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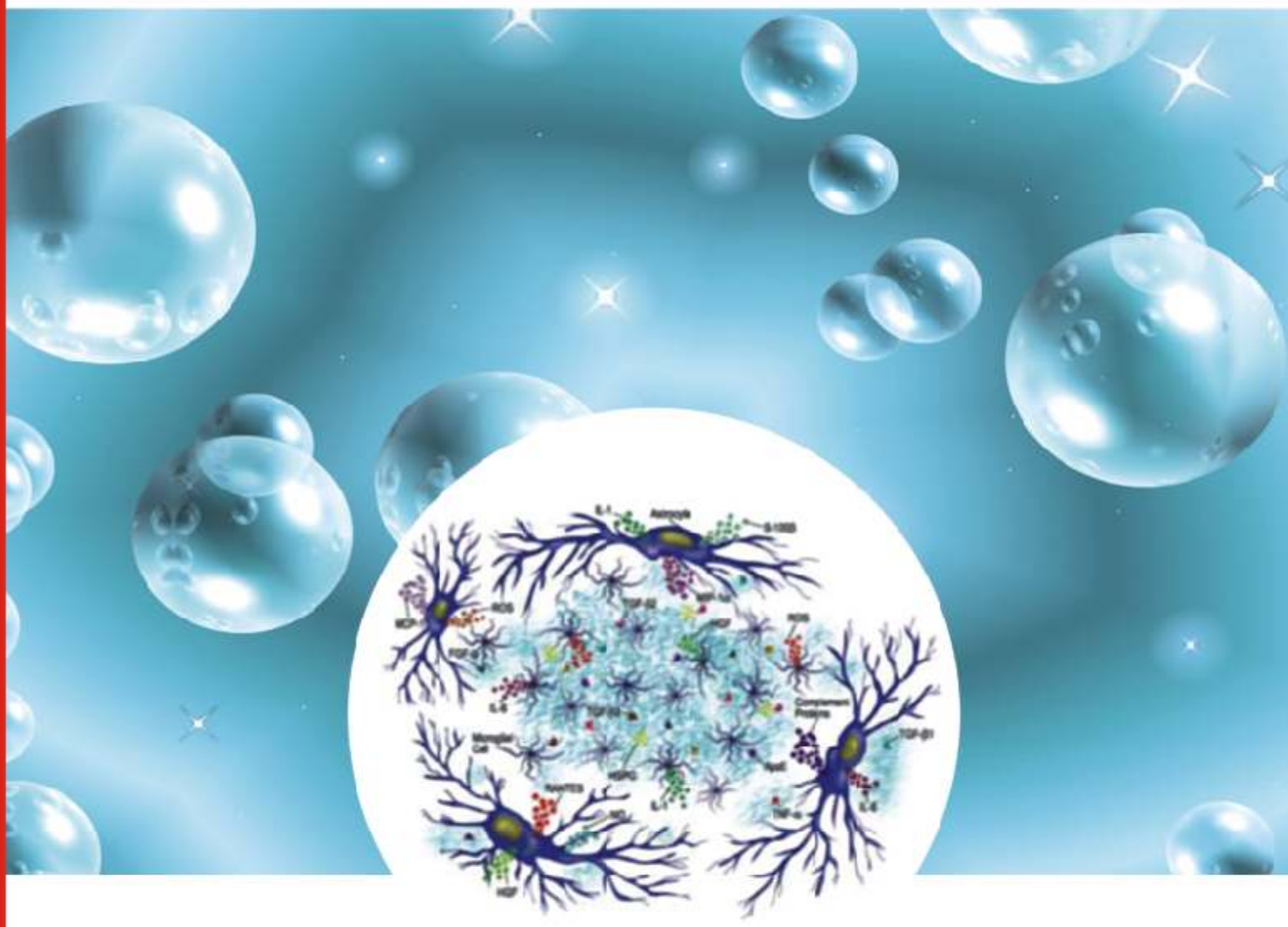

Official Publication of B. J. Medical College,
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(Health & Family Welfare Department, Government of Gujarat)

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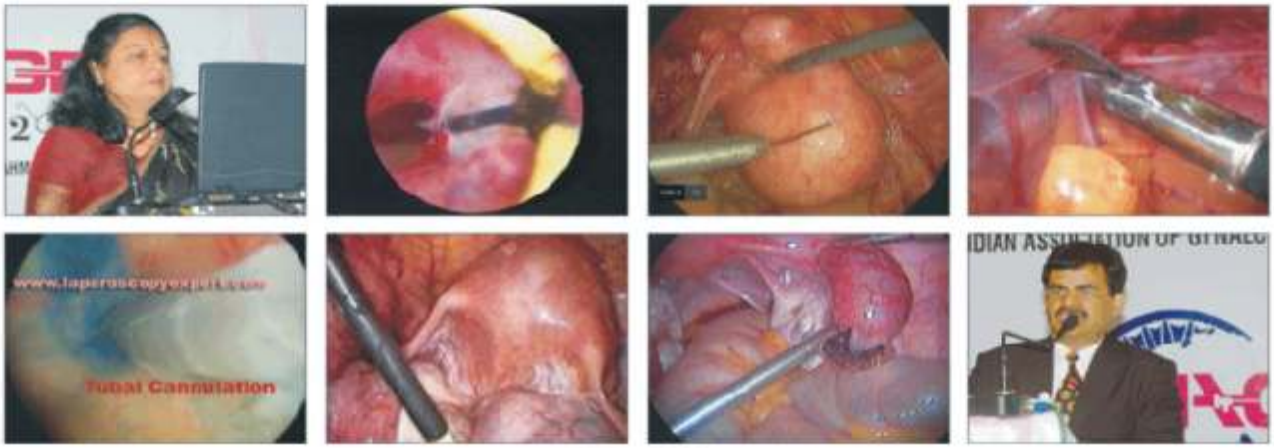

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Recommendations for Treatment of Malaria (WHO Guidelines, 2010)

Diagnosis

- Prompt parasitological confirmation by microscopy or alternatively by rapid diagnostic test is recommended in all patients suspected of malaria before treatment is started.
- Treatment solely on the basis of clinical suspicion should only be considered when a parasitological diagnosis is not accessible.

Treatment of Uncomplicated *P.falciparum*

- Artemisinin based combination therapies (ACTs) should be used in preference to sulfadoxine pyrimethamine (SP) plus amodiaquine (AQ) for the treatment of uncomplicated *P. falciparum* malaria.
  Strong recommendation, moderate quality evidence.
- ACTs should include at least 3 days of treatment with an artemisinin derivative.
  Strong recommendation, high quality evidence.
- Dihydroartemisinin plus piperaquine (DHA+PPQ) is an option for the first line treatment of uncomplicated *P. falciparum* malaria worldwide.
  Strong recommendation, high quality evidence.
- Addition of a single dose primaquine (0.75 mg/kg) to ACT treatment for uncomplicated *falciparum* malaria as an antigametocyte medicine, particularly as a component of pre-elimination or an elimination programme.

Treatment of Severe *P.falciparum*

- Intravenous artesunate should be used in preference to quinine for the treatment of severe *P. falciparum* malaria in adults.
  Strong recommendation, high quality evidence.

Treatment of Uncomplicated *P.Vivax*

- In areas with chloroquine resistant *P. vivax*, artemisinin based combination therapies (particularly those whose partner medicines have long half-lives) are recommended for the treatment of *P. vivax* malaria.
  Weak recommendation, moderate quality evidence.
- At least a 14-day course of primaquine is required for the radical treatment of *P. vivax*.
  Strong recommendation, very low quality evidence.

Source: Guidelines for the treatment of Malaria 2nd Edition WHO 2010 pg.xi

From The Editor's Desk.....

Dear friends,

Greetings to one and all!

Accreditation of medical laboratory services at B. J. Medical College & Civil Hospital has added one more feather in its cap. This significant achievement has been made possible by sincere, untiring efforts of the team members from Microbiology, Pathology and Biochemistry department. *Our heartfelt congratulations to the whole team!!*

The news of 'multi drug resistant (MDR) superbug' has triggered a national debate on the need for a periodic surveillance of antibiotic resistance, monitoring antimicrobial utilization and antibiotic policy. Although MDR organisms exist for some time, this definitely calls for using high end antimicrobials with discretion and undertaking surveillance activities especially in a tertiary care centre like ours to show the association between antimicrobial use and resistance. An attempt has been made to include an article on nosocomial infections and the role of stakeholders in this issue. It's surprising to note the potential poisonous state of our favorite vegetables, if it tastes bitter. A review of the toxins present in these vegetables appear in this issue with a warning to stay away from bitter bottle gourd, cucumber, squash, pumpkin and melon.

Further, a good number of postgraduates have submitted articles for publication in the college magazine. Their interest and enthusiasm is worth appreciating. It will be a good teaching learning experience for us. To help out our students on citing references in scientific articles and dissertation, we have incorporated *samples of references citation format in this issue.*

We hope you enjoy reading. As always, we welcome your comments and suggestions.

Dr. Mira K. Desai **Dr. Bipin K. Amin**

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Contents

NABL Accreditation of Laboratory Services at B. J. Medical College & Civil Hospital, Ahmedabad.

Department of Pathology, Microbiology & Biochemistry

Laboratory services are the essential component of the health care services. The quality of these services are of paramount importance for the overall performance of the entire hospital. The most important factor in the quality of the patient care would be the quality of the diagnostic services of which laboratory facilities constitute the support system. It not only helps the clinicians in the correct diagnosis but also assist in monitoring the disease progression and efficacy of the treatment.

Being a tertiary health care centre, the institute also provides extensive laboratory services. These include receiving, processing and reporting approximately 42,500 samples every month. The average number of samples tested and reported at different laboratories per month includes, Pathology 15,000, Microbiology 14,000 and Biochemistry 13,500. In addition, these laboratories also participates in various health related programs of State and Central Government in collaboration with WHO. It's the vision of Gujarat State to have the finest network of the public health care institutions, providing quality medical care services, with easy accessibility, affordability and equity to the people of Gujarat and beyond with the state of art technology including the laboratory services. The initiative to implement the Quality Management System was undertaken by Medical Superintendent, Civil Hospital and Dean, B. J. Medical College. Quality is not something that happens by chance. It is the result of grit and determination to change the mindset and overcome the odds. The greatest hurdle was to change the attitude and develop quality culture for continuous improvement. Implementing quality management system in laboratory service was aimed to provide the test results that are reliable, relevant, accessible and available in timely manner.

Accreditation is third party (an independent external) assessment for the level of performance standard as defined by a National Health Care Accreditation Body. The journey started in May 2007, with application for NABL Accreditation. The pre assessment took place on 30th July 2009 in which Lead assessor pointed out many deficits (Non Conformances). The departments worked hard to fulfill the gaps and the final assessment was done by the team on 6-7th March 2010. Once again the non conformances were raised that were fulfilled within the timeframe allotted by the team along with the documentary evidence.

