women). This is a general phenomenon among the populations of Asia, including India. Substandard hygiene, low socio-economic for this high prevalence[10.]

The prevalence of RTI among IUCD users was found to be higher (75%) which may be due to poor hygienic practices. The results are in accordance with finding of another study[11] where high prevalence (40%) of RTI was found among IUCD users though it was found to be lesser than the results of our study

In our study higher prevalence of RTI was observed among those who were using old used cloth during the cycles. The reason for using cloth during menstrual cycle in our study seems be due to cost, unavailability of sanitary pads in local market and ignorance about the use of sanitary pads. The findings are supported by the results of a study where prevalence was seen more in those using cloth during their menstrual cycles[12]. In another study conducted in Rajasthan by Khanna *et al* three-fourths of the girls used old cloth during their periods and only one-fifth reported using readymade sanitary pads[13].

The most common symptom of RTI was vaginal discharge (53.54%), followed by abdominal pain and then other symptoms. Many Indian study show similar findings[, 9, 11,14].

As far as the treatment seeking behaviour is concerned 71% did not seek any treatment. Low treatment seeking could be because of unavailability of female medical officer at health facilities, lack of privacy and shyness on part of females to reveal the symptoms. Low treatment was supported by finding of another study conducted among infertile The results were similar to the findings of another where 80% of the females did not seek treatment due to similar reasons.

Conclusion:

The prevalence of RTI in women was found to be high and most common symptom of presentation was vaginal discharge followed by lower abdominal Pain. The prevalence of RTI decreased with increased age of women, age at marriage, literacy and number of children. Poor menstrual hygiene and use of IUCD as contraceptive showed higher prevalence.

As the burden of disease is increasing, so it is very important to involve the grass root level workers in identifying the disease using simple WHO Syndromic approach and facilitate treatment seeking. There is a need to improve the communication skills of the grass root level workers so that they are can discuss various issues related to reproductive health with the women freely and bring about positive behaviour change in them .

Limitations:

Because of illiteracy, Ignorance and shyness on part of women in the study area, they didn't feel free to discuss their sexual history in term of extramarital sexual activity and related questions to identify other important risk factors associated with disease.

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Item Analysis of MCQ from Presently Available MCQ Books

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Abstract:
Market has been flooded with books containing a large number of multiple choice questions. MCQ are now days frequently used in most of competitive exams as well as included in the undergraduate and postgraduate formative as well as summative assessment, so study is carried out to find out different parameters of item analysis of MCQ from presently available MCQ books. Materials and Methods: 70 single best answer MCQ in papers taken from four subjects of second Year MBBS were analyzed to obtain their difficulty index ,discrimination index and distractor efficiency.Results: There was a wide distribution of item difficulty indices in all the MCQ analyzed. The relationship between the difficulty index (P) and discrimination index (D) of the MCQ items suggest high discriminative power of difficult MCQ. Maximal discrimination occurred in 27 item and excellent discriminative power was seen in 14 items out of total 70 items. 33 distractor were not effective.Conclusions: Not all MCQ published in presently available MCQ books are up to the standard as some of the items demonstrate zero discriminating potential and some shows negative discrimination and some question were too difficult There is a need to evaluate the effectiveness of our MCQ books and need of validated MCQ

Key words: Difficulty index, discriminative index, MCQ books, Item analysis, assessment methods

Introduction

Evaluation has a profound effect on nature of learning and is considered as the single most important variable in directing the students to learn in a particular way[1]. MCQ are now a days frequently used in most of competitive exams as well as included in the undergraduate and postgraduate formative as well as summative assessments.

Multiple-choice questions (MCQs) are used more and more in departmental examinations or as comprehensive examinations at the end of an academic session.[2] They may be used to determine progress or to make decisions regarding the certification of a candidate.[3] They may also be used to identify strengths and weaknesses in students as well as to provide feedback to teachers on their educational actions.

Writing MCQs is a relatively difficult task. However, the effort expended in item Construction is rewarded by the ease and reliability of marking.

Good MCQs are not easy to construct, where possible, it is highly desirable to pilot the questions to assess functionality, grammar, possible ambiguity, the plausibility of distractors and the accuracy of the question and answer.

The manner in which the test questions are prepared and put together to form an examination, and the procedure for scoring, analyzing and reporting the results, all have a bearing upon the conclusions drawn from the performance of the individuals and groups tested. MCQs, whether in the format of "true/false" or "one best- answer", are expressly designed to assess knowledge. They have the advantage of sampling broad domains of knowledge efficiently and hence reliably.[19]

Summative MCQ tests work best when a question bank is built up over a period of time from questions subjected to item analysis when

they are used in testing. This analysis is used to identify the extent to which a question can discriminate between good and poor students in the subject, and can indicate its degree of difficulty. This information about each MCQ is used to construct an appropriate exam or test paper using MCQs from the developed question bank[20].

Ever since the era of entrance examinations started, the market has been flooded with books containing a large number of multiple choice questions (MCQs). Students generally spend more time mastering the MCQs than they spend on reading a text book. Such a situation is likely to distort learning. A further problem arises due to 'quality' of MCQs contained in these books.

So just how "good" are our MCQ books? How effective are the individual MCQ items in books can predict the students' overall performance? Have they maintained similar standards? These are some of the questions we attempted to answer when auditing the MCQ of selected MCQ books.

In item analysis of MCQ, Discrimination index (d) is a measure of the ability of an item to differentiate between good and poor students and difficulty index (P) refers to the percentage of the total number of correct responses to the test item.Detractor efficiency tells how efficient each alternative was in distracting students from correct answer.

The purpose of this study, therefore, was to

1. Analyze the published MCQ in the terms of different parameters i.e. Difficulty index, discriminative index and distractor efficiency and
2. To see the relation between discriminative index and difficulty index.
3. To correlate Difference in Difficulty index & Discriminative index of Different Books

Materials

The MCQ paper contained 70 questions drawn from the 4 major para-clinical disciplines – Pathology, Microbiology, Forensic medicine and Pharmacology. 93 second final year medical students of Govt. Medical college, Bhavnagar, Gujarat appeared in the test. This MCQ were randomly picked up from the seven popular MCQ books available keepping in mind syllabus taught to them till the date of test. All the questions were of one best response type and allowed 60 min to answer 70 questions.

The question papers were scored using the key. There was no negative marking. The scored papers were arranged in order of marks obtained and were later subdivided into 2 groups of 31 each, which were designated as Higher ability group (H) and Lower ability group (L). Based on these groupings, the following indices were calculated for all questions using standard methodology[21]. (a) Difficulty index (p); (b) Discrimination index (d); and (c) Distractor efficiency (DE).

In this study, the item difficulty index (P) refers to the percentage of the total number of correct responses to the test item. It is calculated by the formula P = R/T x100 , where R is the number of correct responses (H+L)and T is the total number of responses (i.e., correct + incorrect + blank responses).

Results

Out The scores obtained by the students ranged from 10 to 40 out of 70. The values of difficuly index are shown in Table 1. There was a wide variation in the values obtained for different item, 27 items had a "p" less then 30, which may be acceptable in competitive examinations.

The discrimination index shown in Table 1. it show poor "d" for 19 items. The numbers of items with a value of less than 0.25 were 25. For three item, there was negative discrimination index, meaning thereby that more L group students were answering it correctly as compared to H group indicating faulty framing of MCQ.

The distractor efficiency shown in Table 2. In one items, none of the distractors was ticked by any student. Put in another way, it means that

out of 210 distractors used in these items (3 per item), 3 were not used at all. Even amongst the distractors that were used 33 failed as effective distractors (< 5% response). Subject wise difficulty and discriminative index shown in table 3

Table 1 Discriminative Index

index	N
Negative	3
Zero	4
0.0-0.2	12
0.2-0.25	25
0.25-0.35	12
>0.35	14
Total	70

Table 2 Destructor Efficiency

Efficiency parameter	Number of items (%) (n=70)
One distractor not used	24(25.8)
Two distractors not used	8(8.6)
Three distractors not used	1(1.07)

Table 3 shows difficulty index and iscriminative index subject wise

	P		D	
Subject	Average	Sd	Average	Sd
Fm	41.0484	23.57428	0.185484	0.178803
Micro	28.629	16.39739	0.21129	0.158542
Patho	32.0968	22.45806	0.145161	0.097666
Pharm	43.871	16.19342	0.303226	0.186751

Discussion

As with other health professional training, the effective measurement of knowledge is an important component of both medical education and practice[25]. Therefore, it is important for us to evaluate our MCQ items to see how effective they are in assessing the knowledge of our medical students.

In present study of item analysis, we had analyzed 70 MCQ of different 7 MCQ books. 18 MCQ were within normal difficulty index of between 50 to 70, 4 out of 70 MCQ item having difficulty index of more than 70, which suggest that MCQ were easy to answer in contrast to 27 MCQ having difficulty index of 30 suggesting difficulty of MCQ.

MCQ with Different difficulty index can be used in different manner i.e. in competitive exam we can use difficult MCQ, while in term ending or formative assessment we should use MCQ with less difficult MCQ as it helps student learn and retain more information and it is to give feedback to student about their lacunae and to boost them to learn more. We also have to keep in mind that must know component should be covered in MCQ of formative assessment.

In case of discriminative index there were total three item with negative discriminative index which suggest that lower group had given correct answer than that of higher group, there were 4 item with 0 discriminative index and 12 item with less than 0.01 discriminative index suggest inability of item to discriminate the student. This type of question should be discarded but before it we have to check for correctness of key or difficult. Out of 70 only 14 MCQ had excellent discriminative index, which can be used in competitive or ranking exam and 12 had good discriminative index, such item can be used in summative assessment. So MCQ book should state with every MCQ that whether it is meant of formative or summative exam or competitive exam.

However, we must recognize that there may be other factors that need to be taken into account when using discrimination indices to categories MCQs as “good” or “bad”, especially when dealing with a multidisciplinary paper. i.e. in competitive exam [26] Thus, Test items with very poor discrimination index should be reviewed by the respective disciplines. It serves as an effective feedback to the departments concerning their educational activities. When a test item appears to be very difficult (i.e., P is very small), it may be that the topic tested is inappropriate at this stage of students’ training, or that it is not taught well or not taught at all in this particular academic session.

Other possible reasons for poor performance on the items (i.e., D is very small) include ambiguity in the wording, areas of controversy and wrong key.

Analysis of Distractor efficiency shows that out of 210 Distractor 33 were having poor efficiency as they are not used by even five student and in three item not a single Distractor used which suggest faulty framing of Distractor . Distractor that are not chosen by any examinees should be replaced or eliminated and distractor should not be used as space filler and should not be created in large no for simply sake of it as they are not contributing to the test's ability to discriminate the good students from the poor students. One should not be concerned if each distractor is not chosen by the same number of examinee

From values obtained at item analysis of MCQ in well known book it appears that not all questions can become a source of learning in this way. There are questions with negative discrimination and there is Distractor which failed to attract even a single student. Thus, a s student who bases his learning on these MCQs is likely to learn sub optimally.Hence these need to be discarded, in addition to a large number of items which need revision.