Fig.1: Assessment of laboratory services at OPD collection centre

The Laboratory services at B.J. Medical College & Civil Hospital Ahmedabad, has been benchmarked the best by getting NABL accreditation in July 2010, in accordance with ISO 15189:2007 in the field of medical testing for 46 test it applied, in which 16 are from pathology,16 from Biochemistry and 14 from microbiology department respectively (Table 1). It is the only NABL accredited laboratory of Ahmedabad for surgical pathology as well as cytology.

Fig.2 : Lead assessor and quality manager in laboratory services office with central documents

Table 1: List of tests accredited by NABL

Biochemistry	Pathology	Microbiology
Alkaline Phosphatase	Hemoglobin Estimation	Sputum, Urine, body fluids, Pus -- Aerobic culture and sensitivity
Total Cholesterol	Total Leucocyte Count	Sputum, Urine, body fluids, Pus -- Gram stain
Creatinine	Differential Leucocyte Count	Blood - Aerobic culture and sensitivity
Glucose (FBS / PPBS / RBS / GTT)	Erythrocyte Sedimentation Rate	Sputum, Urine, body fluids, Pus --- ZN stain
Total Protein	RBC Indices	Dengue IgM Ab
Urea Platelet count	HIV Ab	
Albumin	CD4 count	RA factor
Bilirubir. - Total	Reticulocyte count	ASO factor
Bilirubin - Direct	Peripheral Smear Examination	CRP
Alanine Transaminase	Urine analysis	HBsAg
Aspartate Transaminase	Bleeding Time	RPR
Triglycerides	Prothrombin Time	Slide WIDAL
Uric acid	Activated Partial Prothrombin Time	IgM Anti HAV antibody
a -Amylase - Total	FNAC	IgM Anti HEV antibody
Electrolyte - Sodium	Fluid Cytology	----------
Electrolyte – Potassium	Histopathological Examination of Biopsy material and excised specimen	----------

The laboratory service ensures quality not only by running internal quality control but also participating in the External Quality Assessment Scheme (EQAS) for various scope of testing as follows :

- Serology and Clinical Microbiology at Trisshur Kerala
- HIV and CD4 testing at NARI Pune
- Histopathology and Cytopathology at Saint Jones Medical College, Bangalore.
- Clinical Biochemistry and haematology at Randox Laboratory, U.K.
- Haematology at AIIMS, New Delhi.
- Coagulation profile at CMC Vellore.

In addition, for the tests in which EQAS is not available, inter laboratory comparisons (ILC) by several other NABL accredited laboratories from the state is undertaken. The results of EQAS and ILC were found to be satisfactory and enccuraging.

The journey of Quality Laboratory Services at B.J. Medical College & Civil Hospital, Ahmedabad is committed to provide reliable reports, service delivery within stipulated time and total customer satisfaction.

Scientific Events and Achievements at B. J. Medical College and Civil Hospital, Ahmedabad

Biochemistry Department

- Organized CME on 'Role of molecular biology in clinical diagnosis with special emphasis on cancer' on 13th April 2010. Dr. Hemangini Vora of GCRI gave key note address on 'Isolation and handling of genetic material', Dr. Prabhudas S. Patel focused on 'Proteomics: The key player for multidisciplinary approach in cancer research' and Dr. Sunil Trivedi of GCRI highlighted on 'Molecular biology: Current status and future implication in clinical practice'. Faculty members and students of different colleges attended CME. The sessions were interactive and informative.

Civil Hospital

- A newly constructed *Wellness centreat* (D-3) was inaugurated in the esteemed presence of Hon'ble Health Minister Shri Jaynarayan Vyas on 5th August 2010. The Health minister welcomed the concept of having the facility in the hospital for the employees to keep them physically and mentally healthy so as to provide quality services to the patients.
- A laser machine, MEDLITE (Q-Switched ND-YAG Laser) was also inaugurated by the dignitaries. The machine is safe, time tested designed for wide clinical applications like hair removal on face and chin (especially in women), post pimple scar, skin aging (skin resurfacing), wrinkle removal, removal of pigmented moles, nevi, vascular nevi (salmon patch), dermal melanocytosis especially Nevus of Ota, removal of freckles, lentigines and tattoo.

Community Medicine Department

Training programme

- 'Community Health Awareness and Motivation Project' was organized from 25th-27th March 2010. The theme 'Urbanization *and Health*' was selected in context to the effect of urbanization on collective health globally and individually. The students made presentation on Weight Status in Urban School Health (Avadh Patel), Awareness about Respiratory Illnesses in Urban Area (Harshil Patel), Awareness about Malaria and Diarrhoea in Urban Slum (Hiren Patel), Mental Health profile of Patients attending urban deaddiction centers (Parswa Patel), Awareness about voluntary blood donation & AIDS in Novice Medicos and Paramedics (Ravi Patel). The workshop was interactive and well attended by students.
- 'Regional sensitization and advocacy' for program managers of health and ICDS of Ahmedabad and Gandhinagar region.

Research Project

- "Patterns of Health care utilization and morbidity in an urban community around new Civil Hospital & B. J. Medical College, Ahmedabad (2010-2011)" by Dr. N.J. Talsania.

Public Health Activities

- Swarnim Gujarat daily health and medical checkup camp in field practice area of Urban Health Centre.
- Epidemic investigation of gastroenteritis and cholera by Dr. Atul Trivedi and Dr. Minal Gadhvi.

Scientific Publications

- "A comparative study to analyze the cost of curative care at primary health centre in Ahmedabad." Published in *Indian Journal of Community Medicine* 2010; 35:160-4 by Dr. Neeta Mathur, Dr. Geeta Kedia, Dr. Atul Trivedi.
- "Epidemic Investigation of the Jaundice Outbreak in Girdharnagar, Ahmedabad ", Published in *Indian Journal of Community Medicine* 2010; 35: 294-7 by Dr. Naresh T. Chauhan, Dr. Prakash Prajapati, Dr. Atul V. Trivedi, Dr. A. Bhagyalaxmi.

- "Internal evaluation of National Leprosy Elimination Program in tribal Gujarat." Published in *Indian Journal of Community Medicine* 2010; 35 by Dr. Anjali Singh.
- "A community based study on awareness of HIV/AIDS in rural districts of Gujarat." Published in *Indian Medical Gazette*/Vol CXLIV,No.4/April 2010 by Dr. Shikha Jain, Dr. Anjali Singh, Dr. A.Bhagyalaxmi, Dr. A.M.Kadri.
- "Awareness of HIV/AIDS among school adolescents in Banaskantha District of Gujarat" , Published in *Health & Population Perspective* 2009 ; 32 by Dr. Shikha Jain, Dr. Anjali Singh.

Dermatology Department

- Organized a CME on 'Dermatopathology', on 4th July 2010. It was well attended by 100 delegates including teachers and PG students of all medical colleges of Gujarat and private practitioners.
- Gujarat State Branch of Indian Association of Dermatologists, Venerologists and Leprologists won the best branch award at National Conference held at Lucknow 2010. President, Dr. Bela Shah, secretary Dr. Kirti Parmar and treasurer Dr. Amita Sutaria received the prize for the same.
- Dr. Santosh Rathod, 3rd year resident, secured first and fourth position in All India Amla Dermatology Quiz Screening test and final test respectively.

Medicine Department

- Organized a CME on "Current trends in the management of diabetes mellitus" on 2nd July 2010. A wide range of topics on Diabetes mellitus like "Incretin Based Therapy, Newer insulins, CAD in DM, Perioperative management, diabetic nephropathy and gestational diabetes were covered by experienced diabetologist like Dr. Navneet Shah, Dr. Ramesh Goyal , Dr. Kamal Sharma, Dr. Bansi Saboo, Dr. Kamal Goplani and Dr. A.N. Shah. The CME was very well attended by faculties and students. Each session was interactive and uncovered many hidden aspects of management of diabetes.

Microbiology Department

- Secured 100% marks for 1st quarter of 2010 by External Quality Assessment Scheme (EQAS) conducted by the Indian Association of Medical Microbiologists, Thrissur, Kerala for Microbiology & Serology.
- Organized a workshop on 'Diagnostic Techniques in Virology', by Dr. M. M. Vegad, Dr. N. I. Shah, Dr. Neeta Khandelwal, Dr. Nidhi Sood and Dr. Nilesh Patel on 21st March 2010.
- The faculty members attended training programme on 'Supportive supervisory field visit of STI/RTI clinic of state' and 'Quality Management System & Internal audit' conducted by GSACS and Government of Gujarat.
- Post Graduate certificate course in Quality Management & Accreditation of Health organization at Noida, New Delhi for 7 days was attended by Dr. Sumeeta Soni and has been assigned a project. 'To study & analyze the sample rejections of the Microbiology Department as a quality indicator for continual improvement of the Laboratory services, B. J. Medical College & Civil Hospital, Ahmedabad'.

Obstetric and Gynecology Department

- Organized a workshop on 'Iron Sucrose Therapy' for Medical officers, Gynecologists and DHOs of Gujarat on 10th June 2010 by Dr. Malini Desai, Dr. Haresh Doshi, Dr. Ajesh Desai, Dr. Lalit Kapadia, Dr, Pallavi Ninama and Dr. Nilesh Chauhan.
- Guest lectures and publication by Haresh Doshi,
  - 'Shoulder dystocia and Episiotomy – Current concepts', at workshop by FOGSI at Nagpur on 14th March 2010
  - 'Vesicovaginal fistula and Fibroid uterus' at Postgraduate CME by ICOG at Mumbai on 1st May 2010
  - Case discussion on Primary amenorrhoea in BSOG CME 2010 by Bangalore ObGy Society at Bangalore on 19th June 2010.
  - "Cardiac disease in pregnancy – Maternal and perinatal outcome" in *JIMA* 2010; 108:278-83.

- Symposium on, "Anemia during pregnancy□. Still a challenge ' and Case presentation 'How we managed that case of anemia' was actively participated by Dr. Lalit Kapadia and Dr. Ruchi Desai at AOGS, on 20th June 2010.

Pathology Department

- Organized CME on 'Flow Cytometry ' on 16th July 2010.

Research Project

- 'Thalassemia detection programme' by HPLC & Electrophoresis method and ' Flow cytometry for lymphoma-leukaemia differentiation', proposal has been submitted to ICMR-New Delhi.
- An evaluation of the knowledge, attitude and practice of laboratory Safety measures in paramedical staff of laboratory services in pathology dept. B. J. Medical College by Dr. Hansa M. Goswami.

Publication and other milestones

- 'Primary thyroid lymphoma –Case Report' Published in *J of Pathology and Lab Medicine*, Jan – June 2010.
- The facility for complete coagulation profile study including Factor assay and Quality Control for blood components has been started at Haematology laboratory of IHBT.