The era of entrance examinations has made the students depend more on MCQ books[27]. It would be better to give some idea regarding p and d of each question to examiners[28]

The importance of evaluating assessment has been highlighted by Fowell et al[29] who noted that when devising suitable assessment systems, this step of the assessment cycle is often omitted

Conclusion:

Study shows that not all the MCQ present in available books are good or best MCQ. As 0 or negative discriminative index suggest faulty framing of MCQ and also correlated with faulty framing of Distractor. MCQ items that demonstrate good discrimination tend to be in the easy to difficult range. On the other hand, items that are in the difficult to very difficult range are more likely to show negative discrimination. The wide scatter of discrimination needs further investigation, and before we discard an MCQ for poor discrimination, we must first look into the factor(s) that may contribute to such poor discrimination.

There is need of MCQ book with MCQ which are tested by item analysis and so give good content to MCQ bank and if the quality of MCQ is good it indirectly improves assessment and thus learning.

We hope the findings of this study will initiate a change in the way we select our future MCQ items, one of the several methods of assessment used in our undergraduate medical curriculum

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Angiography in extremity arterial trauma: spectrum of angiographic features and correlation with operative findings

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Abstract:
We reviewed the various angiographic findings in 33 patients with extremity injury over 2 years, in a largest trauma centre setting and discuss the angiographic signs of arterial injury and relative occurrences of these findings
Key words: Trauma, Angiography, Occlusion, Intraluminal Filling Defect, Deviation of Course

Introduction

Inspite of recent advances in computed tomography and magnetic resonance imaging, conventional angiography is still a common investigation requested by the surgeons in trauma care setting as it leaves us with scope of diagnosis and endovascular treatment in the same setting, shows distal runoff well, maintains higher spatial resolution; moreover a normal angiography eliminates the need of operative management.[1-4] We at our trauma centre as radiologist are routinely summoned to carry out angiography and endovascular treatment, if need be. Angiographic features of 33 patients with extremity trauma were reviewed and in the following discussion we aim at presenting a pictorial essay on the same; we also aim at presenting relative occurrences of various angiographic features and whether our findings were consistent with that of surgeon's intra operatively.

Materials

Between June 2005 to Jan 2007, arteriogram and operative findings of 33 patients were reviewed in trauma centre setting. Two thirds of patients had history of vehicular accidents or railway accident, others had accidental fall, with suspected vascular compromise (feeble or absent distal pulses, cold extremities, active ooze, palpable fractures etc). These patients were subjected to trans femoral arteriography on Phillips BV 300 C-arm digital subtraction angiography machine with selective extremity injection of Iohexol 350, with 4-5 Fr end hole catheters. The most common angiographic abnormality found in our study was occlusion, others being intraluminal filling defect, deviation of course, pseudoaneurysm and active extravasation of contrast.1 One patient had normal angiography. Features are described as below;

ANGIOGRAPHIC FEATURES:

Occlusion: (Fig 1a and 1b, Fig 2a and 2b, Fig 3a and 3b)

Fig 1a

Fig 1b

Fig 1a and 1b: A 30-years man with history of road traffic accident, presented with absent distal pulses. There is complete occlusion of popliteal artery with its reformation just proximal to bifurcation. Patient was treated with end to end anastomosis, however even after surgery distal pulses did not return.

Fig 2a Fig 2b

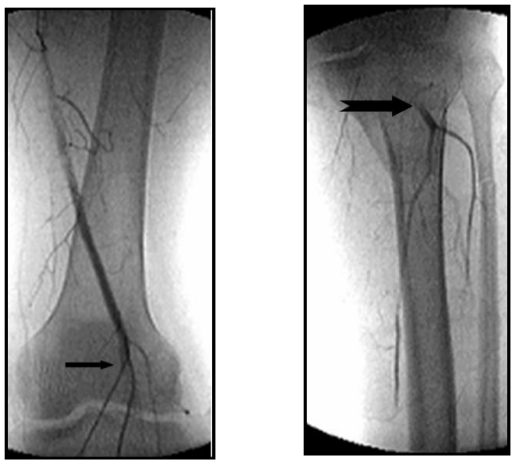


Fig 2a and 2b; A young boy with history of vehicular accident. There is abrupt cutoff in the superficial femoral artery at the level of adductor canal with reformation via collaterals at the level of popliteal artery. Findings were confirmed intra operatively, thrombus was removed and end to end anastomosis was done.

Fig 3a Fig 3b

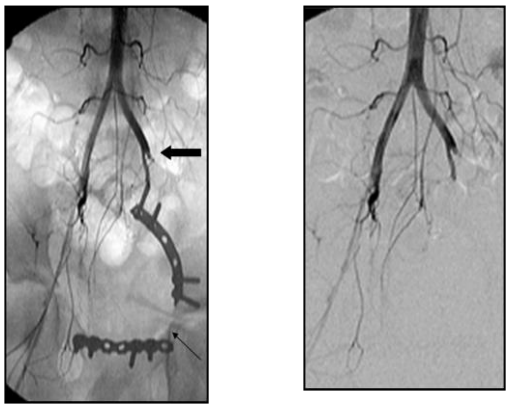


Fig 3a and 3b: A 13-years boy met railway accident, presented with feeble distal pulses with sacroiliac joint disruption. Angiography revealed complete occlusion of left external iliac artery with distal reformation of common femoral artery via Winslow's pathway. A 11cms long transected segment of external iliac artery was found intra operatively, for which resection anastomosis was performed. Three days later, below knee amputation had to be performed.

Occlusion is defined as complete absence of contrast distal to the site of filling defect, with or without distal runoff. It is usually due to arterial laceration, embolic or intimal injury causing thrombosis; however angiographic features are same in all three.[1]

Intraluminal filling defect[5] (Incomplete occlusion): (Fig 4a, b, andc, Fig 5,Fig 6) Incomplete occlusion is constant filling defect in opacified lumen, occurring due to intimal flaps, thrombosis or emboli. The Intraluminal filling defects appear as either thin transverse or serpgineous strips (due to intimal flaps) or longitudinally oriented with respect to the vessel with contrast trailing down adjacent to filling defect and interpreted as the trailing edge of thrombus or embolus. Compared to these filling defects, thin longitudinal strip which are sometimes seen are due to flow artifacts.[5]

Fig 4a Fig 4b Fig 4c

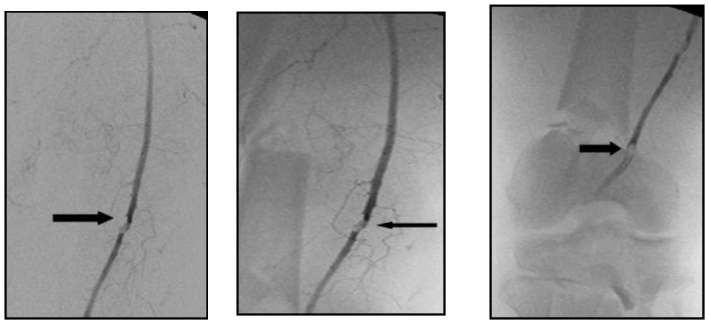
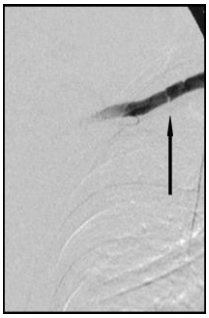


Fig 4: A 20-year young man had upper limb trauma in a road traffic accident. Angiography shows transverse web like filling defect in right subclavian artery which is suggestive of intimal flap. As the distal pulses were feeble, the patient was taken up for surgery, findings were same as that of angiography and extra anatomical venous grafting was done.

Fig 5 Fig 6



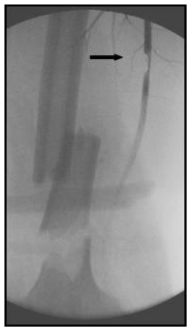
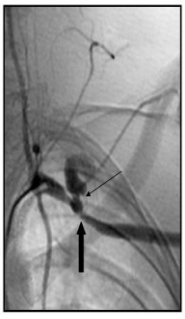


Fig 5: A 28-years man with history of railway accident and segmental fracture of femur. Angiography revealed eccentrically placed filling defect with contrast trickling along the edge of filling defect s/o thrombosis. Findings were same intra operatively.

Fig 6A 37-years male with history of lower limb trauma presented with supracondylar fracture and fracture shaft femur. Angiography revealed an oval, central, longitudinally oriented filling defect with contrast trailing along its edges on either side which is suggestive of incomplete occlusion of lumen by embolus; in superficial femoral artery. Also seen was filling defect which is longitudinally oriented and is irregular with appearance akin to intra luminal filling defect due to intimal flap.Superficial femoral artery contusion was found intra operatively for which above knee amputation was done.

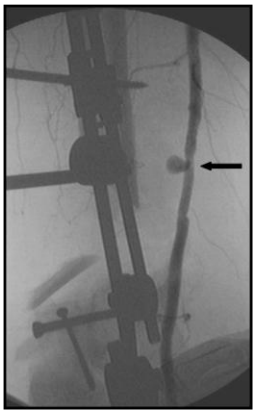
Pseudoaneurysm: (Fig 7, Fig 8, Fig 9a and 9b)
Post traumatic pseudoaneurysm is defined as localized leakage of injected contrast from arterial lumen into a regular, well defined rounded out-pouching which is continuous with arterial lumen.There is rapid wash out of contrast on subsequent angiographic series.1

Fig 7 Fig 8



Usually occurs due to partial tear of tunica media. This has to be differentiated from active extravasation of contrast wherein there is delayed wash out of contrast and the extra vascular blotch is irregular

Fig 9a Fig 9b



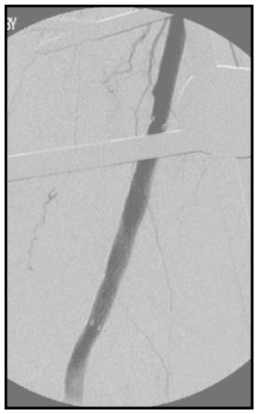


Fig 7: A 75-year-old man, presented with fracture of shaft of femur. Angiography revealed a well defined blob of contrast adjacent to opacified arterial lumen communicating with it,; rapid wash out of contrast was seen on subsequent angiographic series. These findings were consistent with pseudoaneurysm. Findings were confirmed intra operatively.

Fig 8: A 25-year male with history of upper limb trauma, presented with feeble distal pulses. Angiography revealed pseudoaneurysm of the subclavian artery. The patient was successfully operated upon (neck of aneurysm indicated with thin arrow).

Fig 9a and 9b: A middle aged male with lower limb trauma. Angiographic features were suggestive of pseudoaneurysm. Endovascular treatment in the form of covered stenting (fig 9b) was performed. Post endovascular treatment the pulses were well felt.

Deviation of course: (Fig 10, Fig 11)
One of the minor angiographic features, which in isolation is of not any major clinical significance. It is defined as displacement of the blood vessel from its normal course due to displaced fracture fragments, hematoma, and tissue edema. It is generally associated with

other angiographic features which are responsible for vascular compromise.

Fig 10

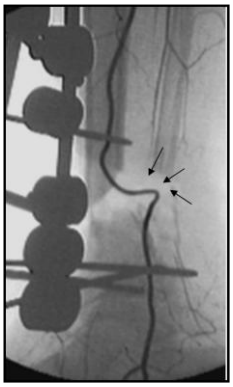


Fig 11

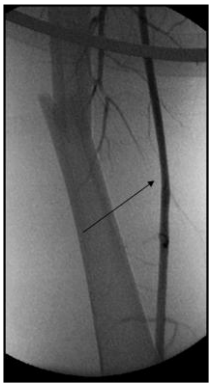


Fig 10: A21-year old male, with fracture of lower one third tibia and fibula: Angiography shows adjacent posterior tibial artery to be deviated from its normal course. Also seen is occlusion of anterior tibial and common peroneal artery.

Fig 11: A young boy with lower limb trauma; There is fracture shaft femur. Angiography shows deviation of superficial femur artery.

Luminal narrowing: (Fig 12a, 12b, Fig 13)
Luminal narrowing can be regular or irregular. Regular narrowing is due to spasm of vessel; seen as smoothly tapering vessel. The second type is seen as irregular lumen with irregular periodicity, which is sharply demarcated from normal lumen of the artery (i.e. narrow zone of transition from normal to abnormal). This type of irregular luminal narrowing occurs secondary to intimal damage; however it is often not associated with any vessel injury (seen as beaded appearance of the vessel or stationary wave artefacts).[5]

Fig 12a

Fig 12b

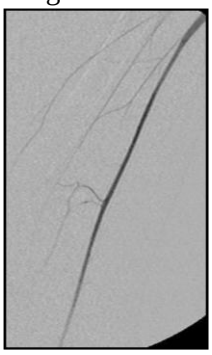


Fig 13

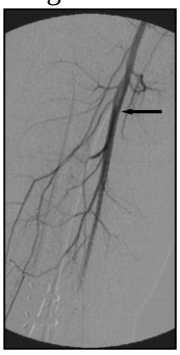


Fig 12a, 12b: A 27- year -old male with upper limb trauma with feeble distal pulses. Angiography reveals uniform narrowing of brachial artery. Intra operatively no thrombus was removed, however saline infusion led to return of pulses.

Fig 13: A 6-year child with history of right lower limb trauma, with fracture shaft of femur. Internal fixation was done, however peripheral pulses were not felt. Angiography revealed beaded appearance of superficial femoral artery, amongst other findings.

A-V fistula: (Fig 14a, 14b)
This is relatively uncommon finding. There is rapid filling of veins with non/poor visualization of uninvolved arterial segment due to redirection of blood into veins. Early filling and densely opacified, dilated, and tortuous veins are seen originating from enlarged proximal arteries.[5]

Fig 14a

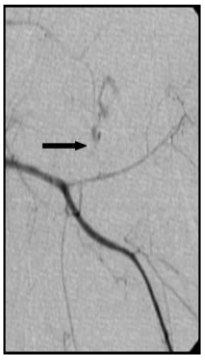


Fig 14b

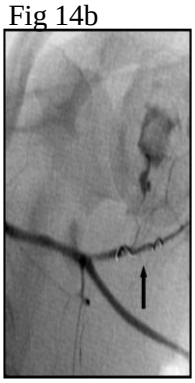


Fig 14a, b: Angiography shows irregular pooling of contrast, seen communicating via a narrow neck with a branch of axillary artery. This did not wash out rapidly on subsequent angiographic series. These findings are consistent with active extravasation. Coil embolisation (Fig 14c) of the bleeder was done, however the patient expired due to associated injuries and acidosis.

Active extravasation of contrast: (Fig15a, 15b, 15c, 15d, and 15e)
It is seen as extravasation of contrast from arterial lumen into ill defined extra -vascular space via a thin neck with slow wash out of contrast.[1]

Fig 15a

Fig 15b

Fig 15c

Fig 15d

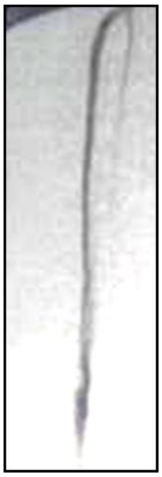


Fig 15e

Fig 15a, b, c, d, and e: A 10-years girl, with history of road traffic accident presented with swelling of right lower limb. Angiography revealed early filling of veins on lateral aspect of lower limb suggestive of a-v fistula; posterior tibial artery was not seen (Fig15a). Selective cannulation of fistulous communication and coiling was done (Fig15 b). Coils used were 35-5-5, 35-4-4 and 35-2-4 stainless steel (fig 15 c and d). Post coiling angiographyshows now normally filling posterior tibial artery (fig 15e).

Results:

Angiographic abnormalities were reviewed in relation to operative findings (some patients had more than one feature).The findings were divided into major and minor features on the basis of clinical impact of the findings (severity of the finding)

Sr No	Angiographic Features		%
1	Occlusion	19	59.37
2	Intraluminal Filling Defect	7	21.87
3	Deviation Of Course	4	12.5
4	Pseudoaneurysm	3	9.37
5	Active Extravasation Of Contrast	1	3.125
6	Spasm Of Areries	1	3.125
7	A-V Fistula	1	3.125
8	Normal	1	3.125

The relative percentages of various angiographic abnormalities were, as represented in above table. Most of the patients who had angiographic abnormalities had to undergo surgery (except in three cases, one in which angiography was normal other in which there was only deviation of course was seen and third in which patient's pulses were well felt). The findings of angiography were consistent with operative findings in all of the cases.

Major angiographic abnormalities:

Occlusion:

Accounted for about of angiographic abnormalities 59.37% (19 out of a total of 32 patients had occlusion); short segment occlusion seen more commonly. In all cases of occlusion; angiography by virtue of accurate demonstration of distal runoff could predict the need and prognosis of surgery successfully. Our findings were consistent with operative findings in all patients, revascularization being possible in few, rest had to undergo amputation.

Intraluminal filling defect (Incomplete occlusion):

Another major angiographic abnormality accounting for about 21.87 % (7 out of 32 patients)

Sr no	Cause of intra luminal filling defect	No of patients	%
1	Intimal flap	2	33.33
2	Embolism	2	33.33
3	Thrombosis	2	33.33

All except one patient had to undergo surgery. Revascularization in the form of interposition

grafting extra anatomical venous grafting was done in 2 patients each, one underwent lower limb amputation, and one patient was conserved.

Pseudoaneurysm:

Angiographic finding of traumatic pseudoaneurysm was seen in 3 patients (i.e. 9.37 % of patients). Out of these patients one was subjected to endovascular treatment in the form of coil embolisation. The patient did well subsequently.

Active extravasation of contrast:

Active extravasation of contrast was seen in one patient, 3.125 %; this patient was also treated endovascularly by selective cannulation of bleeder and coil embolisation. however the patient expired later due to associated injuries.

A-V fistula:

A-V fistula was also seen in one patient (3.125%).Selective cannulation of bleeder and coiling was done.The patient recovered uneventfully.

Luminal narrowing:

Luminal narrowing was seen in one patient (3.125%); being regular in morphology. Because of absent radial pulse distally, this was subjected to surgical exploration, however no abnormality except arterial spasm was seen. Post intrarterial saline infusion, on operative table radial pulses reappeared. The second type of morphology (i.e. irregular) was not seen in our study.

Minor angiographic abnormalities:

Deviation of course:

Deviation of course was seen in 12.5% of patients. When in isolation, no surgical intervention was done.

Normal angiography:

Normal findings was seen in one patient (3.125%)

Conclusion :

Angiography is an excellent modality to assess extremity trauma, and reflects gross pathology adequately. A detailed angiographic map is of considerable value in planning surgical management. The location of injury and routes of distal blood flow affect the feasibility of conservative therapy. It becomes modality of choice to evaluate arterial injuries in cases of fractures around knee and to look for small bleeders in cases of pelvic trauma.[1, 2]

In our study major abnormality found was arterial occlusion followed by intraluminal filling defects and deviation of course. Angiographic features correlated well with operative and clinical finding

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Prevalence of Ischemic heart disease among elderly population in rural and peri-urban area of Belgaum. A Cross Sectional Study.

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Abstract:
Research question: Is modern life style one of the causes for Ischemic Heart Disease (IHD)?Objectives: To know the prevalence of IHD in the rural and peri urban area of three Primary Health Centers (PHC) under Jawaharlal Nehru Medical College (JNMC) and know the possible relationship between life style and IHD.Methods: This is a cross-sectional study of eight months duration from 1st July 2008 to 28th February 2009. A total of 1540 subjects aged 35 years and above. A structured interview schedule was used to collect data on socio demographic characteristics and physical activity. Echo CardioGram (ECG) was recorded and the data was statistically analyzed using SPSSResult: The prevalence of IHD was 19.3%. Prevalence is higher in 45-54 age groups. They are associated with physical exercise, education and income with a p-value ≤ 0.05. Conclusion: The study revealed that there is an association with age, physical exercise, and income with the IHD. There is a need to educate the people about the risk factors associated with the IHD

Key words: Ischemic Heart Disease, Prevalence, Non Communicable Diseases

Introduction

Chronic Non Communicable diseases (NCDs) are known to be increasing at an alarming pace in the South East Asian countries[1]. Non-communicable diseases like Diabetes, cancer, CardioVascular Diseases (CVD) and others were defined as diseases or conditions that are known to affect, individuals over an extensive period of time and for which there are no known causative agents that are transmitted from one affected individual to another[2.] CVD comprise a group of diseases of the heart and the vascular system. It contributes to a large proportion of deaths throughout the world and is becoming an important public health problem in the majority of developing countries[3]. The reported prevalence of Coronary Heart Disease (CHD) in adult surveys has risen four-fold in 40 years and even in rural areas the prevalence has doubled over the past 30 years [4]. Cardiovascular diseases are the commonest cause of death and account for 12million deaths annually in India[5.] WHO estimates that in 2005 India lost 9 billion dollars in national income from premature deaths due to heart disease, stroke and diabetes and is likely to lose 237 billion dollars by 2015 [4]**.** There is an epidemiological transition from infective to degenerative diseases. An increase in the prevalence of cardiovascular risk factors and ageing of the population will eventually leads to an increase in the absolute number of people with coronary heart disease (CHD). This further leads to an increased health awareness and demand for health care facilities[6]. There are reasonably sound data on deaths due to ischemic heart disease but less information regarding its prevalence-that is, the proportion of people in the community with symptoms or signs of ischemic heart disease or both[7]. Hence there is a need to study the prevalence of IHD in rural and peri-urban area.

Materials

The study was conducted over a period of 10 months (1st April 2008 to 1st February 2009). A sample of 1540 was calculated using a standard formula .i.e. $n= 4pq/L^2$ with a value of d=0.1 (error in estimation of p). The population residing in the 3 PHCs (which is the field practice area under JN Medical College Belgaum) were recruited by random sampling method. Ethical clearance was obtained from

the Institutional Ethical Committee. Subjects of age 35 years & above and gave informed consent were included in the study. Data on the demographic profile like age, sex, occupation, education and income etc was collected. The data on the type of diet and type of oil used was collected by interview schedule method, ECG was taken using the battery operated ECG machine and subjects were diagnosed based on the ECG changes like ST, T, R or Q wave change. Each participant's height was measured in centimeters using the measuring tape, with the subjects standing against a vertical background surface in normal erect position, the shoulders, buttocks and heels lightly touching the background or wall. Weight was measured using a standard weighing machine, and waist-hip ratio was calculated. Body mass index (BMI) was calculated as weight in kg per square of height in meters. Overweight and obesity defined as BMI of ≥25 and ≥30 respectively. The ECG findings were recorded by the Physician with MD qualification. The data was analyzed and reported as rates and proportions and Chi square test was done.