Pharmacology Department

- Published a booklet entitled '*Pharmacology curriculum - Guidelines for teachers*', to provide general teaching guidelines based on the learning objectives, expectations from undergraduates, its relevance and teaching learning methods within the time duration devoted to pharmacology teaching.
- Dr. R. K. Dikshit delivered a key note address on "Challenges in Pharmacovigilance" at KBIPER, Gandhinagar, on 24th July, 2010, at an MCI sponsored seminar on "Pharmacovigilance"
- Guest lectures by Dr. Mira Desai,
  - "How to write and publish a scientific research paper', at Annual functior of AOGS, Ahmedabad in April 2010.
  - "Methods in Pharmacovigilance" at KBIPER, Gandhinagar, on 24th July, 2010, at an MCI sponsored seminar on "Pharmacovigilance".
  - 'Evaluation methods in medical education' and 'Problem based learning' at the basic Medical educational technology workshop at PSMC, Karamsad in July 2010.
- Guest lectures by Dr. C. K. Desai,
  - The art of writing a scientific paper at the State level Workshop on Research Methodology at Anand, Gujarat in April 2010.
  - Interactive teaching, mentoring, and PBL for the FAIMER Fellowship programme at GSMC Regional FAIMER Institute in June 2010.
  - The Basic MET Workshop at PSMC, Karamsad in July 2010 on MCQs and item analysis, OSCE/OSPE, oral and viva voce.
  - "Penicillin: The Wonder Drug" on 6th August 2010 at Gujarat Science City, Ahmedabad.
  - Pharmacovigilance of herbal medicines – at the Seminar on "GCP for Herbal Drugs" at KBIPER, Gandhinagar in August 2010.
  - Published an article, "A promising novel tetracycline in resistant infections" in *GMJ* 2010; 5: 35-8.

Nosocomial Infections

*Nidhi Sood**

Introduction

There is no hospital, however small, airy or well ventilated, where the epidemic ulcer is not found. Every cure stand still, every wound becomes a sore and every sore is apt to run in a real gangrene. But in great hospitals especially, it prevails at all times and is a real gangrene.

- John Bell, 1801

As evidenced by famous quote, nosocomial or hospital acquired infections (HAI) as they are called have long been a formidable foe of medical practitioners. They are recognized as major health problem throughout the world and described by WHO as one of the major infectious disease impacting the economy hugely.[1] A prevalence study conducted by WHO in 55 hospitals across 14 countries showed, an average of 8.7% HAI. The highest frequencies were reported from hospital in Eastern Mediterranean and South East Asia 11.8% and 10% respectively and 7.7% and 9% in Europe and western pacific.[2] Every year a huge amount of health recourses are wasted in the hospitals in the form of longer hospitals stay, high expenditure on costing antibiotics due to health care associated infections. It is estimated that at any given point of time, 1.4 million people suffer from HAIs.[3] It has been observed that the overall increase in the duration for hospitalization for patients with surgical site infection was 8.2 days.[3] Prolong stay not only increases cost to patients but also indirect cost due to lost work. This article aims to provide defintions and criteria of nosocomial infections, methods of surveillance and role of stakeholders.

Definitions

The term Nosocomial Infections has been replaced by a generic term "Health Care Associated Infection" or "HAI".[4] It is defined as a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s). There must be no evidence of infection being present or incubating at the time of hospital admission.[2] CDC Atlanta, the chief regulatory body for infectious diseases, has devised definitions for nosocomial infections for specific infection sites. These definitions are employed for surveillance of HAIs and are grouped in to 13 major type categories:

Urinary Tract Infection (UTI) These are categorized in to three different types.[1]

A. Symptomatic UTI

1) Patient has at least 1 of the following signs & symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness and a positive urine culture, ($\geq 10^5$ microorganisms per cc of urine with no more than two species of microorganisms).
2) Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness, and at least 1 of the following:

a. Positive dipstick for leukocyte esterase and/or nitrate
b. Pyuria (urine specimen with ≥10 white blood cell (WBC)/mm^3 or ≥3 WBC/high-power field of unspun urine)
c. Organisms seen on gram's stain of unspun urine
d. At least 2 urine cultures with repeated isolation of the same uropathogen (gram negative bacteria or *Staphylococcus saprophyticus*) with $\geq 10^2$ colonies/ml in non-voided specimens
e. Urine sample with $\geq 10^5$ colonies/ml of a single uropathogen (gram negative bacteria or *S. Saprophyticus)* in a patient being treated with an effective antimicrobial agent for a UTI

B. Asymptomatic Bacteriuria

An asymptomatic bacteriuria must meet at least 1 of the following criteria:

1. Patient has had an indwelling urinary catheter within 7 days before the culture , and
   - A positive urine culture, ($\geq 10^5$ microorganisms per cc of urine with no more than 2 species of microorganisms), and
   - No fever, urgency, frequency, dysuria, or suprapubic tenderness

* Professor (Additional) Microbiology, B. J. Medical College, Ahmedabad

2. Patient has not had an indwelling urinary catheter within 7 days before the first positive culture, and
   - At least 2 positive urine cultures, ($\geq 10^5$ microorganisms per cc of urine with repeated isolation of the same microorganismsand no more than 2 species of microorganisms), and
   - Patient has no fever, urgency, frequency, dysuria or suprapubic tenderness.

C. Other Infections of Urinary Tract

Other infections of the urinary tract must meet at least one of the following criteria:

1. Patient has organisms isolated from culture of fluid (other than urine) or tissue from affected site.
2. Patient has an abscess or other evidence of infection seen on direct examination, during a surgical operation, or during a histopathology examination.
3. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), localized pain, or localized tenderness at the involved site, and

   At least 1 of the following:
   - Purulent drainage from affected site
   - Organisms cultured from blood that are compatible with suspected site of infection
   - Radiographic evidence of infection (e.g. abnormal ultrasound, computerized tomography (CT) scan, magnetic resonance imaging (MRI), or radiolabel scan (gallium), etc.

Surgical Site Infection : There are two categories[2]

A. Superficial incisional surgical site infection (SSI)

A superficial incisional SSI must meet the following criterion:

Infection occurs within 30 days after the operative procedure and involves only skin and subcutaneous tissue of the incision along with at least one of the following :

- Purulent drainage from the superficial incision
- Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
- At least one of the following signs or symptoms of infection: pain or tenderness. localized swelling; redness, or heat, and superficial incision is deliberately opened by surgeon and is culture positive.
- Diagnosis of superficial incisional SSI by the surgeon or attending physician.

B. Deep incisional surgical site infection

A deep incisional SSI (DIP or DIS) must meet the following criterion:

Infection occurs within 30 days after the operative procedure if no implant[1] is left in place or within 1 year if implant is in place and the infection appears to be related to the operative procedure, and

- Involves deep soft tissues (e.g. facial and muscle layers) of the incision, and

  Patient has at least 1 of the following:
- Purulent drainage from the deep incision
- A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least one of the following signs or symptoms: fever, or localized pain or tenderness. A culture-negative finding does not meet this criterion.
- An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathology or radiology examination.
- Diagnosis of a deep incisional SSI by a surgeon or attending physician.

Laboratory Confirmed Bloodstream Infection (LCBI)

LCBI criteria 1 and 2 may be used for patients of any age including patients ≤ 1 year of age.

LCBI must meet at least one of the following criteria:

1. Patient has a recognized pathogen cultured from one or more blood cultures, and

   Organism cultured from blood is not related to an infection at another site.

   Patient has at least one of the following signs or symptoms: fever, chills, or hypotension, and

   Signs and symptoms and positive laboratory results are not related to an infection at another site, and

   Common skin contaminant i.e., *diphtheroids (Corynebacterium spp), Bacillus (not B. anthracis) spp, Propionibacterium spp, coagulase negative staphylococci (including S epidermidis), viridans group streptococci, Aerococcus spp, Micrococcus spp)* is cultured from two or more blood cultures drawn on separate occasions.

2. Patient ≤1 year of age has at least one of following signs or symptoms : fever, hypothermia (<37°C, rectal), apnea, or bradycardia, and
   - Signs and symptoms and positive laboratory results are not related to an infection at another site, and

   Common skin contaminate (ie. *Diphtheroids (Corynebacterium spp), Bacillus (Not B anthraces) spp, Propionibacterium spp, coagulase negative staphylococci* (including *S epidermidis), viridans group streptococci, Aerococcus spp, Micrococcus spp*) is cultured from two or more blood cultures drawn on separate occasions.

Pneumonia

These infections are defined on clinical or radiological criteria that include recent or progressive radiological opacities of pulmonary parenchyma, purulent sputum and recent onset of fever.

Other infections includes, bone and joint infection, central nervous system, cardiovascular system infection, eye, ear, nose throat or mouth infection, gastrointestinal system infection, lower respiratory tract infection, other than pneumonia, reproductive tract infection and skin and soft tissue infection.

Prevention

An effective infection control programme is the key to reduce and control the HAIs.[3] Infection control programme should be comprehensive and include,

- Surveillance and prevention activities
- Training of staff.

It must develop and continually update the guidelines for surveillance and prevention. An infection control committee (ICC) should be constituted that provides a forum for multidisciplinary inputs and share information. The committee should include representation from various department like management, physician, other health care workers, clinical microbiology, pharmacy, central supply, CSSD, housekeeping, etc. It should also review and approve yearly surveillance and prevention programme, review epidemiological surveillance data and identify areas for intervention.

Nosocomial Infection Surveillance

An effective nosocomial infection surveillance system is the indicator of the hospital infection rate. The surveillance system should be simple and flexible, acceptable, sensitive and specific.

Methods of Surveillance

The methods for carrying out the surveillance include simple counting of infected patients, However, it provides limited information. The numerator and denominator should be well defined for calculation of various HAIs rates. Surveillance for nosocomial infection rates should have, active surveillance, targeted surveillance, trained investigators and standardized methodologies.[3]

Active Surveillance

It includes calculation of prevalence as well as incidence rates by dividing a numerator (No. of infections or infected patients observed) by a denominator (population at risk or no. of patient days of risk).[3]

Passive Surveillance

Passive surveillance is of low sensitivity and includes reporting by individual outsides infection control committee, like laboratory based surveillance, extraction from medical records post discharge, infection notification by physician or nurses.

Prevalence Rates

1. Number of infected patients at the time of study / Number of patients observed at the same time x100
2. Number of infected patients at the time of the study / Number of patients exposed at the same time x100

Incidence Rates

1. Number of new nosocomial infections acquired in a period / Total of patient-days for the same period x1000
2. Number of new device-associated nosocomial infections in a period / Total device-days for the same period x1000

Rates for Ventilator Associated Pneumonias

No. of patients with a ventilator associated pneumonia / ventilator days x1000

Rates for device associated infections (for central venous line / catheter associated infection)

No. of patients with infections / device days x1000

Constraints in Surveillance

The final aim of surveillance is to reduce nosocomial infections. However, an improperly designed or ineffectively implemented surveillance system results in inappropriate

data which ultimately results in ineffective prevention of hospital associated infections. The problems are listed below :

1. Lack of trainings and trained staff or specialized teams.
2. Unavailability of guidelines for HAIs criteria.
3. Lack of antibiotic policy for the hospital.
4. Improper sterilization and disinfection.
5. Inappropriate calculation of prevalence and incidence rates.
6. Lack of methods for validating the data made available through surveillance activities.
7. Lack of review of surveillance data by infection control committee.