Results

In a sample of 1540, 613 were males and 927 were females. Based on the proportion of population the subjects were recruited from peri urban and rural area. The mean (Standard Deviation) age of the participants was 50.8(11.89) years (Table.no1). Mean (Standard Deviation) height and weight are 1.67(3.94) and 54.03(10.72) respectively. According to religion 68.8% were Hindus, 19.1% Muslim, 5.4% Christian and 6.7% others (Graph.No.1). 32% participants had income below Rs 10000/- and 53% had income between Rs.10000 -50000/- and remaining had income above 50000/-. Only 29.6% performed the physical exercise and among them, walking was the most performed activity than others (Table.No2). Type of diet: 59.2% were non vegetarian, 40.8% are vegetarian, 77% of participants used unrefined oil, 35.9% used vanspati, and 34.7% used refined oil as main oil for cooking (Table. No 4). The prevalence of IHD was 297(19.2%). Among them, participants in age group of 55-64 showed 27.2% prevalence, followed by 35-44, 45-54, 65-74 age group (25.9%, 25.2%, 18.5%) respectively. There was association seen with age, income, and physical exercises with IHD which were statistically significant. The BMI among the participants with ECG change showed that 17.2% were overweight and 3.0% obese (Table No 3). There was no difference seen between obesity and IHD.

Table.No.1 Age and Gender distribution of Participants

Age	Male	Female	Total	Percent
35-44	195	355	550	35.7
45-54	166	245	411	26.9
55-64	156	181	337	21.9
65-74	74	127	201	13.1
≥75	22	19	041	02.6
Total	613	927	1540	100

Table.No.2 Association between Income and Physical Activity with IHD

Income	**IHD (ECG)**			
	Abnormal ECG	Normal ECG	Total	
≤10000	113	385	498	Chi square= 10.100, DF=3, p=0.018
10001-50000	154	673	827	
50001-1lakh	29	158	187	
≥ 1 lakh	1	27	28	
Total	297	1243	1540	
Physical exercise	**IHD (ECG)**			
	Abnormal ECG	Normal ECG	Total	Chi square= 4.469, DF=1, p=0.035
Yes	73	383	456	
No	224	860	1084	
Total	297	1243	1540	

Table No. 3 Association between BMI and IHD

BMI	**IHD**		
	Normal ECG	**Abnormal ECG**	**Total**
≤18.50	200(16.1%)	42(14.1%)	242(15.7%)
18.50-	758(60.9%)	195(65.7%)	953(61.8%)

24.99			
25.00 – 29.99	244(19.7%)	51(17.2%)	295(19.1%)
≥30	41(3.2%)	9(3.0%)	50(3.2%)
Total	1243 (80.7%)	297(19.3%)	1540(100%)
P value	p=0.525	NS	

Graph No 1 : Distribution of participants according to religion

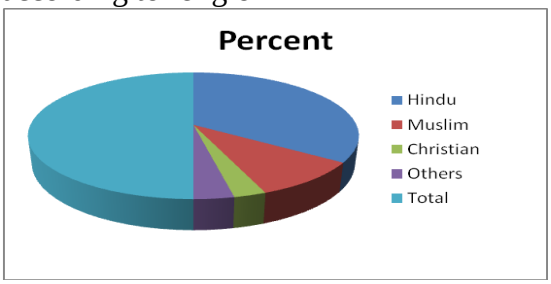

Table No 4 Type of Diet and ECG Changes

Type of Diet/ECG Changes	**Abnormal ECG**	**Normal ECG**	**Total**
Vegetarian	110	519	629
Non vegetarian	187	724	911
Total	297	1243	1540

Discussion

In India chronic diseases are projected to account for 53% of all deaths. There is a misunderstanding that chronic diseases are often viewed as primarily affecting old people, but almost half of chronic disease deaths occur prematurely in people under 60 years of age. The present study was done to know the prevalence and the relationship between IHD and life style. The study showed no statistically difference between disease and gender (22.0% vs 24.5%) but difference was seen with age. similarly many studies including an ICMR study quote that hypertension and IHD has strong association with age[8-12.] One more study conducted in Harayan showed difference in gender and age. Prevalence was more in males than in females.[13] In concurrence with other studies the present study shows that the IHD prevalence is more in middle income group (19.0%). In agreement to WHO studies the prevalence of tobacco in the present study both in smoking and non smoking form is 37.2%, followed by alcohol consumption and other habits like pan chewing, gutkha chewing etc.[1,11,14] There is an association with the income and ECG Changes, but a study conducted in Haryana shows no relation with income and CHD[13.] There was statistical difference seen between the people performing physical activity and those did no. similar results were seen in the other studies also[13]. Only few participants did exercise because most of them were farmers. The Seven Countries Study showed that the force of a risk factor may vary from one population to another, which may be explained by the presence of possible protective factors, such as physical activity, and adverse factors such as dietary saturated fat and antioxidant deficiency[15]. Family history plays some role as risk factor but further confirmation is needed by conducting the retrospective study. Since sudden death or a silent Ml is the first manifestation of CAD in about half of all patients, particularly in Indians it is necessary to screen the community early and take appropriate measures to control and prevent.

Conclusion:

An increasing prevalence of IHD and the risk factors was observed from the rural and peri-urban population, confirming the growth of an epidemiological trend. The study has demonstrated that socio demographic factors have an association with IHD. The awareness about obesity and IHD and its hazards was very low compared to the hypertension and diabetes. Advancing age, lack of physical exercise and higher income are strongly associated with the higher prevalence of Ischemic Heart Disease.

Recommendations:

There is a need for early diagnosis and prevention of cardiovascular diseases through lifestyle modifications including proper diet, regular exercise and cessation of smoking. Hence life style modification needs to be emphasized at all levels. There is also need to

provide an effective public health response to growing challenges of chronic diseases.

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Audit of Blood Utilization

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Abstract:
Background: The purpose of a transfusion audit is to determine the appropriateness of blood transfusion practices, and provide data for the improvement of blood transfusion practices. For the rational use of blood, it is essential to look into the existing blood transfusion practices and collect background information about the type of existing blood transfusion practices. Aim: An attempt was made to analyse and study the pattern of blood utilization among the various health specialties of 1200 bedded tertiary public hospital, which has an annual collection of 11,000 to 15,000 blood units. Material and Methods: A retrospective study was conducted on all the blood requisition forms received at the blood bank of 1200 bedded tertiary hospital in a metropolis city during one year. The records of the blood issued to the patients were analysed. Results: Out of total 11,264 requisition forms, (79.51%) were emergency cases and 1854 (16.46%) were elective cases.Out of total 23,431units cross-matched, 9374 units (40.00%) were issued. Out of total 11264 requests, 5373 (47.70%) were for single unit of which only 902 units (16.79%) were utilized. Urgency of requirement and blood group of patients was omitted in 52% of cases. Conclusion: A transfusion committee should be established in the hospital. It should constitute definite objectives and conduct regular audits (prospective audit, or retrospective review) in order to achieve utmost efficiency and numerous benefits, in terms of workload, cost, errors, risks of transfusion and ultimately increased customer satisfaction. It should strive to abolish single unit and inappropriate transfusion.

Key words: Audit, blood utilization and single unit issue.

Introduction

With an expansion in the variety of health care services, there is now a need to look more critically at the effectiveness of these services. Audit is now generally seen to be a necessary requirement for quality health care. It is now seen as the norm rather than the exception. Audit is fast becoming a fact of professional life.

The Transfusion Committee audits blood transfusion practices. The purpose of a transfusion audit is to determine the appropriateness of blood transfusion practices, and provide data for the improvement of blood transfusion practices.

The goal of a medical audit in a blood transfusion centre are to improve the processes introduced in the ordering, distribution, handling, and administration of blood as well as to monitor the response to transfusion. As a management tool for rationalising blood usage and an important part of quality assurance programme in a transfusion centre, medical audit can provide necessary information for improving transfusion medicine practice.

For rational use of blood, it is essential to look into the existing blood transfusion practices and collect background information about the type of existing blood transfusion practices e.g. requests for single unit transfusion, fresh blood transfusion, use of blood component therapy, use of autologous blood transfusion, etc. and modify these practices for appropriate utilization of blood in the hospital setting.

An attempt was made to analyse and study pattern of blood utilization among the various health specialties of a tertiary public hospital.

Our findings were concordant with the study done by Sandeep et al [1] regarding utilization of blood in the surgical operations. The low issue

of single unit of blood despite the requisition being high is highlighted in our study and Bharucha et al [2], Prabal Deb et al [3] and Malik et al [4] observed the similar findings. Malik et al, [4] Soumerai et al [5], Morrison et al [6], Shanberge et al [7], Giovanetti et al, [8] Kakkar N et al [9], and Torella F et al[10] approached the clinicians and used various techniques to reduce blood product utilization.

The regular audit of blood demand and set up of the hospital transfusion committee should be done to advocate rational transfusion practices. This will also avoid unnecessary wastage ultimately resulting in the decrease in the workload, cost, errors and risks related to transfusion.

Materials

A retrospective study was conducted on all the blood requisition forms received at the blood bank of a 1200 bedded tertiary hospital in a metropolis city over one year period.

A blood requisition form is designed to provide details of the patient, address, unit, ward, indication, number of units required. It is also designed to provide information regarding the blood group of the patient and the priority of the demand.

Record of blood issued to individual patient is maintained on blood bank card with unique number. Blood bank card has following details on it; patient's name, age, sex, ward, unit, blood group, diagnosis, details of blood units cross matched and issued to the patient and also details blood components issued to the patient.

They were scrutinized to collect data regarding the total units collected and details regarding their issue. The different broad specialities of the hospital i.e. medicine, surgery, pediatrics and obstetrics were studied separately regarding their requisition of the demand for emergency or elective surgeries and their actual utilization against the units requested for.

The demand and issue of single blood unit was studied separately for all the above mentioned specialities.

Results

The blood requisition forms were scrutinized and it was found that age and sex was not written in 2.67% cases out of total 11264 patient cases received in one year. Indication for transfusion was not mentioned on requisition forms in 39.84% cases received from other hospitals followed by other departments of our hospital: obstetrics (4.35%), gynecology (6.34%), medicine (4.76%), surgery (4.04%) and pediatrics (3.98%).

Table 1 shows that out of 23,431 units requested on the forms, only 9374 units were issued i.e. 40% utilization. The utilization by the Surgery department was 38.33%, medicine-45%, and pediatrics- 57.87%. The utilization was least by the Obstetrics & Gynaecology department i.e 14.90%.

Table 1: Percentage utilization of blood units against the demand.

Specialties	Forms of Elective cases			Forms of Emergency cases			Total cases		
	Units Requested.	Units Issued	Percentage Utilization	Units Requested	Units Issued	Percentage Utilization	Units Requested.	Units Issued	Percentage Utilization
Surgery	3757	1143	30.42%	8098	3402	42.01%	11855	4545	38.33%
Medicine	104	46	44.23%	4354	1960	45.02%	4458	2006	45.00%
Obstetric and Gynaecology	569	41	7.21%	3745	602	16.07%	4314	643	14.90%
Pediatrics	11	8	72.73%	1221	705	57.74%	1232	713	57.87%
Attached Infectious Disease Hospital	-	-	-	286	253	88.46%	286	253	88.46%
Other Hospitals	-	-	-	1286	1214	94.40%	1286	1214	94.40%
Total	4441	1238	27.88%	18990	8136	42.84%	23431	9374	40.00%

Table 2 shows that among the 11,264 requisition forms, there were 44.38% males and 52.95% females for which 23431 units were cross-matched with 18,990 (81.05%) units for emergency cases and 4441(18.95%) for elective surgeries. In 5,373 requisition forms out of total 11,264 requisition forms i.e. (47.70%), there was demand for the single blood unit and only 902 single blood units (16.79%) were issued. In Surgery, there were 1451 forms with requests for a single unit by the surgeons and only 190 units (13.09%) issued. The medicine department had 199 forms with single unit requests and 44 single blood units were issued ie.22.11%. In Obstetric & Gynaecology department, 2705 out of 3268 requisition forms ie.82.77% were demand for single blood unit out of which 47 single blood units ie.1.74% were issued which was the least as compared with other specialties. Maximum utilization of blood was in range of 45-55% in medicine and pediatrics and 15-34% in surgical fields.

Table 2: Utilization of single blood unit

Department	Total No. of Requisition forms	Single unit crossmatch			
		No. of forms with single unit demand	Percentage	Units Issued	Percentage utilization
Surgery	4305	1451	33.70%	190	13.09%
Medicine	1848	199	10.77%	44	22.11%
Obstetric & Gynaecology.	3268	2705	82.77%	47	1.74%
Pediatrics	854	511	59.84%	157	30.72%
Attached Infectious Disease Hospital	232	108	46.55%	99	91.67%
Other Hospitals	757	399	52.71%	365	91.48%
Total	11264	5373	47.70%	902	16.79%

Discussion

Safety of allogeneic transfusion is a concern both for physicians and patients. Medical practice audit can achieve a variety of goals. Since the blood requisition form is an important medicolegal document, it should contain the patient particulars without any error, date and time of demand must be mentioned; and invariably bear the signature of a medical officer. Mention of the blood group, the urgency of demand, clinical indication to transfuse and number of units are a must. These bits of valuable information will enable the blood bank to process the demand without loss of valuable time, and plan to arrange for the required number of donors. As evident from the study, the clinical diagnosis is more often than not misinterpreted as the indication for the transfusion. It should be stressed that they are not synonymous.

Minimizing unnecessary transfusion through the effective clinical use of blood and blood products can reduce the risks associated with transfusion. In our study, 38.33% of the surgical operations utilized blood which was concordant with the study done by Sandeep et al.[1]

A controversial aspect of transfusion medicine that has been highlighted in the study is the concept of single unit transfusion.

Single unit transfusions raise the haemoglobin by 1g/dl only, which is therapeutically insignificant. The use of a single unit of blood should therefore be strongly discouraged. [2]

In the study by Prabal Deb et al[3] the total number of blood requisition forms received from 1995 to 1999 were 2793. Of this 1697 (60.71%) forms were demand for single unit blood of which 713 (42.01%) were utilized. In our study the total number of blood requests were 11,264 out of this 5373 (47.70%) were single unit requests, of which 902 (16.79%) were utilized.

Our study highlights the low issue of single unit of blood despite the requisition being high. The single unit requests was maximum in Gynaecology i.e. 82.77% against the actual utilization of single unit, which was the least (1.74%).

In one study by Malik et al, [4] of the 497 patients, 438 (88.1%) had sent the blood for group-and-save. Of the total 497 patients identified, only 19 (3.82%) patients received a blood transfusion.

There is wide variation in clinical practice between individual obstetricians with regard to cross matching and transfusion of blood. Many obstetric patients are 'group and held' or cross-matched unnecessarily and that a significant proportion of blood units requested for transfusion are not utilized.

The notion has been discussed in various forums and the consensus was to abolish such a practice. The first approach is to briefly meet one-on-one with the physicians. Soumerai et al[5] mentions a reduction in appropriate transfusion among study surgeons from 40% to 24%. The second strategy is to teach at schedule conferences and hospital seminars. Morrison et al[6] improved transfusion practices in obstetrics and gynaecology by reducing the number of patients undergoing transfusion by 60%. The third approach for process improvement is by taking daily clinical rounds of patients who receive transfusion. Shanberge et al[7] and Giovanetti et al[8] achieved improvement in transfusion practice by this method. The fourth approach is to review each order before issue (concurrent review), and in case of controversy, to refer the matter to the hospital transfusion committee, Kakkar N et al[9] and Torella F et al[10] mentions a reduction in requirement of FFP with this strategy. The fifth method is by way of installing algorithms and guidelines for transfusion in various different clinical settings.[11] Transfusion services have used various techniques to reduce blood product utilization. [12]

Conclusion:

Regular audit of blood demand, proper documentation and adopting successful strategies as enumerated above, will diminish the practice of single unit transfusion. This will reduce the instances of inappropriate transfusions, where the risks of transfusion transmittable diseases, transfusion reactions and sensitization are more than the benefits. It must be emphasized that transfusion is not a placebo and has its inherent hazards. It should be used only when the clinical benefits outweigh the risks. Transfusion centers and the hospital transfusion committee (Comprising specialists from the Departments of Medicine, Surgery, Obstetrics and Gynaecology, Orthopaedics, Anesthesiology and Pathology) should advocate rational transfusion practices and attempt to influence the usage. This will enable the blood bank to plan its requirement judiciously and avoid unnecessary wastage ultimately resulting in the decrease in the workload, cost, errors and risks related to transfusion, which will in turn enhance rational use of limited resources.

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Tubectomy as method of family planning, factors influencing the decision to undergo tubectomy and post tubectomy morbidity in women in a rural area of Kashmir.

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Abstract:
Research question: To determine the impact of various socio demographic factors on utilization of tubectomy as a permanent method of family planning and post tubectomy morbidity and regret in women. Participants: Females in reproductive age group undergoing tubectomy. Methodology: Longitudinal study conducted in a rural area of Kashmir. Analysis of data by simple statistical methods.Results: The mean age of tubectomy was found to be 27.5 years that is in conformity to NFHS III data. The average family size was 3.5 and 80% of the females were from low socioeconomic status with 80% of them being illiterate.74 % had 1-2 living male children. In 60 % it was socioeconomic compulsion to undergo tubectomy followed by desire for good upbringing of children in 20%.Majority of women volunteered for tubectomy.Conclusion: Non acceptance of other methods of family planning in view of failures, side effects and other associated problems explains the acceptance of female sterilization as method of choice at younger ages.

Key words: Tubectomy, Family size, socioeconomic status, Educational status, occupation, morbidity after tubectomy .

Introduction

Although female sterilisation has been known and practiced as early as 1836 it was advocated only for diseases which would have deleterious effect on the woman's health if a future pregnancy occurred and to avoid passing on an inherited disease. With changing interests, sterilization, focused as fertility control method and improving techniques are used with emphasis on laparoscopic sterilizations and minilaprotomy. (1) Tubal ligation may be chosen as a practical option for women in India. (2) India has experienced mass use of tubectomies where young, low parity or poor patients have been sterilized.(1) NFHS iii data reveal that current sterilisation rate in the country is 37%.(3)Tubal ligation has no effect on woman's hormonal production or other pelvic organs. Historically, there has been concern that tubal sterilization by any method produces, in significant numbers of patients, the subsequent gynecologic and psychological problems called "Post tubal ligation syndromes,". Large Prospective studies failed to show incidence of Gynecologic Sequelae in large number of women; though some data is there to support that sterilization may result in disruption of ovarian blood or nerve supply. (4)Data from the CREST study Collaborative Review of Sterilization to access long term risks of sterilizations methods show that the most notable is the risk of pregnancy after sterilization (Cumulative failure rate 1.9%), a risk that varies by timing and type of procedure as well as the age of the women when sterilized. Many studies suggest an additional non-contraceptive benefit of Tubal Sterilizations: lower risk of ovarian cancer but have yet to determine a cause that explains the effect.(5)

Present study has been conducted with an objective to asses' impact of various socio demographic factors on utilization of tubectomy as a permanent method of family planning and post tubectomy morbidity and regret in women.

Materials

This longitudinal study was conducted in a rural area of Kashmir over a period of three years from Jan 2006 to Dec2008.The study population comprised of 600 women in the reproductive age group (15-49 years) admitted for tubectomy at SubDistrict hospital Magam (District Budgam). The females were examined, necessary history taken and investigations like HB, BT, CT, ECG and X-ray Chest were performed. Tubectomy was done by minilaparotomy, by modified pomeroys method, using catgut under short acting GA. A written consent was taken from husband as well as wife as a general rule at SDH. Patient's name, age, residence, parity, total number of children born, number of living male and female Children, terminations done, Socioeconomic status, occupation, decision to undertake tubectomy, access to mass media, motivators were all recorded in proformas already designed. These females were followed every 6mths for a period of one year from the date of tubectomy. 1st follow up examination was done at the end of 1st wk. when the stitches were removed and they were examined for any wound infection or any other complaints like fever etc. At each six monthly visit these women were asked about complaints like pregnancy, weight gain, menstrual irregularities(menorrhagia or oligmenorrhea), dysmenorrhea, psychosexual complaints, lower abdominal pain, back ache, any other medical problems and any regret about sterilisation. Those who failed to report were traced by the help of multipurpose workers of the area or by contact phone numbers. Only 100 females completed one year of follow up so morbidity profile and post tubectomy regret, for these females only, was taken. Family size was taken as total number of children a woman had borne at a point in time.

Results

Whole of the study population (100 %) were Muslims. Demographic profile of women ligated shows that, 65.33% had an average family size of 3.5 and 24% had a family size of five. 47.66% of the females were in the age group 25-30yrs. 80% of the study subjects were from low socioeconomic status and 80% of the females were illiterate. 74% had 1 or 2 living male children, 60% of the females had delivered their last child at home and the youngest child was less than 1 years old in 40 % of them (Table –I.).

Table I. DEMOGRAPHIC PROFILE OF WOMEN

Age at Sterilization(years)	No	%
20-25	30	5.00
25-30	286	47.66
30-35	216	36.00
35-40	68	11.34
Socioeconomic status		
Low	480	80.00
Middle	90	15.00
High	30	5.00
Educational status husband		
Illiterate	420	70.00
Primary	144	24.00
Secondary	36	6.00
Educational status Wife		
Illiterate	480	80.00
Primary	144	19.00
Secondary	6	1.00
Total family size		
1-2	64	10.66
3-4	392	65.33
≥5	144	24.00
No of living male children		
0	18	3.00
1-2	444	74.00
≥3	138	23.00
Last delivery conducted		
Home	360	60.00
Hospital	240	40.00
Last child birth (yrs)		
< 1	240	40.00
1-2	210	35.00
3-4	150	25.00
Occupation		
Farming	420	70.00
Labourers	90	15.00
Others	90	15.00

80% of the ladies had access to one or other means of mass media usually radio or T.V and 70.00 % had received information about contraception from this media. Only 30.00 % ladies had received information from health

system. Most of the ladies had got information from more than one source.(Table –II.)

Table –II.: Source of information

Source	Number	%
Mass media	420	70.00
Husband	192	32.00
Health system	180	30.00
Family Member	170	28.33
Friends	110	18.33

Un-affordability, a socio economic compulsion to restrict family size was the reason in 60% of the females to opt for tubectomy, 20% wanted well up bringing for their Children and for 12% it was the complications during previous pregnancies and deliveries and 8% could not answer why they were opting tubectomy.(Table –III.).

Table III. Reasons of opting for tubectomy.