Role of Stakeholders

1. Hospital Administrators

They are responsible for establishing infection control committee, identifying appropriate resources for implementation of surveillance programme, providing training to the staff, reviewing the nosocomial infection rates, effectiveness programme and implementation of policies.

2. Infection Control Committee

The multidisciplinary committee is overall responsible for coordination of all infection control activities so that infection control programme is effective. In addition the committee should organize hospital surveillance programme and trainings of staff, participate in formulation of antibiotic policy, provide advice and analysis of outbreak investigations.

3. Clinicians

They have a direct responsibility of protecting the patients by adopting practices that minimize infection. They must notify the cases of hospital acquired infection(s) to the infection control team and committee and must comply with the recommendations of hospital antibiotic policy.

4. Microbiologist

They are responsible for handling patients and specimens to identify microbiological organisms, monitor sterilization and disinfection, provide prevalence report, antibiotic resistance and epidemiological typing of hospital organisms.

5. Pharmacologist

They are responsible for providing infection control committee the summary reports and trends of antimicrobial use and help in formulation of antibiotic policy.

6. Infection Control Nurse

They are responsible for nosocomial infection data collection and compilation, investigation of outbreaks, training of personnel and for providing expert consultative advice to staff health and hospital programmes in matters relating to transmission of infection.

Conclusion

A crucial factor in the success of any hospital infection control programme is the awareness of the problem at the grass roots level, to every medical worker. A vigilant attitude and knowledge of the correct procedures for instrument handing, universal precautions, antibiotic usage, waste disposal, etc. is important for all medical personnel. Quite often the occurrence of nosocomial infections is not properly recorded or reported to the Infection Control Committee. Due to the surveillance lapse, the administration is unable to take corrective measures. It is responsibility of all the stake holders to reduce HAI. The Infection control committee and team should prepare yearly work plan for surveillance and provide a scientific and technical support for developing and assessing policies, practical supervision and trainings.Reducing the infection control rate is a team effort, together we can and we will.

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A Review of Natural Toxins Present in Food

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ABSTRACT

Toxins are present in many plants, usually in amounts not harmful to humans. The reason for the same is usually protective i.e. to ward off an insect attack or damage to the plant by microbes, weather or handling. However, consumption of large quantity, spoiled and improperly cooked plants can cause toxicity. This article aims to review a few plant food products, commonly consumed by us, containing harmful toxins.

Introduction

In India, where a majority of the population is vegetarian; vegetable, fruits, pulses and nuts form an important part of our meal. While these are a major source of nutrition, some plant foods do contain toxins which are harmful to our body. Toxicity due to these products often remains undiagnosed due to the belief that all plant foods are safe. Some cases have recently been reported where poisoning took place after the consumption of something seemingly innocuous as the juice of bottle gourd (dudhi).

There are a few cases of food plant poisoning reported worldwide. The incidence of acute poisoning cases due to plant toxins is often underestimated due to non specific nature of the complaints (gastrointestinal symptoms) and lack of awareness regarding such toxicities. This article aims to review a number of plant food products that are found to contain toxins harmful to humans.

1. Vegetables belonging to the family Cucurbitaceae

Several such vegetables are reported to cause poisoning as given below (Figure 1)

Botanical name	Common name	Vernacular name
Cucumis sativus	Cucumber	Kakdi
Lagenaria siceraria	Bottle gourd	Dudhi
Cucurbita pepo	Zucchini	Turaii

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Fig.1 : Zucchini

Toxin : Tetracyclic triterpenoid cucurbitacin compounds

The plants of the family Cucurbitaceae share a common compound, cucurbitacins.[1] They cause bitterness in vegetables like cucumber, gourds, pumpkin, eggplants (brinjals) and are toxic to humans. The intraperitoneal lethal dose for pure cucurbitacins in mouse is 1.2 mg/kg.[2] Conditions like environmental stress, acidic pH, high temperature, scarcity of water, improper storage or over ripe vegetables can cause the level of toxin to rise.[3]

Presentation : In India[4], a 59 year old healthy male, half an hour after drinking a glass of bottle gourd juice, complained of profuse bloody diarrhoea, vomiting and oliguria. His leucocyte count, liver transaminases and serum amylase levels were elevated. In London, an outbreak of gastrointestinal symptoms was attributed to a toxin present in the cucumber served.[5] There are also twenty two reported cases of zucchini poisoning in Queensland, Australia, from November 1981 to December 1982.[6] The main symptoms were gastrointestinal. The common feature in the poisonings is that the patients complained of bitter taste when ingesting the vegetable.

Treatment : The treatment is mainly supportive, consisting of IV fluids, corticosteroids and oxygen.[4]

2. Botanical name : Solanum tuberosum

Common name : Potato

Vernacular name : Alco

Toxin : Members of solanaceae family produce toxins – a solanine and á chaconine (glycoalkaloids). Their function seems to be protective as they are toxic to the insects. It is concentrated in the skin and eye of the potato and not destroyed by washing, soaking or cooking.[7] Levels of toxin increase due to exposure of the tuber to light or adverse

storage conditions, which cause greening and sprouting.[8] It is best to store potatoes in a cool, dark place.

Presentation: Concentration of the glycoprotein present in fresh plants is not toxic. However, there are reports of human poisonings due to ingestion of sprouted or green potatoes. The potatoes having high concentration of toxins are found to be bitter in taste in spite of cooking. The symptoms start within minutes to two days after ingestion of the vegetable. In mild cases, an acute gastrointestinal upset is seen while in severe poisoning, the symptoms like drowsiness, confusion, weakness and visual disturbances are there.[7] There was an outbreak of poisoning due to potatoes in south London in 1979, when 78 school boys were affected 4 to 14 hours after ingestion of the vegetable. The predominant symptoms were gastrointestinal upset, depression of central nervous system followed by coma and episodes of convulsive twitching. All of the affected recovered fully, though some were confused for several days after the incident.[8]

Treatment : The diagnosis is made on the basis of history and examination, followed by scrutiny of the potato remains and peelings. The treatment is mainly symptomatic, consisting of fluids and electrolytes. Anticonvulsants may be given when needed.

3. Botanical name : Prunus amygdalus

Common name : Almonds
Vernacular name : Badam
Toxin : Cyanogenic glycosides (amygdalin)

The toxicity of amygdalin (present in bitter almonds) is attributed to the release of hydrogen cyanide by mild acid hydrolysis or action of enzymes like â-glucosidase enzymes either present in the seed[9], released when the plant is macerated or present in the gut microflora.[10]

Presentation: A case of poisoning after ingestion of bitter almonds was reported where abdominal cramps and vomiting occurred within half an hour of ingesting a mixture of ground bitter almonds with water. On chest x-ray, transient pulmonary infiltrates suggestive of hypoxic respiratory failure were seen.[9] Cyanide released inactivates mitochondrial cytochrome oxidase, thereby causing cells to switch from aerobic to anaerobic metabolism. Anaerobic metabolism favours the accumulation of lactic acid and hence the signs of poisoning reflect the oxygen deprivation of the brain and heart. The signs of acute toxicity include rapid respiration, hypotension, dizziness, headache, gastrointestinal symptoms, CNS symptoms like confusion, stupor, convulsions followed by coma. Patient's breath may have an odour of bitter almonds.

Treatment: Management includes aspiration of gastric contents and administration of activated charcoal.[11] Supportive care includes 100% oxygen, cardiopulmonary resuscitation if necessary, and an appropriate antidote. Antidote for cyanide poisoning includes intravenous sodium thiosulphate and sodium nitrite. Sodium thiosulphate acts as a sulphur donor by conversion to thiocyanate which is relatively non toxic and is eliminated easily. The nitrites act as a source of methemoglobin, for which cyanide has higher affinity than cytochrome oxidase, to form cyanmethemoglobin. This restores the activity of inactivated cytochrome enzyme.[9]

4. Botanical name : Phaseolus vulgaris

Common name : Red kidney beans
Vernacular name : Rajma
Toxin : Lectins are proteins or glycoproteins which have been detected in many leguminous plants like soya beans, lentils and red kidney beans. They bind to the glycoproteins or glycolipids on erythrocytes and lymphocytes. When ingested they may cause three major effects – gastrointestinal, immunological and haemagglutination. The toxin is relatively heat stable and does not degrade completely with cooking. Many lectins are also resistant to stomach acid and enzymes in the intestine. The toxin can cause gastrointestinal symptoms by binding to the luminal surface of the absorptive enterocytes in the small intestine, damaging the microvilli. This disrupts the digestion and absorption of nutrients.[12] The lectins are also known haemagglutinins, i.e they bind to the erythrocytes and promote agglutination. There are around 119 dietary lectins of which half are panagglutinins (bind to all erythrocytes) while the other half are blood group specific. The erythrocytes bind with the circulating phagocytes and lyse the cell, causing haemolytic anaemia and jaundice.[12]

Presentation: The reported cases of poisoning usually occur with raw beans or improperly cooked beans. The first case of poisoning due to partially cooked beans was reported in 1929.[13] A case reported in 1976 in schoolboys, aged 17 years, indicated poisoning with raw red kidney beans resulting in gastrointestinal upset an hour after ingestion.[11] To destroy the toxin, the beans should be boiled thoroughly in fresh water. It should not be boiled at low temperatures as the toxin in incompletely destroyed.

Treatment : Treatment in such cases is usually supportive.

5. Botanical name: Amanita phalloides

Fig. 2 : Amanita phalloides

Common name: Wild mushrooms

Vernacular name: Khumbi

Toxin: While there are many mushrooms that are toxic to humans, *A. phalloides* is the most common cause of severe poisoning. It contains two major types of toxins – amatoxins and phallotoxins.[15] The later do not contribute to the hepatotoxic effects of the mushrooms as they are poorly absorbed from the gastrointestinal tract. The amatoxins are divided into a family of nine cyclic – octapeptides[16], the major ones being a and b, both of which do not differ much in structure and function. Amatoxins produce cellular necrosis through inhibition of the synthesis of messenger ribonucleic acid (mRNA) by blocking of the specific enzyme RNA polymerase II. Hence, transcription is interrupted and the synthesis of proteins is blocked. Because of the high levels of protein synthesis in the liver and gastrointestinal cells, they are the most common systems affected.[16] The toxins are eliminated via bile duct and undergo enterohepatic circulation.

Presentation: There are four stages in the clinical course of *A. phalloides* poisoning.[16] A latent period of around 6 hours, where there are no presenting symptoms is followed by the intestinal phase. It is characterised by symptoms of acute gastroenteritis. Early rehydration is advised in this stage for faster elimination of toxins and prevention of kidney lesions. No signs of liver toxicity or altered coagulation are seen in this stage. Around 24 to 48 hours after ingestion of mushrooms, the patient experiences a feeling of well being. On the third day, condition of the patient worsens with development of jaundice, painful hepatomegaly and bleeding tendencies. Laboratory investigations show elevated bilirubin, liver transaminases, increased prothrombin time and hypoglycaemia. Unless treatment is started, the patient may deteriorate and hepatic encephalopathy, coma and death may follow. Diagnosis of mushroom poisoning can be made by history and clinical symptoms. The leftover mushrooms may be examined for toxins.