Reason	No	%
Socioeconomic reasons	300	60.00
Good up bringing of Child	128	20.00
Complications in previous pregnancy or deliveries.	100	12.00
Could not give a reason	72	8.00

Post operatively most of the females (50%) complained of off and on backache which responded to systemic and local analgesics, 18% of the females complained of lower abdominal pain. 15% had a weight gain of 1-2kgs in the 1st year of follow up, 7% of females had superficial wound infection on first follow up visit which responded to antiseptic dressings only with in a week's time.20% of the females complained of menorrhagia in first eight months which responded to haemostats and IFA tablets. 5% of the females complained of effect on sexual life in the form dysparunia, dryness of vagina etc. Some females had multiple complaints. (Table-IV.)

In 70% decision was taken jointly by husband and wife, 8% females had decided on their own, 5% were informed and motivated by health workers to opt for tubectomy, rest 12% were motivated by in-laws or other relatives. 95% agreed that tubectomy is effective method to check family size. 2% females regretted their decision to undergo tubectomy. In one lady main reason of regret was, not having a male child, other lady got a divorce and wanted to remarry. Two females were found pregnant at the end of three months and reported voluntarily for not getting menses. Both had conceived before tubectomy and had been operated in the later part of the menstrual cycle. Both ladies did not get menses after they were ligated. Both delivered full term babies in the hospital. One female (1%) was found pregnant at 3 rd follow up visit.

Table-IV.: Morbidity after tubectomy.

Type	No	%
Superficial wound infection	07	7.00
Menorrhagia	20	20.00
Dysmenorrhea	10	10.00
Lower abd. pain	18	18.00
Weight gain	15	15.00
Low back ache	50	50.00
Effect on sexual life	05	05.00

Out of 600 females ligated three females reported to us who had ectopic pregnancy. All the three had records available from health institutions where they had been operated. In two cases re-anastomsis of the tube was written as the reason and in the third case no reason was cited for ectopic pregnancy.

20.00 % females had used temporary methods of contraception ever in life (ever users) and had abandoned the method either due to the fear of side effects or failure. 20 % females had undergone 1- 2 terminations mostly done in private clinics.

Discussion

65.33% of the women had a family size of 3.5, majority had 3 living children and 52.80% belonged to the age group of 25-30, average 27.50 yrs. 80% were illiterate and 70% had illiterate husbands. 70% had farming as

occupation. Socio economic factors were the reasons to opt for tubectomy in 60% of the cases. Raghav M. in a study conducted in early eighties has corroborated almost same findings, he found that mean age of tubectomy cases as 27.91 yrs, and maximum acceptance (76.07%) in women with 3-4 living children and in 94.77%-indication for tubal ligation were socio-economic reasons and 35.7% were illiterate but only 10.91% were villagers.(6)Athavale et al reports mean age at tubectomy as 25.52years &in 43% it was socioeconomic compulsion(7). Dawle et al reported age variation between 24-40yrs average 30, Parity 2-12 , 5.95%were illiterate. 86% were Hindus and 14% were Muslims.(8) Mittal and Gulati also establish economic compulsion being the main reason to opt for Tubectomy.(9,10)But declining trend of family size in tubectomy acceptors has been seen in various studies.(7) In our study 40% had last birth interval less than I year.

Only 2% females in our study regretted their decision to undergo tubectomy as compared to a study by Neena Malhotra et al were the regret rate was 9.3%.11 50% of women reported morbidity like backache, 10.00 % had menorrhagia, 5% dysmenorrhea, 18% reported lower abdominal pain, 50% of the women had no complaints .Only 3% reported changes in sexual life after the operation. Basgul A ,found that 95% of the women were satisfied with operation 30% reported changes in their menstrual cycle 35% reported lower abdominal pain, 2/3rd did not state any significant complaint.(12) Some have reported long term adverse effects as abdominal pain, pain during sexual intercourse, changes in menstruation. In the study three ectopic pregnancies were reported which has also been corroborated by Ipe et al who found three cases of ectopic pregnancy between 3months and 6 years after sterilization(13).

The decision to undergo tubectomy was mainly decided jointly by couples themselves and only 5% were motivated by health workers, same has been reported by Athavale AV et al.(7)

Conclusion:

Accepting tubectomy as method of family planning at younger ages Last child birth less than 1 year,H/o 1 or 2 terminations in 20 % subjects and non acceptance of other contraceptive methods mainly due to the fear of failure and side effects shows that family planning messages and motivation even under RCH is poor in our state. Economic factors are also a reason for adopting tubectomy as a method of choice. It is therefore of vital importance that those women who do choose to use reversible methods are counseled before and during contraceptive use. In order to increase utilization of such methods, interventions should focus on increasing demand by educating women in order to reduce the role of myths and misperceptions as barriers.

Community-based outreach programs can facilitate public discussion of family planning and help destigmatize admission of unmet need to contraceptive providers.

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What is Evidence Based Medicine? An overview.

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Introduction

Evidence based medicine, whose philosophical origins extend back to mid-19th century Paris and earlier, remains a hot topic for clinicians, public health practitioners, purchasers, planners,and the public.(1) Perhaps the best known definition of evidence based medicine is---- the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. By individual clinical expertise is meant the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice. Increased expertise is reflected in many ways, but especially in more effective and efficient diagnosis and in the more thoughtful identification and compassionate use of individual patients' predicaments, rights, and preferences in making clinical decisions about their care. Best available external clinical evidence means clinically relevant research,often from the basic sciences of medicine, but especially from patient centred clinical research into the accuracy and precision of diagnostic tests (including the clinical examination), the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens. External clinical evidence both invalidates previously accepted diagnostic tests and treatments and replaces them with new ones that are more powerful, more accurate, more efficacious, and safer.(2)

In essence, evidence based medicine is rooted in five linked ideas: firstly, clinical decisions should be based on the best available scientific evidence; secondly, the clinical problem—rather than habits or protocols should determine the type of evidence to be sought; thirdly, identifying the best evidence means using epidemiological and biostatistical ways of thinking; fourthly,conclusions derived from identifying and critically appraising evidence are useful only if put into action in managing patients or making health care decisions; and, finally, performance should be constantly evaluated.(1)

Two types of evidence-based medicine have been proposed:

1. Evidence-based guidelines (EBG) is the practice of evidence-based medicine at the organizational or institutional level. This includes the production of guidelines, policy, and regulations. This approach has also been called evidence based healthcare.(3)

2. Evidence-based individual decision (EBID) making is evidence-based medicine as practiced by the individual health care provider. There is concern that current evidence-based medicine focuses excessively on EBID.(4)

In summary, EBM is a set of principles and methods intended to ensure that to
the greatest extent possible, medical decisions, guidelines, and other types of policies are based on and consistent with good evidence of effectiveness and benefit.(4) Evidence-based medicine categorizes different types of clinical evidence and ranks them according to the strength of their freedom from the various biases that beset medical research. For example, the strongest evidence for therapeutic interventions is provided by systematic review of randomized, double-blind, placebo-controlled trials involving a homogeneous patient population and medical condition. In contrast, patient testimonials, case reports, and even expert opinion have little value

as proof because of the placebo effect, the biases inherent in observation and reporting of cases. For the purpose of assessing the comparative benefits of alternative treatments, the randomized controlled trial is the "gold standard" approach.(5) A number of systems to stratify evidence by quality have been developed and the most popular one is this one by the U.S. Preventive Services Task Force for ranking evidence about the effectiveness of treatments or screening:-

- Level I: Evidence obtained from at least one properly designed randomized controlled trial.
- Level II-1: Evidence obtained from well-designed controlled trials without randomization.
- Level II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group.
- Level II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled trials might also be regarded as this type of evidence.
- Level III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. (6)

The use of experimentation to derive knowledge about the cause of disease has intuitive appeal. In a controlled clinical trial, by exercising control over who will receive the exposure as well as the level of exposure, the investigator more confidently may attribute cause and effect to associations than in nonexperimental designs.(7) We have used two examples to illustrate how randomized controlled trials have revolutionized prescribing practices all over the world:

1. An important example of randomized controlled trial which has helped change clinical practice is the double-blind Medical Research Council Vitamin study. Neural tube defects are among the most severe congenital malformations and the possibility that folic acid might be involved was raised in 1964. A randomized trial was conducted at 33 centres in seven countries to examine whether vitamin supplementation around the time of conception could prevent NTDs. A total of 1,817 women were randomized into one of four groups: folic acid, other vitamins, both, or neither.1195 women gave birth to a child with known outcome.By April 12, 1991, the difference between the folic acid supplemented group and the others firmly established by case 27. The data monitoring committee recommended that the trial be stopped. The authors of the report concluded that folic acid supplementation could now be recommended for all women who had a previously affected pregnancy. Furthermore, they suggested that public health measures be taken to ensure that all women of childbearing age receive adequate folic acid.(8)
2. Another path breaking example of evidence based medicine is the Women's Health Initiative. The National Institutes of Health (NIH) established the Women's Health Initiative (WHI) in 1991 to address the most common causes of death, disability and impaired quality of life in postmenopausal women. The WHI addressed cardiovascular disease, cancer, and osteoporosis. The WHI was a 15 year multi-million dollar endeavour, and one of the largest U.S. prevention studies of its kind. This multi-million dollar, 15-year project, sponsored by the National Institutes of Health (NIH), National Heart, Lung, and Blood Institute (NHLBI), involved 161,808 women aged 50-79, and was one of the most definitive, far reaching clinical trials of women's health ever undertaken in the U.S. The WHI Clinical Trial and Observational Study attempted to address many of the inequities in women's health research and provide practical information to women and their physicians about hormone therapy, dietary patterns and calcium/vitamin D supplements, and their effects on the prevention of heart disease, cancer and osteoporosis.

The three major components of the WHI were:

a. a randomized controlled clinical trial of promising but unproven approaches to prevention;

b. an observational study to identify predictors of disease;

c. a study of community approaches to developing healthful behaviours. (9)

Despite decades of accumulated observational evidence, the balance of risks and benefits for hormone use in healthy post-menopausal women remained uncertain. The hormone trial had two studies: the estrogen-plus-progestin study of women with a uterus and the estrogen-alone study of women without a uterus. In both hormone therapy studies, women were randomly assigned to either the hormone medication being studied or to a placebo.(10) .Participants with an intact uterus received conjugated equine estrogen 0.625 mg /day plus medroxy progesterone acetate 2.5 mg/day in one tablet. (n=8506) or placebo (n=8102).the primary outcome was Coronary Heart disease (non fatal myocardial infarction and CHD death) with invasive breast cancer as primary adverse outcome. A global index summarizing the balance of risks and benefits included the two primary outcomes plus stroke, pulmonary embolism, endometrial cancer, hip fracture and death due to other causes. On May 31, 2002 after a mean of 5.2 years of follow-up the safety monitoring board recommended stopping the trial of estrogen and progesterone because the test statistic for invasive breast cancer exceeded the stopping boundary for this adverse effect and the global statistic supported risks exceeding benefits.The risk benefit profile found in this study was not consistent with the requirements of a viable intervention for primary prevention of chronic diseases. The results indicated that the regimen should not be initiated or continued for prevention of CHD.The absolute excess risk of events included in the global index was 19 per 10,000 person-years.(11) In the estrogen alone trial, women with prior hysterectomies were assigned to daily estrogens (Premarin) or a placebo pill. This study was also stopped ahead of schedule in February 2004 by the National Institutes of Health because of increased stroke risk. During 7.1 years of follow up, estrogen provided no overall protection against heart attack or coronary death in healthy postmenopausal women.(10)