Treatment: There are two levels of treatment needed in such cases.[16] First is the symptomatic treatment which includes replenishing the body fluids, restoring the glucose levels in the body and fresh frozen plasma or vitamin K for coagulopathy. Second is to remove the toxin from the body. The mushroom particles still remaining in the intestines should be evacuated. Forced diuresis may have some value if the patient presents within a few hours of the ingestion. Certain studies show improvement with specific antidotes like benzyl penicillin[15,16], thioctic acid[15,16,17] and silymarin[15,16] complex.

6. Botanical name: Ginkgo biloba

Fig.3 : Ginkgo biloba seeds

Common name: Ginkgo, maidenhair tree

Vernacular name: Balkuwari

Toxin: The toxin responsible for the poisoning is 4 – methoxypyridoxine (4 – MPN). It is a heat stable toxin. Gamma amino butyric acid (GABA) is synthesized from glutamine with the help of enzyme glutamate decarboxylase. It requires the help of the coenzyme pyridoxal phosphate. 4 – MPN is a competitive inhibitor of pyridoxal phosphate, hence inhibiting the synthesis of GABA. The decrease in levels of inhibitory neurotransmitter GABA can result into seizures.[18] The seeds of ginkgo affect the prostaglandin metabolism, antagonism of platelet activating factor, scavenging of free radicals resulting in vasodilation, suppression of inflammation and reduced blood viscosity.[19] The antagonism of platelet activating factor may lead to inhibition of platelet aggregation and haemorrhagic incidents. Hence caution should be maintained in patients taking concomitant aspirin, warfarin like drugs. The number of seeds ingested at a time that cause poisoning range from 15 to 574.[18]

Description of poisoning : In a reported case, the patient, a 2 year old girl, developed severe gastroenteritis (vomiting, diarrhoea) along with an episode of convulsions which resolved spontaneously. She had eaten 50 – 60 roasted seeds of Ginkgo, 9 hours before admission to hospital. She recovered without any neurological sequalae.[18] Ginkgo is also known to cause skin reactions[20] and is implicated in cases of cerebral haemorrhage.[19,21] A rare case of anterior hyphaema of the iris is also reported, suspected to be due to ginkgo.[22]

Treatment : The treatment for the poisoning is pyridoxal phosphate and an anticonvulsant like diazepam. The above mentioned list of food plants containing toxins is not exhaustive. It may not be possible to recognize these toxin containing vegetables from the rest. Hence, adequate precautions should be taken in the form of discarding the bitter tasting vegetables and consumption of only well cooked pulses and vegetables. Greater awareness of such toxins will lead to an appropriate prevention and timely treatment.

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Knowledge and Attitudes of School Teachers Regarding Adolescent Mental Health

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ABSTRACT

Aim : The incidence of adolescent mental health problems are increasing. School teachers are a potential paraprofessional resource towards early identification and intervention. To assess the knowledge and attitudes of teachers towards the common mental health difficulties of adolescents.

Methods : 520 teachers of 17 schools of Ahmedabad , Gujarat, participated. The teachers' knowledge and attitudes were assessed with the help of a specially designed proforma prepared by Hunter's Institute.

Results : Out of 520, 77.5 % were women teachers and 22.5 % were men. Teachers were able to identify a mean of 4.4 psychiatric disorders correctly out of a random mix of 15 disorders. Of the 16 questions that assessed the teachers' knowledge about psychiatric illnesses the mean correct answers was 4.8. According to the teachers, the most prevalent problems faced by adolescents with their own self were inability to control anger (53.1%),unpredictable moods (52.9%), preoccupation and dissatisfaction with their skin complexion and pimples on face (51.5%). At home, the adolescents were most commonly disturbed by comparison with others (sibling rivalry), not being able to easily mix with classmates and bullying disturbed them most at school.

Conclusion : Teachers do not feel competent or confident in identifying or handling adolescent mental health problems. A systematic training may help teachers to become a major paraprofessional resource for early identification, intervention and referral for adolescent psychiatric problems.

Keywords : Adolescent mental health, teachers, knowledge.

Introduction

Children and adolescent form 27% of the population [1] and 20% of them are affected by mental health problem.[2] At least half of these show impaired schooling and social development.[3] The suicide rate, a major measurable parameter of mental health, has been increasing steadily in India and has reached 10.5 (per 100,000 populations) in 2006 registering a 67% increase over the value of 1980. Child and adolescent mental health services are limited and restricted to urban areas in India. Educational settings are widely used for treatment of emotional and behavioral problems of school going children.[4-5] India must also join the contemporary initiative to involve the teachers in the comprehensive child and adolescent mental health system. Training teachers can go a long way towards early identification, intervention and referral of needy children and adolescents.

Adolescence is a very turbulent and crucial developmental phase, during which the adolescent experiences physical, emotional, spiritual and moral changes. He passes through the gamut of changes over a period of 7 to 9 years and develops an identity of himself. Teachers are a very powerful influence on the youth. The students consciously or unconsciously consider them their role models. So, what the teachers teach apart from their subjects becomes very meaningful for their students. Teachers can teach them to take their physical and mental development in their stride, to channelize their drives positively, to develop sturdy value system, to make good friends and to establish a balanced identity. Thus, if the teachers are trained scientifically, they can play a major role in enhancing the positive mental health of young people-the next generation of the society. There have been very few studies assessing the knowledge of teachers regarding adolescent mental health. So the present community research study was undertaken with following aims and objectives :

1. To find out the common psychological problems in adolescents as encountered by teachers.
2. To find out personal, family, school and society related issues, as contributing factors to adolescent problems.
3. To assess the knowledge of school teachers regarding adolescent psychiatric problems.

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Material and Methods

Out of 25 schools approached by a team member, 17 agreed to participate in the study. All the teachers dealing with adolescents, on a daily basis, whether teaching languages, science or art and craft or even physical education were included. Basic demographic data which included age, gender, teaching subjects, marital status and standard (class) in which they teach was collected. Presence of mental illness in self or family, currently or in past was enquired. A semi structured questionnaire consisting of 27 questions was prepared on the basis of Hunter's Institute, Australia. After introducing the basic concept of the program, the teachers were explained each question and were asked to tick one of the multiple choices as the best possible answer to that question. The teachers were required to fill up the questionnaire under the guidance of trained trainers (Fig.1).

Fig.1 : Teachers explained about the basic concept of study.

The knowledge of teachers regarding psychiatric illnesses was tested by sixteen multiple choice questions of which four questions were related to general psychiatric epidemiology, three were related to symptoms and nine questions were related to specific psychiatric illnesses commonly seen in adolescents. In the second part of questionnaire there was a list of possible self related, school related, home related and society related problems of adolescents. Each teacher was asked to rank these problems from most important to least important. Each problem related question was followed by a list of possible causative factors. There again the teachers were asked to rank them according to their importance. The teachers were asked whether they discuss mental health problems in their class, whether they considered such training to be useful and whether being a teacher improved their parenting.

Data Analysis : Analysis of outcome was done and comparison was made taking various socio demographic factors into consideration, using t test and chi square test.

Results

Sample characteristic: Out of 520 teacher 404 (77.5 %) were women and 116 (22.5 %) were men. Fifty eight (11.1 %) formed group A (age < 30 years), 355 (68.2 %) formed group B (age 30-50 years) and 107 (20.7 %) formed group C (age >50years). 452 (86.9 %) of teachers were married,68 (13.1 %) were single. 277 (53.2 %) were also parent. 213 (40.9 %) taught languages and 307 (59.1 %) taught other subjects.

1. Identification of psychiatric disorders by teachers

From a random mix of 15 neurological and psychiatric disorders teachers were able to identify 4.4 (mean) disorders correctly.

2. Knowledge of teachers regarding common psychiatric disorders

Out of the sixteen questions that assessed the teachers' knowledge about psychiatric illnesses the mean of correct answers was 4.8.

3. Knowledge about mental illness in teachers grouped according to their age and teaching subject

Teachers	Age (Year)		Subject	
	< 30	≥30	Language	Other than language
Correct answer (mean score)	3.8	5.1*	5.7	5.0

*$P<0.0002$

Interestingly, teachers teaching languages had a slight edge over other subject teachers. The older and more experienced teachers had a definite edge over the younger group.

4. Teachers response to MCQ related to psychiatric disorders

Question A: **Which of the following statements is correct?**	**Answers ticked by teachers (%)**
a) Mental illness refers to five specific illnesses of the brain	24.7
b) Only people who have a family history of mental illness will suffer from mental illness themselves	7.1
c) Many mental illnesses are caused by a physical or chemical dysfunction of the brain	36.5
d) Mental illness only occurs in people who have had an accident or a trauma during childhood	31.7
Question B: **Hallucinations are,**	
a) Drugs that give a lift to depressed people	20.0
b) Drugs that calm down people who are "high"	14.2
c) Seeing, hearing, smelling or tasting things that are not there	35.3
d) Talking to yourself	30.5
Question C: **Which of the following is NOT one of the usual treatments for depression?**	
a) Anti depressant medication	19.7
b) Some form of counseling	12.2
c) Anti psychotic medications	32.6
d) Lifestyle changes	35.5

5. Common problems faced by adolescents as seen by teachers

Category	Problems	Teachers (%)
With one's own self	Anger	53.1
	Moodiness	52.9
	Complexion	51.5
	Pimples	51.5
At home	Comparison with others	50.6
	Over expectation	26.5
	Generation gap	24.4
At School	Not acceptable classmates Bullying, No friends, etc.	50.6

When the teachers were asked to rate the common problems of adolescence as per their level of importance and occurrence, the most prevalent problems faced by adolescents with their own self were inability to control anger(53.1%), unpredictable moods (52.9%), preoccupation and dissatisfaction with their skin complexion and pimples on face (51.5%). At home, the adolescents were most commonly disturbed by comparison with others (sibling rivalry), not being able to easily mix with classmates, bullying disturbed them most at school and in general they were frustrated by over expectations and felt that their older generation did not understand them. Female teachers considered body image and male teachers considered hypersensitivity as important problems.

6. **Factors responsible for adolescent problem as seen by teachers (n=520)**

Factors	Teachers (%)
Peer pressure	64.4
Lack of communication with parents	73.5
Partiality by teachers	37.7

64.4% of teachers rated peer pressure as the most important factor possibly responsible for self related problem.. 50.6% teachers considered that comparison with siblings and others was the commonest problem faced by adolescent at home. Teachers considered that difficulty in communicating with parents was the most important factor responsible for problems at home. Teachers(37.7%) perceived that partiality by teachers (favouring one student over others) seemed to be important factor causing the above problems.

7. **First hand experience with mental illness and discussion in class:**

Discussion of mental health in classroom	Discussed	Not Discussed	Total
A	46	113	159
B	31	330	361
Total	77	443	520

A = Experience of mental illness in family or friends,

B = No experience of mental illness in family or friends

Chi square = 102.503, df=1 .The two-tailed P value < 0.0001, difference is statistically significant.