Clinical trials have certain limitations. First, experimental studies are very expensive. For example, the Cancer Cooperative Program of Randomized trials cost about 75 million dollars per year. Second, physicians and patients are unwilling to participate in experimental trials. Third, there are ethical concerns about experimental studies which involve use of placebo. Withholding a potentially beneficial treatment from the control arm presents an ethical dilemma. In addition, in studies involving different treatment regimens there must be genuine confidence that a treatment may be worthwhile to administer to some individuals and genuine reservations about the treatment in order to withhold it from others. In other words a state of equipoise regarding the treatments must exist within the medical community. Other considerations are the difficulty of ensuring patient compliance , the need to maintain high follow-up rates over extended periods of time .(12)

Since a single study is unable to provide a definitive answer to a research question a systematic review is performed which essentially means any type of synthesis of evidence on a topic using strategies to minimize errors.The term "review "includes subjective reviews, systematic reviews, and meta-analyses and forms the backbone of evidence based medicine.(13)When the results of individual studies in a systematic review are not combined statistically, the product may be described as a qualitative systematic review.A meta-analysis, on the other hand, refers to a statistical analysis that combines or integrates the results of several independent clinical trials. In essence, meta – analysis is a study of other studies. Since studies with smaller sample sizes are more prone to the effects of chance variation than studies with larger sample size, it is desirable to calculate weighted means of results, so that more

emphasis can be laid on the most statistically precise individual trials. First a statistical test for heterogeneity is conducted followed by statistical summarization of results across studies which is performed with either a fixed-effects model or a random-effects model.(5)

The first meta-analysis was performed by Karl Pearson in 1904, in an attempt to overcome the problem of reduced statistical power in studies with small sample sizes. At the heart of a meta-analysis is the statistical combination of results from the individual clinical trials. Meta-analysis leads to a shift of emphasis from single studies to multiple studies. It emphasizes the practical importance of the effect size instead of the statistical significance of individual studies. This shift in thinking has been termed Meta-analytic thinking. The results of a meta-analysis are often shown in a forest plot.(14)

A major problem with performing Meta – analysis is the publication bias as studies with positive findings are more likely to be submitted and accepted for publication. Studies with positive findings are submitted to English language journals as they have a wider circulation. One approach of finding unpublished studies is to search for relevant investigations in a registry of clinical trials. Since studies are registered before they are completed, their inclusion in a registry is less likely to be influenced by whether the results were positive.(5)Grey literature (or Gray literature) is a term used variably by the intelligence community, librarians, and medical and research professionals to refer to a body of materials that cannot be found easily through conventional channels such as publishers, "but which is frequently original and usually recent" in the words of M.C. Debachere. (14) Examples of grey literature include technical reports from government agencies or scientific research groups, working papers from research groups or committees, white papers, or preprints. The term grey literature is often, but not exclusively, used for scientific research.(15)

One massive undertaking in support of the conduct of and the use of high-quality systematic reviews is the Cochrane Collaboration. This organization is committed to promoting well-informed health-care decisions. It addresses this goal by preparing, maintaining, and ensuring accessibility to current, rigorous systematic reviews of the benefits and risks of health care interventions.Established in 1993, it is named in memory of Archie Cochrane (1909-1998) who was known for his strong belief that health care decisions should be based on a critical synthesis of well-designed clinical trials of treatment effectiveness. The Cochrane Collaboration involves six organizational units: Collaborative review groups, Fields, Centres, Methods Working Groups, Consumer Networks, and a Steering Committee. The core work of the organization is the preparation of systematic reviews, which are conducted by the Collaborative Review Groups. Each Review Group is composed of volunteers who share interest in particular health problems.The results of the systematic reviews are incorporated in the Cochrane Library, an electronic repository of evidence needed to make informed health care decisions. The Library established in 1995 is updated quarterly.(17)

The Cochrane Collaboration faces many challenges. First, although the goal of the Collaboration is to produce reviews across the full spectrum of health care, it is dependent on the interests of persons who volunteer to prepare systematic reviews. Second, the use of such a wide range of reviewers of various backgrounds and skill levels makes it difficult to ensure a uniform high standard of work quality. Third, availability of the information in the Cochrane library is not yet universal. Barriers to its availability include lack of knowledge and the subscription cost. With the progress already achieved, there is optimism that this organization will play an increasingly important role in promoting well-informed health care decisions. (5)

Advantages of evidence based medicine : An immediate attraction of evidence based medicine is that it integrates medical education with clinical practice. It has been observed that students and doctors who begin to learn

evidence based medicine become adept at generating their own questions and following them through with efficient literature searches.Another advantage of evidence based medicine is that it can be learnt by people from different backgrounds and at any stage in their careers. Medical students carrying out critical appraisals not only learn evidence based medicine for themselves but contribute their appraisals to their teams and update their colleagues.At the other extreme, seasoned clinicians can master evidence based medicine and transform a journal club from a passive summaryof assigned journals into an active inquiry in which problems arising from patient care are used to direct searches and appraisals of relevant evidence to keep their practice up to date.The evidence based approach is being taken up by non-clinicians as well. Consumer groups concerned with obtaining optimal care during pregnancy and childbirth are evolving evidence based patient choice. A third attraction of evidence based medicine is its potential for improving continuity and uniformity of care through the common approaches and guidelines developed by its practitioners.It also provides a common framework for problem solving and improving communication and understanding between people from different backgrounds,such as clinicians and patients or non-medical purchasers and clinicians.Evidence based medicine can help providers make better use of limited resources by enabling them to evaluate clinical effectiveness of treatments and services. Remaining ignorant of valid research findings has serious consequences. For example, it is now clear that giving steroids to women at risk of premature labour greatly reduces infant respiratory distress and consequent morbidity,mortality, and costs of care,and it is equally clear that aspirin and streptokinase deserve to be among the mainstays of care for victims of heart attack.[13]

Disadvantages:

Evidence based medicine has several drawbacks. Firstly, it takes time both to learn and to practise. For example, it takes about two hours to properly set the question, find the evidence, appraise the evidence, and act on the evidence, and for teams to benefit all members should be present for the first and last steps.Senior staff must therefore be good at time management. They can help to make searches less onerous by setting achievable contracts with the team members doing the searches and by ensuring that the question has direct clinical usefulness. These responsibilities of the team leader are time consuming.Establishing the infrastructure for practising evidence based medicine costs money. Hospitals and general practitioners may need to buy and maintain the necessary computer hardware and software.CD-ROM subscriptions can vary from £250 to £2000a year, depending on the database and specifications.

A shortage of resources need not stifle the adoption of evidence based medicine. The BMA provides Medline free of charge to members with modems, and Medline is also available for a small fee on the internet. Compared with the costs of many medical interventions(to say nothing of journal subscriptions and out of date texts),these costs are small and may recover costs many times their amount by reducing ineffective practice.To conduct searches on a regular basis, clinicians need effective searching skills and easy access to bibliographic databases.Increasingly the access can be proved by ward or surgery based computers, complemented by assistance in obtaining hard copies of articles, and enabled by librarians who teach searching skill sand guide the unwary through the 25000 biomedical journals now in print.(13)

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Land Mine Blast leading to maxillofacial injury- A rare case

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Abstract:
Blast injuries usually end up affecting lower extremities and gas filled organs. Penetrating blast injuries rarely affects the maxillofacial region .Those case affecting the maxillofacial region are usually rare and fatal due to the proximity to vital structure .We are presenting a case in which our patient has escaped vital structure injury from a blast nail penetration in maxillofacial region. He successfully underwent exploration and debridement for the land mine nail removal

Key words: Blast injuries in facial region, land mine blast**.**

Introduction

Landmines have been widely used in military conflicts since the end of World War II. This reflects the simplicity of their production, their affordability and ease of distribution in the field. Now there are approximately 120 million landmines buried in 71 countries throughout the world, and 2-5 million new landmines are planted every year.[1]

The blasts and gunshots is a serious form of trauma with high energy transfer. Traditionally, 4 mechanisms of injury are implicated in trauma caused by explosions. Primary blast overpressure injuries are the direct effects of the rapid and strong increase in atmospheric pressure. Secondary blast injuries are penetrating injuries inflicted by flying bomb fragments and other debris. Tertiary blast injuries occur when the victim is propelled by the blast wind and collides with other objects;

enetrating and blunt injuries may ensue. Burns are caused by the brisk and intense rise in temperature after the explosion and are termed "flash burns." Deeper and more extensive burns may happen when the clothes catch fire.[2] Further three types of penetration injury in which there is destruction of flesh by the projectile,

cavitation in which there is damage from the bullet shock waves and fragmentation caused by the pieces of the projectile or bone .It is therefore difficult to access the injury as it might far exceed what one reasonably expects.[3]

It is usually a weight-triggered explosive device which is intended to damage a target .land mine can be triggered by a number of things including pressure, movement, sound, magnetism and vibration. Anti-personnel mines commonly use the pressure of a person's foot as a trigger, but tripwires are also frequently employed. Most modern anti-vehicle mines use a magnetic trigger to enable it to detonate even if the tires or tracks did not touch it.

Blast injuries are not common in civilian practices .A bullet injury is rare and a land mine blast injuring the maxillofacial is even more rare. There are a lot of factors that determines the extend of injury, they are kinetic energy of the object, size of object, tissue density.

Most of the victims suffering primary blast injury die, if not from the blast then from secondary missile injuries, while most of the survivors have more or less serious secondary injuries alone. A small percentage of survivors have either pure blast injury or secondary injuries complicated by blast phenomena. It is important to recognize this group and treat it appropriately.[4]

Case History

A 28 yr old male, who is a cop, was a victim of land mine blast injury. The patient was airlifted from a naxal affected area in central India called Gadchiroli. The patient was air lifted to our center orange city hospital in Nagpur which is the exact center of India.

Patient reported to emergency room with a penetration wound. The route of entry was near the left lateral wall of orbit. There was no exit wound. There was some amount of active bleeding which was controlled immediately. The patient's vitals were stable. The patient was neurologically stable and conscious with GCS 15. Patient ophthalmic status was examined and was normal with no loss of vision or no deficit in the eye movement. Soft tissue around the wound showed some amount of dead tissue.

Radiographic investigation in the PNS x-ray showed the radio-opaque object at lateral and inferior aspect of lateral wall of orbit. No fracture of the skull bones were seen. The extent of tissue damage is influenced by the type of detonated fragment, its velocity and mass, as well as the physical characteristics of the tissues. It is also influenced by object shape and construction will also affect tissue damage

Fig 1: site of injury in left lateral wall of orbit.

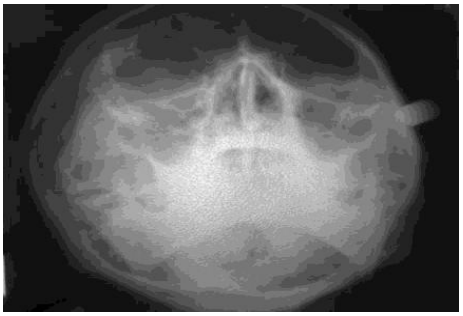

Fig 2: X-ray - Paranasal sinus view of patient`s skull.

Fig 3: Debridment of wound and retrival of the land mine nail

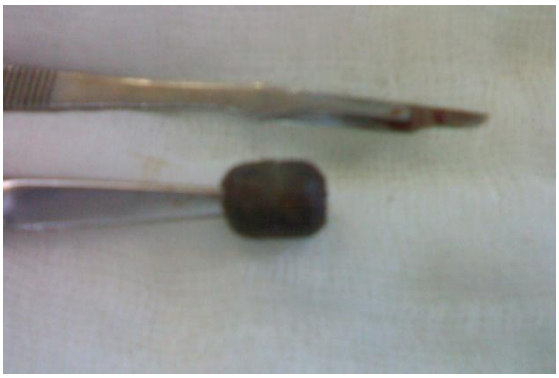

Fig 4: Retrived nail from lateral wall of orbit.

Management

After initial evaluation, blood grouping, complete hematological and electrolyte profile was done .Pre anesthetic evaluation was done & patient was shifted to the operation theatre. An incision was made at the lateral orbital region around the path of entry .The foreign object was removed by careful dissection. The wound was copiously irrigated with saline and minimal debridement done for removal of dead tissue. Postoperative antibiotics were given. The foreign object was sent for forensic examination which revealed it to be nail of a land mine.

Discussion

Wound ballistics is the study of effects on the body produced by penetrating projectiles. Landmine explosions cause most of the war injuries in the battlefield and pose a substantial public health risk. Although the lower limbs are usually affected, maxillofacial injuries do

occurred rarely. Wound ballistics is a specialty field that doesn't receive much exposure outside the few professional disciplines that have a need for valid, scientifically verifiable information about ballistic injury. Head wounds are often serious injuries and can be complicated by brain swelling. Wounds should be covered, but avoid applying excess pressure, which may cause more damage.

'Blast injury' is a general term used to illustrate the detrimental effects in an organism exposed to the effects of changes in air pressure (the 'blast wave') originating from an explosion. These injuries may be primary, secondary, or tertiary in nature. 'Primary' blast effects relate to those which result from the blast wave parameters alone. 'Secondary' blast injury results from missiles energized by blast overpressures and winds. At times gravity plays an important role, such as when a structure is partly destroyed by blast and subsequently falls of its own weight. The seriousness of the secondary blast hazard will depend not only on the shape, mass, velocity and composition of the fragment but also on the area of body impact. 'Tertiary' blast injury is caused through the displacement of the biological target by blast winds and the injury so caused may occur during either the accelerative or decelerative phase of displacement.[5]

Principles of treating ballistics injury

- Preserve skin put liberal incision
- Divide fascia
- Repair vessels not nerves no synthetic graft to be placed during initial procedure
- Remove dead tissue - especially dead muscles[remember the 4 c's = COLOR CONTRACTILITY, CONSISTENCY, CAPILLARY BLEEDING]
- Stabilize bone – by rigid internal fixation preferably
- Copious irrigation

Cautions

Avoid blood borne illness. Make sure any open wounds one may have do not come in contact with the victim's blood. Even with the best of first aid, gunshot wounds may be fatal. Always look for an exit wound

Recommendation

Gunshot/ballistic wounds to the head are frequently fatal. The victim is transported to the trauma centre keeping the head elevated .Wear personal protective equipment if available. These wounds of maxillofacial region typically bleed severely. Use direct pressure to control bleeding and keep the victim upright. Care to be taken not to obstruct breathing while controlling bleeding. When applying bandages to stop bleeding, add new bandages over the old; do not remove bandages when they become soaked. With injuries to the neck, be careful that blood flow to the carotid arteries isn't disrupted, as this can reduce blood flow to the brain. Check the A, B, C, D, E's. Assess these five critical factors:

- A (Airway) - The tongue can be a common cause of airway obstruction, and simply turning his head can solve the problem.
- B (Breathing) – If the patient is not breathing, start rescue breathing immediately.
- C (Circulation) - If the victims does not have a pulse, begin CPR. Control any major bleeding.
- D (Disability/Deformity) - Disability refers to damage to the spinal cord or neck. Check to see if the victim can move hands and feet.

If not, there may be an injury to the spinal cord. Deformity refers to things such as compound or obvious fractures, dislocations, or anything that looks out of place or unnatural. These injuries can be worsened by moving him.

Gunshot wounds frequently lead to shock, a condition caused by trauma or loss of blood that leads to reduced blood flow throughout the body. Expect that a gunshot victim will show signs of shock and treat him accordingly. However, do not elevate the legs if the gunshot wound is to the torso, as this will increase bleeding and make it more difficult for the victim to breathe.

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Commentary: India's National Program for Control of Blindness (NPCB) - Initial & Future Strategies

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National Health Policy on Control of Blindness states "One of the basic human rights is the right to see. We have to ensure that no citizen goes blind needlessly, or being blind does not remain so, if, by reasonable deployment of skill and resources, his sight can be prevented from deteriorating, or if already lost, can be restored." This policy statement is a definite evidence of political commitment at the national level for the cause of blindness control.

Milestones in the development of NPCB :- First organized effort for control of blindness in India started with the launching of National Trachoma Control Program in the year 1963. The magnitude & causes of blindness in the country were realized after a survey by Indian Council of Medical Research in 1971-74. Dissemination of information about eye care with particular emphasis on eye health among children & other vulnerable groups, ensuring accessible & affordable ophthalmic services to the community & establishment of a permanent infrastructure of a community oriented eye health care were the strategies identified.
With these as the basis, the National Trachoma Control Program was changed into National Program for Control of Blindness (NPCB) in 1976 as a 100 % centrally sponsored program. The program got a further boost after its inclusion in the 20 point socio-economic program of the Prime Minister in 1982.

Program goals :-
1. To reduce the prevalence of blindness from 1.4 to 0.3%.
2. To establish an infrastructure & efficiency levels in the program to be able to cater to new cases of blindness each year to prevent further backlog.
Program objectives :-
1. To address backlog of cataract blindness & expansion of coverage of cataract surgery.
2. Augment production of manpower & infrastructure.
3. IEC activities to be enhanced & eye care should become felt need of the people.
4. Develop effective co ordination among Govt, private and NGOs.

NPCB involved four components
1. Cataract surgery
2.Refractive errors
3. IEC activities
4. Rehabilitation of the incurably blind person

Cataract surgery :- It will aim to cover all persons with blinding cataract. If there is resource constraint then preference will be given to bilateral blindness followed by young blind person & people who recently became blind due to cataract & are likely to take up their activities again.

Refractive errors :- it will be aimed to screen school going children followed by other children & special occupational groups requiring good vision for work like weavers. After screening, the needy are to be provided with the spectacles.

IEC activities :- Information about eye care & services available to be disseminated through mass media. Education is to be provided on prevention of eye injuries particularly among children. There should be facility of treatment at local level.

Rehabilitation of incurably blind person :- It included mobility training to the blind, economic rehabilitation of the young blind people, education of the blind children in regular schools & community education about specific needs of blind persons.

Major thrust areas were identified
Strengthening service delivery :-The program implementation was decentralized & District

blindness control societies (DBCS) were created. DBCS were given full financial & administrative autonomy. District Collector will be the Chairman of DBCS. The basic purpose of creating DBCS is to have a body totally committed to blindness control in the district. The society will plan, implement & monitor all the blindness control activities in the district under the overall guidance of State / Central organization for NPCB. A new position of District Program manager was created to strengthen the program management capacities in the district. The blind & visually impaired population to be provided total eye care including preventive, curative & rehabilitative services. Coverage will be extended to tribal & remote rural population.

For better coverage, NGOs & private sector to be involved. For provision of comprehensive eye care some specific components have been incorporated in the program like :-
School eye screening :- The school teachers are trained to screen the school children. The selected children with refractive errors are referred to paramedical ophthalmic assistant (PMOA) for refraction & children are provided with glasses. These activities are organized & co ordinated by DBCS.

Community based rehabilitation of the incurably blind :- In some blocks of certain districts in the country, National Association for the Blinds is running projects for incurably blinds. The aim is to rehabilitate the incurably blind in their own community by training them in mobility, Braille, in local schools if person is young & finally helping them to settle in locally available vocation.

Quality eye care :- Slowly the emphasis will be shifted from ‘ Removing the backlog’ to ‘ tackling the incidence’ of blindness & low vision. Rather than ‘ number of cataract operations performed’ the focus will be on ‘ sight restoration to blind people’.

Development of manpower :-The training institutions are to be strengthened to develop technical & managerial capacity of the eye care staff at different levels. The ophthalmic surgeons, program managers & support staff to be given job related training for their appropriate utilization & involvement in the control of blindness.

Public awareness & outreach activities :- The demand for surgery to be generated through camps & awareness campaign. The stress is to be given for hard to reach groups.
Development of Institutions :- Institutional capabilities are to be improved for better eye care. The institutional capacities will be strengthened for human resource development.
As per 2006-07 survey the prevalence of blindness was 1 %. Based on the findings of surveys conducted during 1998-99 & 1999-2000, other measures were included in the program.

Revised strategies :-
1. NPCB made more comprehensive by strengthening services for other causes of blindness like corneal blindness (requiring transplantation of donated eyes), refractive errors in school going children, improving follow up services for post operative cataract & treating other causes of blindness like glaucoma.

2. To shift from eye camp approach to a fixed facility surgical approach & from conventional surgery to IOL implantation for better quality of post operative vision in operated patients.

3. To expand the world bank project activities like construction of dedicated eye operation theatres, eye wards at district level, training of eye surgeons in modern cataract surgery & other eye surgeries & supply of ophthalmic equipments etc. to whole of country.

4. To avoid duplication of efforts the areas to be earmarked among govt. hospitals and NGOs.

5. In tribal & other underserved areas for enhancing the coverage of eye care services, village wise blind registers to be prepared & preference for cataract surgery is to be given to persons having bilateral blindness.

New initiatives proposed under the program :-

Construction of dedicated eye wards & eye operation theatres in district & sub district hospitals in north eastern states, Bihar, Jharkhand & J&K, Himachal Pradesh, Uttaranchal & few other states as per demand.
Appointment of ophthalmic surgeons & ophthalmic assistants in new districts in district hospitals & sub district hospitals. Placement of ophthalmic assistants in PHCs/ vision centres where there are none. Appointment of eye donation counselors on contract basis in eye banks under Govt & NGO sector. Grant in aid to NGOs for management of eye diseases other than cataract like diabetic retinopathy, glaucoma, laser, corneal transplantation, vitreoretinal surgery & treatment of childhood blindness etc.

Special attention for clearing cataract backlog & take care of other eye health care centres in NE states.
Telemedicine in ophthalmology & involvement of private practitioners.
Vit A supplementation & MMR vaccination through DBCS funds to prevent childhood blindness.

The voluntary organizations like Lions & Rotary International & their branches to organize eye camps in remote rural & urban areas as per standard protocol. They are helpful in provision of comprehensive eye care.

There is lot of International help for the program. World Bank, Danish & WHO assistance are noteworthy.

Vision 2020: The Right to Sight – a global initiative to reduce avoidable (Preventable & Curable) blindness by the year 2020 & India is also committed to this initiative. The plan of action has been developed for target diseases like cataract, refractive errors, childhood blindness, glaucoma & diabetic retinopathy. There is proposal to develop human resource & infrastructure at various levels. The proposed four tier structure includes 20 centres of excellence, 200 training centres, 2000 service centres & 20,000 vision centres.

With all these efforts we can hope to attain the goals & wipe out the scourge of avoidable blindness.

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Research papers: should be arranged into the following sections:

1. Title page,
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4. Materials and Methods,
5. Results,
6. Discussion,
7. Acknowledgement
8. Conclusion,
9. References,
10. Tables,
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