When the teachers were asked whether they had discussed mental health related issues and difficulties in their class, whether they had given any tips to handle psychological difficulties to their needy students, 14.8% teachers replied in the affirmative whereas 85.2% denied. Interestingly, 59.7% and 25.5% of teachers had either seen or witnessed mental illness in family or friends. It is understandable that witnessing mental illness first hand makes one more aware, more knowledgeable and more confident of expressing views about mental health difficulties.

Those teachers who were also parents were asked whether being a teacher also affected their parenting. 95% of teachers said that being teachers made them better parents. Their practical experience with different temperaments, personalities and problems in the different age group students made them easy to understand and handle the stage wise development of their own children. Most importantly, they were ready with answers, felt equipped and in control of their parent child dyadic relationship.

Discussion

There are very few Indian studies that have explored the teachers' knowledge and beliefs regarding mental health difficulties of adolescent students. There are a few foreign studies on the subject [5,6] although they have involved a limited number of teachers. This study is unique to have taken five hundred and twenty teachers as our study sample and assessed their knowledge and beliefs.

In our study teachers could identify psychiatric disorders with less than 50% accuracy suggest that even the teachers in urban schools find difficult to identify these disorders of adolescents. This has been replicated in previous studies. Teachers' study and training most often does not include any mental health issues. [5,7] So it is not surprising that they do not feel competent and confident in identifying common mental health disorders.[8] Teachers often feel unable to discern between mental health problems and emotional and behavioral difficulties.[5] Although teachers feel confident in identifying grossly expressive problems like Attention Deficit Hyperactivity Disorder (ADHD).

The need for training teachers scientifically is emphasized by this finding as has been mentioned in various previous studies. [3, 5, 6, 8, 9, 10] It has been argued that with the necessary knowledge, understanding and support teachers can function as the 'front line' of identification, support and referral to other services. (Atkinson and Hornby, 2002). Being in the field of education they are reasonably educated as well as keen.[11] It is generally accepted that education based and controlled resources are more accessible and helpful than those controlled by the health sector. Therefore, if teachers are trained scientifically and motivated to treat each student as an individual then a major chunk of primary screening as well as primary intervention can be accomplished.

It is important to understand how teachers perceive the common problems of adolescents and also what factors they think are responsible for causing them. This could make a decisive impact on future teachers' training strategies for early identification and intervention. A majority of teachers felt that students were commonly upsets because of their pre occupation with their physical appearances, were often very touchy over minor matters and felt unable to control their feelings particularly anger. Many teachers felt that peer pressure was a very influential factor in deciding adolescent behavior, as has been replicated in previous studies.[5] Comparison with siblings was also an important contributing factor. Many teachers stated that partiality (favoring one student over others) is also a reason for emotional and behavioral disturbances in students. Teachers have honestly and frankly admitted that their own behavior towards the students might also be contributing the causation of emotional problems of adolescence. This humble confession opens the path towards developing a balanced and non-judgmental attitude of teachers towards students.

Repeated teachers training and assessments are essential along with inter agency collaboration for early identification and timely management of child and adolescent mental health problems.

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"What gets Measured, Gets Focused,
What gets Focused, Gets Improved,
What gets Improved, Gets Appreciated,
What gets Appreciated, Gets Institutionalized".

Perceptions and Practices Regarding Mosquito Control Measures With Special Reference to Insecticide Impregnated Bed Nets.

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ABSTRACT

Background : For prevention of mosquito born diseases, insecticide impregnated bed nets can be a cost effective protective measure. It can reduce morbidity and mortality due to mosquito born diseases especially in areas with dense population. However, it has been observed that there is a lack of awareness in the community regarding its availability and utility. The present study was undertaken with an objective to assess the knowledge, attitude and practice regarding use of impregnated bed nets (IBN).

Materials and Methods: Medical students residing in different hostels of B. J. Medical College, Ahmedabad were randomly selected. The students were interviewed face to face using a preformed and pre tested questionnaire during May-June 2010. Data was analysed by Epi info 3.5.1.

Results: 58.9% students were aware of IBN. However, a few students (8.4%) actually used the bed nets as mosquito control measure.

Conclusion: There is an urgent need for health awareness campaigns through information, education and communication (IEC) to create positive IBN culture and usage. The higher authorities may work together for promoting IBN as comprehensive and integrated vector control measure.

Key words: Mosquito control, impregnated bed nets

Introduction

Vector born diseases are major public health problems in tropical countries. Different types of mosquitoes are responsible for vector born diseases. Approximately 5% of the world population is infected by malarial parasites and the disease is responsible for nearly one million deaths annually world wide.[1] India accounts for approximately two thirds of the confirmed cases of malaria reported in the South-East Asia and about half the cases are due to *P. falciparum*.

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It is well known that areas with high density of population are potential focuses of malaria epidemics e.g. hostels, military barracks, construction sites etc. Several outbreaks of dengue fever were reported from India with a major epidemic of dengue hemorrhagic fever occurred in Delhi (1996) when 10,252 cases and 423 deaths were reported. Death of a medical student at All India Institute of Medical Sciences (AIIMS) due to dengue in recent past and 18 cases in July 2010 was eye opener for us.[2] Japanese encephalitis transmitted by culex mosquito is a major public health problem and has been reported from 26 states and union territories since 1978. Therefore it is important to eradicate breeding places of mosquitoes and to decrease the man-mosquito contacts as low as possible. Currently National Vector Born Disease Control programme emphasis on measures to reduce man-mosquito contact. Several personal protective measures can be used to reduce risk of malaria infection. Since no antimalarial drug is 100% effective for chemoprophylaxis, people should also be advised to follow personal protective measures that reduce contact with infective mosquitoes.[3] Such measures include screening of buildings, use of insecticide impregnated bed nets (IBN), clothing covering maximum body surface etc. Out of these use of IBN is a newer cost effective and eco friendly measure for prevention of mosquito bite and thereby reduction in the morbidity and mortality due to vector born diseases.[4] In the last decade, increasing experience with insecticide treated bed nets have shown reduction of transmission, clinical disease, and childhood mortality. However, lack of awareness in the community has been a barrier for success of IBN programme. The present study was undertaken to know the perceptions and practices regarding mosquito control measures with special reference to insecticide impregnated bed nets (IBN) in hostelite medical students.

Methods

Medical students residing in different hostels of B. J. Medical College, Ahmedabad were randomly selected and included for study purpose. Study population included both boys and girls in different semesters of M.B.B.S. course including intern students. Participants were interviewed face to face using a preformed and pre tested questionnaire during May-June 2010. Data was analysed by Epi info 3.5.1.

Results

A total of 117 students were interviewed.

Table 1: Details of age and gender of study population .(The values are expressed as absolute numbers)

Age group (Yrs.)	Block A	Block B	Block C*	Block D	Total
<=18	0	2	0	13	15
18 - 20	17	9	11	13	50
20 - 22	13	10	8	2	33
22 - 24	5	9	4	0	18
>25	0	1	0	0	1
TOTAL	35	31	23	28	117

* Girls undergraduate hostel

Out of 117 undergraduate students, 50 (42.7%) were in the age group 18-20 years and 23 (19.7%) were girls in the study group.

Table 2 : Perceptions and practices regarding mosquito control measure in study group. (The values are expressed as absolute numbers)

	Perceptions / Practices (Yes responses)	Block A (n=35)	Block B (n=31)	Block C* (n=23)	Block D (n=28)	Total (n=117)
1	Have you suffered fever with rigors in last 1 year?	7	2	4	3	16
2	Are you using any mosquito control measures like All out, Mosquito coils, Repellent etc during malaria season?	35	31	18	28	112
3	What is your approximate cost (Rs. per month) of mosquito repellents / coils during malaria season?					
	⩽ 100	2	8	3	1	14
	>100	33	23	20	27	103
4	Are you using bed net in your room?	1	1	7	1	10
5	Do you know about insecticide impregnated bed nets?	25	21	17	6	69
6	Would you like to purchase IBN?	13	6	7	9	35
7	Do you believe IBN is comparatively more eco friendly and cost effective way of vector control?	27	21	16	22	86
8	At what cost you would like to purchase it?					
	⩽ 100 (Rs.)	29	23	19	22	96
	> 100 (Rs.)	6	5	4	6	21

* Girls undergraduate hostel

Table 2 shows that there were 16(13.55%) students who suffered fever with rigors in the last one year. The perception and practice for malaria prevention among medical student revealed that majority, 112 (95.7%), students were using anti mosquito measures other than IBN. Many students 103 (88.0 %) consider the approximate cost of mosquito control measure (other than IBN) was more than Rs 100/ month. However, 10(8.5%) students used bed nets. Only 35(29.9%) students desired to purchase IBN. Although 86 (73.5%) students believed IBN is more eco friendly and cost effective way of mosquito control.

Discussion

The study showed that knowledge of IBN was 58.9%. Most of the students (95.7%) used chemical methods (repellents, coils etc.) for mosquito control at the cost of Rs 100 per month. This would mean that actual cost of mosquito control measures was Rs 600 per student during malaria transmission period. However, as per the information from government source, the cost of IBN is Rs.147 -00 per net which can be impregnated every 6 monthly at the cost of Rs.12-00 per impregnation. Very few students (8.4%) actually used conventional bed nets as mosquito control measure. The peer study in the north-eastern states shows the use of IBN by more than 90% of population.[5] A similar study done in boarding secondary school pupils in Zaria, Nigeria showed that 87.3% of 150 students had knowledge and were using IBN.[6]

The most promising WHO strategies for malaria control is the provision and use of IBNs, that has been described as an important and popular tool for malaria control programme.[7] There is an urgent need for health awareness campaigns through information, education and communication (IEC) to create positive IBN culture and usage. The higher authorities may work together for promoting IBN as comprehensive and integrated vector control measure.

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Some people carry their heart in their head and some carry their head in their heart. The trick is to keep them apart yet working together.

Anesthetic Management of Paraganglioma of Urinary Bladder

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ABSTRACT

Functionally active catecholamine secreting tumors are usually found in adrenal medulla. However, they can occur anywhere in the body where paraganlionic cells of sympathetic nervous system are found. These tumors are of special interest because of the profound physiological effect produced by release of large quantities of catecholamines. We report two rare cases of paraganglioma arising from urinary bladder, scheduled for transurethral resection under general anesthesia. Profound intra-operative hemodynamic changes in form of hypertension and irregularities in heart rate were observed. Post-operative outcome was uneventful.

Key words: Urinary bladder, paraganglioma

Introduction

Paraganglioma is a tumor derived from specialized chemoreceptor tissue nest of neural crest origin located outside the adrenal medulla. These sites are posterior mediastinum, base of skull, retroperitoneal, aortic, carotid and jugular bodies, larynx, small intestine and urinary bladder.[1]

Urinary bladder paraganglioma are rare, comprises of 0.06% of all bladder tumors and less than 1% of pheochromocytoma. These tumor have familial tendency and commonly seen between 30-40 years of age, with female predominance. It arise from chromaffin tissues of sympathetic nervous system within layers of bladder wall on lateral and posterior side. It is clinically presented as a classical triad of haematuria, hypertension, micturitional attack. (i.e. headache, anxiousness, pounding sensation, flushing, blurring of vision during micturition).[2] Typical clinical presentation along with increase serum dopamine levels are diagnostic. We report two cases of urinary bladder paraganglioma with profound haemodynamic changes during surgery.

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Case History

Two women of 24 and 58 years were admitted with the complaints of difficulty in micturition, painless haematuria for last 25-30 days and frequent headache and palpitation. The patients were evaluated and diagnosed having paraganglioma of bladder. Patients were started on antihypertensive medications (prazosin 2mg once a day and atenolol 25mg twice a day) and investigated. Once the patients were stabilized, they were scheduled for transuretheral resection of bladder tumor under general anaesthesia.

Preoperative examination revealed that patients were malnourished and anemic. There was no papilloedema on fundus examination and no abnormalities were detected on airway, respiratory and cardiovascular examination. The patients were investigated before the planned surgery (Table 1).

Table 1: Pre operative evaluation of patients

Investigations	Case I.	Case II
Hb (gm%)	10.3	12.2
RBS (mg%)	80	83
Blood urea (mg%)	19	17
S. creatinin (mg%)	0.6	0.4
S. Na^+ (mEq/l)	142	144
S.K^+ (mEq/l)	3.4	3.9
S.Ca^{++} (mg%)	8.2	9.2
S.Bilirubin (mg%)	0.9	0.8
X-ray chest	NAD	NAD
ECG	T wave inversion (II, III,VF,V5,V6)	WNL
2D-Echo	Normal	Normal
Urinary VMA mg/24hrs	6.4	7.5

On the day of operation, after confirming nil by mouth status, written and informed consent for ASA grade III was taken. Two peripheral lines with 18G cannula and one central line were secured. Patients' parameters like temperature, ECG, NIBP, SpO_2, CVP, urine output were monitored. Pre induction pulse rate and BP was within normal limits. However, after intubation the pulse rate

Table 2: Anesthetic management of patients.

	Case I	Case II.
Premedication	Inj.glycopyrrolate 0.2mg I.M Tab. midazolam 7.5mg Orally(before 45 min)	Tab diazepam 5mg HS Morning dose of tab prazosin and atenolol
Before induction	Inj ondansetrone 4 mg. i.v Inj fentanyl 100µgm i.v Inj esmolol 100mg i.v bolus over 30 sec	Inj midazolam 1.5mg i.v Inj ondansetron 4 mg i.v Inj fentanyl 80 µgm i.v Inj glycopyrrolate 0.2mg i.v
Induction	Inj. vecuronium 6mg i.v Inj. thiopentone 325mg i.v	Inj vecuronium 6mg i.v Inj thiopentone 350mg i.v
Intubation	oral, cuffed, portex 7.5mmID	oral, cuffed, portex 7.5mmID
Maintenance	O_2(50%)+N_2O(50%) sevoflurane+vecuronium	O_2(50%)+N_2O(50%) sevoflurane+vecuronium

Fig.1: Monitor showing ventricular arrhythmias and hypertension.

Fig.2 : Monitor showing normal ECG with hypertension

increased to 101/min and BP 154/120 mm of Hg. Immediately esmolol infusion @ 200mcg/kg/min was started. In addition, during tumor resection, profound hemodynamic changes in the form of hypertension and ventricular dysrhythmias were noted (Fig.1 and 2). Esmolol infusion and nitroglycerine infusion[3] were used to control these changes. Blood transfusion was required in both the patients due to massive blood loss. The detailed anesthetic management of both the cases is given in table 2.

During recovery, arterial blood gas analysis was found to be normal. Partial tumor resection was done as it was infiltrating the bladder wall. Neuromuscular blockage was reversed with glycopyrrolate 0.4mg IV and neostigmine 2.5mg IV. Extubation and post-operative period were uneventful.

Discussion

Paragarglioma arises from the glomus cells that are special chemo receptors located along the blood vessels playing an important role in regulating blood pressure and blood flow.[1,2] Glomus cells are the part of the paraganglion system, composed of the extra-adrenal paraganglia of the autonomic nervous system derived from embryonic neural crest. Paragangliomas contain neurosecretory granules. About 1-3% paraganglioma have clinical evidence of over secretion. However, they are at high risk of developing hypertensive crisis with catastrophic results.[2]

Diagnostic tests to confirm tumor includes urine VMA[3,4], catacholamines, metanepherine level, plasma catecholamine level, glucagon provocative test, clonidine suppression test, CT scan[2,3] and MRI to confirm size and site of tumor.

The control of BP requires a and b adrenergic antagonists. As majority of paragarglioma secretes predominantly norepinephrine (a -agonist), a -adrenergic antagonists are

used to control hypertension. Non-competitive a-blockers such as phenoxybenzamine bind covalently to a-receptors producing an irreversible blockade and a reflex tachycardia due to the inhibition of presynaptic a_2 adrenergic receptors. Selective a_1-blockers such as prazosin[3] or its derivative doxazosin are more suitable because they have a shorter duration of action and do not produce a_2 adrenergic mediated tachycardia. For long term management of hypertension due to malignant paraganglioma, a blockers are useful. They should be avoided pre-operatively because they increase the risk of acute hypotension during tumor removal and also during immediate post-operative period. a-adrenergic blockade[3,5] generally gives rise to tachycardia, secondary to catecholamine b-receptor stimulation. This requires the subsequent addition of a b-blocker.

Under anesthesia the major risk[3] is due to excessive and different patterns of released catecholamine causing severe hypertensive episodes during tumor resection. Other problems are massive blood loss, inadequate preparation of patient prior to surgery, difficult surgical dissection, histamine, bradykinin release during surgical manipulation can cause profound hypotension, hypothermia and delayed gastric emptying.[2]

Conclusion

Large tumor size, prolonged duration of surgery, increased level of pre operative urinary VMA, epinephrine, norepinephrine, metanephrine[4,5] are significant risk factors for adverse peri-operative events in paraganglioma. However, perioperative morbidity is less and no mortality has been reported. Despite using proper premedication, control of blood pressure with a and b blocker[4,5] significant percentage of patient experienced considerable intraoperative hemodynamic changes. Improvement in perioperative morbidity and mortality is due to newer pharmacological agents, improved technology for tumor localization, new surgical techniques[4] that minimize tumor manipulation and sophisticated intra and postoperative hemodynamic monitoring.

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A peculiar thing in medicine is that we never believe anything unless it can be demonstrated in animal.

Apert Syndrome

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ABSTRACT

Apert syndrome is a form of acrocephalosyndactyly, a condition first reported by Wheaton in 1894 and summarised with nine cases in 1906 by Apert. It is a congenital disorder characterised by malformations of the skull, face, hand and feet. It is classified as a brachial arch syndrome affecting the first brachial arch precursor of maxilla and mandible. We report a nine month old child presented with macrocephaly , syndactyly and delayed milestones at Civil Hospital, Ahmedabad.

Key words Syndactyl, macrocephaly, Apert syndrome

Case History

Apert syndrome is a rare autosomal dominant disorder[1] and occurs 1 per 1,60,000 to 2,00,000 live births. We report a case of nine month old child with macrocephaly and syndactyl since birth, brought to paediatric out patient department of Civil Hospital, Ahmedabad. There was no history of significant antenatal complications. However, the patient had delayed developmental milestones.

On examination, patient had frontal bossing, brachycephaly, midface hypoplasia, depressed nasal bridge, low set ears with shallow orbits. Head circumference was 48 cm with large anterior fontanelle and irregular craniosynostosis. Patient had syndactyl with total fusion of all four fingers and toes in both hands and feet (Fig. 1 : a) frontal bossing, b) depressed nasal bridge, c) syndactyl). The vision and hearing was intact. On investigation, patient haemogram was normal. CT head was suggestive of box shaped moderate dilatation with frontal horns and parallel placed body of both lateral ventricles with 3 cm × 1.9 cm size dorsal posterior interhemispheric cyst. These findings suggestive of corpus callosal agenesis. Bone scan showed widening of cranial sutures, fusion of 4th and 5th metacarpal bone on right side, hypoplastic middle phalanges of 1st, 2nd and 5th finger with absent middle phalanges of 3rd and 4th finger on right side; absence of all distal phalanges both side; soft tissue of 2nd to 5th digits appeared to be fused in both hands and feet suggestive of syndactyl. All these findings were suggestive of Apert syndrome.

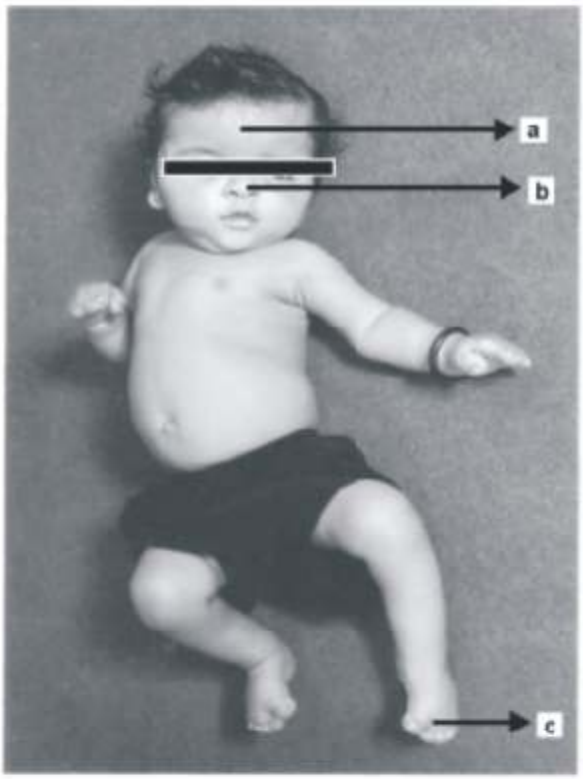

Fig 1: Child with Apert syndrome

Parents were counseled regarding the disease, its progression and prognosis. Patient was referred to Plastic surgery, Orthopaedics and Neurosurgery department for further management.

Discussion

Apert syndrome is caused by mutations in the fibroblast growth factor receptor 2 gene which maps to chromosome 10q25 - 10q25. It is characterised by having central nervous system abnormalities in the form of agenesis of corpus callosum, non - progressive ventriculomegaly and progressive hydrocephalus.[2] Patients of apert syndrome have abnormal facial features in form of abnormal craniosynostosis, flat occiput, shallow orbits, hypertelorism and maxillary hypoplasia. Syndactyl seen in Apert may be osseous or cutaneous with total fusion of 2nd, 3rd and 4th fingers. The osseous developmental pathology appears as irregular bridging between the early islands of mesenchymal blastema that will become bone,

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especially in the distal extremities and cranium.[3] Other associated abnormalities like pulmonary stenosis, overriding of aorta, ventriculoseptal defect, polycystic kidneys, hydronephrosis or vaginal atresia may be seen. The condition should be differentiated from Crouzon syndrome by brachycephaly and ocular proptosis, Carpenter syndrome by clover leaf shaped skull and mental retardation, Pfieffer syndrome by turricephaly and Chotzon syndrome by plagiocephaly. A proper history, thorough clinical examination and radiological findings help in making correct diagnosis.

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1000 cities 1000 lives – the campaign for World Health Day encourage cities and individuals to work across multiple agencies with a wide range of partners to have a long lasting impact on health. The global goal is for 1000 cities to participate in the World Health Day campaign.

Urethral Duplication- A Rare Congenital Anomaly

Shrenik Shah, Ketan Desai**, Ketan Shukla***, A. Nath***, N. Jain****, S. Bajaniya****, K. Kapadia*****

Introduction

Duplication of the female urethra presents one of the most challenging diagnostic and reconstructive problems in female urology. These cases can be fascinating and frustrating. Anatomic variations in the location, size, and complexity of these lesions make them unique. Once the diagnosis is confirmed, definitive therapy often require a detailed knowledge of the relevant operative anatomy and adherence to basic surgical tenets. We report a rare case of complete duplication of the female lower genitourinary tract not associated with other congenital anomaly.[1] To our knowledge the occurrence of this anomaly with complete urinary incontinence is rarely reported.[2]

Key words: Urethra duplication, congenital anomaly

Case Report

A 30 years old female presented with complains of incontinence of urine since birth which increased in last six years. The patient had undergone caesarian section six years ago. On examination, a small opening was seen just posterior to the normal urethral meatus; in which 7Fr infant feeding tube could be passed easily, that drained clear urine (Fig.1).

Fig.1: Urine drained by infant feeding tube

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Micturating cystourethrography showed normal bladder capacity without any reflux or extravasations. On cystoscopy, 0.5 cm opening was seen 0.5 cm distal to the bladder neck. When the infant feeding tube was passed through outer meatus other than the urethral opening it could be seen in the bladder. Right ureteric orifice was situated at higher site and left was normal. Retrograde urethrography[3] (done by injecting contrast into the normal meatus and ectopic opening with the help of infant feeding tube) showed duplication of the urethra (Fig.2)

Fig. 2: Retrograde urethrography showing duplication of urethra

Fulguration of the abnormal urethral tract under cystoscopy guidance was done using bugbee electrocautery under spinal anaesthesia. Bladder relaxants were given post operatively and patient was discharged same day on oral antibacterial and analgesics. The patient was assessed after three months and found to be fully continent after removal of the per-urethral catheter.

Discussion

Complete urethral duplication is a rare congenital anomaly. With proper diagnosis[4] and workup in form of micturating cystourethrogram and cystoscopy, rare congenital urethral malformation like complete urethral duplication can be diagnosed. In the era of minimally invasive technique, fulguration of the abnormal urethral tract using bugbee electrocautery might be very useful with preservation of complete urinary continence post operatively.[5] Urinary incontinence is a major concern following excision of the duplicated urinary tract. However, with proper diagnosis and endoscopic management like fulguration corrects the anomaly along with the preservation of continence.

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ATTITUDE

- *It is what is inside us that counts and makes us go up is our attitude. The foundation of success regardless of your chosen field is attitude. There are primarily three factors "3E" that determine our attitude. They are,*
  - *Environment*
  - *Experience*
  - *Education*
- *People with positive attitudes have certain personality traits that are easy to recognize. They are caring, confident, patient and humble. They have high expectations of themselves and others. They anticipate positive outcomes.*
- *How do you build and maintain positive attitude?*
  - *Become aware of the principles that build a positive attitude*
  - *Desire to be positive*
  - *Cultivate the discipline and dedication to participate those principles*

Bilateral Putamen Necrosis and Delayed Onset Polyneuropathy following Acute Methanol Intoxication

Bhavesh Jarwani, Ruchir Divatai**, Gurudatta Thakkar****

ABSTRACT

Methanol poisoning is a rare but extremely hazardous form of intoxication, occurring after suicidal or accidental events. Methanol is a highly toxic substance and its poisoning produces severe metabolic acidosis and serious neurological symptoms, including severe visual impairment, cranial nerve palsies and polyneuropathy. We report a unique case of acute methanol intoxication presented with involvement of both central and peripheral nervous system.

Key words: Methanol poisoning, putamen necrosis, polyneuropathy, cranial nerve palsy

Case History

A 26 year old healthy man was brought with breathlessness, abdominal pain, vomiting and blurring of vision. There was a history of consumption of 300 ml of adulterated country liquor (proved to be methyl alcohol) before 2 days. Initially the patient was treated at home. As the condition deteriorated, he was brought to the hospital. Laboratory investigation revealed an increased anion gap of 34 mEq/L(normal 20-22 mEq/L), severe metabolic acidosis (pH 6.8, normal 7.3-7.4) with bicarbonate level of 4 mmol/L (22 to 30 mmol/L), s. creatinine 1.9 mg/dL (0.8 to 1.3 mg/dL) and elevated white blood cell count with left shift. The patient was treated with ethyl alcohol (500 ml of 10% IV and 50 ml of 95 % through RT), Inj. sodium bicarbonate (10 amp. IV stat followed by 10 amp in 500 ml NS iv slowly), Inj. folinic acid (50 mg IV) and supporting therapy. Patient did not show any signs of improvement 2 hrs after the initial treatment. The arterial blood gas analysis revealed pH 6.9 and bicarbonate level 10, methanol and ethanol was 147.3 mg/dL and 115.4 mg/dL respectively. The patient was intubated and put on ventilatory support. The patient sensorium further deteriorated and was transferred to dialysis unit for hemodyalisis.

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On the next day, with the improvement in the patient's condition and sensorium, was transferred back to medical ward. However, it was observed that patient's voice was changed and had regurgitation of fluids, difficulty in swallowing and limb weakness. Neurological examination revealed bilateral lower motor neuron type 9th and 10th cranial nerve palsy (absent gag reflex, nasal regurgitation and typical nasal twang). All sensations (pain, temperature and vibration) were diminished in both upper and lower limbs. Patient had weakness and power of 4/5 at major joint in all possible movements. Reflexes were absent and ophthalmological examination revealed disc pallor.

T2W weighted images in MRI revealed bilateral symmetrical hyperintense areas in putamen(Fig. 1) and bilateral hypointense striatronigral areas (Fig. 2). The MRI findings were suggestive of acute necrosis in putamen, striatonigral areas and were consistent with acute methanol intoxication. Although, this does not explains the limb weakness which was worsening gradually. On the 7th day patient was markedly quadriparesis, power in upper limbs was 4/5 while in lower limbs 3/5. Patient was unable to walk and had difficulty in performing fine movements like eating, combing and buttoning-unbuttoning the clothes.

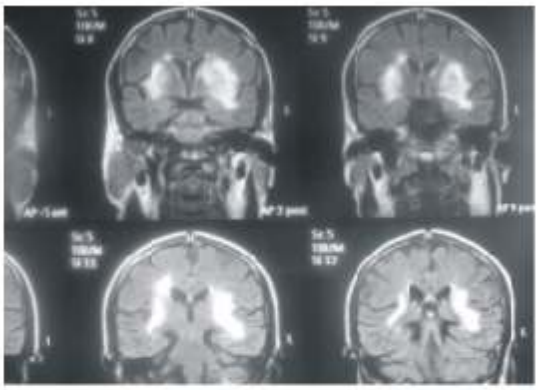

Fig 1 : MRI showing bilateral hyperintense necrosis in putamen

The patient was further investigated and electrodiagnostic studies showed sensory-motor polyneuropathy involving mainly lower limbs with secondary axonopathy and early polyradiculopathy. CSF revealed proteins 112 mg% and cells 5/cu mm, (neutrophil suggestive of cyto-protein dissociation). Supportive therapy and high dose folic acid,

intraocular and intravenous steroid were administrated for retinopathy. Patient showed minimal improvement in sensory and motor functions after 20 days. However 9th and 10th nerve palsies were persistent, hence the patient was discharged with Ryle's tube in situ.

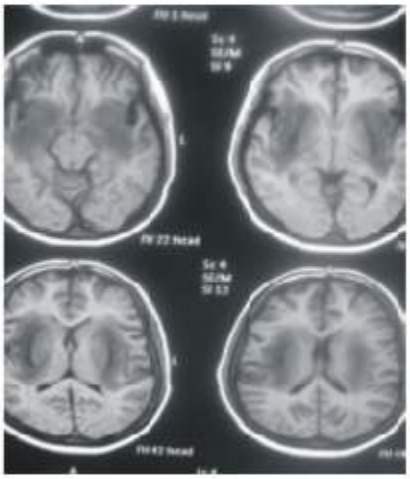

Fig. 2 : MRI showing bilateral hypointense striatronigral area

Discussion

Acute methanol poisoning is a rare accidental or suicidal intoxication due to fraudulent adulteration of alcoholic drinks.[1] It is metabolized by alcohol dehydrogenase, into formaldehyde and finally into formic acid, that have toxic effects on the body.[2,3] This case was unique having classic MRI consistent with acute methanol intoxication and bilateral 9th, 10th cranial nerve palsy sparing commonly affected facial and auditory nerves. In addition, patient also developed delayed clinical pictured of sensory-motor polyneuropathy with radiculopathy and optic nerve necrosis. The combined involvement of central and peripheral nerves is rarely seen and reported.

Multiple bilateral cranial nerve impairment is a delayed sequel of ethylene glycol intoxication and usually develops five to twenty days after ingestion.[4,5] It is often associated with limb weakness, areflexia, and CSF albuminocytologic dissociation, mimicking Guillain-Barré syndrome (GBS).[6] Patient developed multiple cranial nerve deficits, prominent leg weakness and numbness, areflexia, and CSF albuminocytologic dissociation nine days after ethylene glycol ingestion, clinically mimicking GBS. The pathogenesis of this severe polyradiculopathy is not known. Ethylene glycol is metabolized in the liver, generating toxic products, including oxalate. Deposition of calcium oxalate in the leptomeninges or its blood vessels and subarachnoid space of cranial nerves has been reported at postmortem examinations.[2] Patient had optic disc pallor and that is the frequent and common affection in acute methanol intoxication. Optic nerve demyelination secondary to myelinoclastic effect of formic acid has been suggested as responsible for optic nerve damage with or without axonal loss.[3]

The MRI in this patient is classically described in literature. The most characteristic findings in methanol toxicity are bilateral putamen necroses, which may have varying degrees of hemorrhage. Putamen necrosis and hemorrhage probably result from the direct toxic effects of methanol metabolites and metabolic acidosis in the basal ganglia.[3] In methanol intoxication, putamen necrosis is usually permanent; however, in some series, significant regression of the neurological findings and disappearance of extrapyramidal symptoms are reported.[7] Hence this case presents the involvement of central and peripheral nervous system in methanol intoxication.

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Students' Activities and Achievements

- A workshop on Swarnim Gujarat was organized by N.S.S. programme officer, Dr. Dinesh Rathod and his unit. The concept of Swarnim Gujarat, its relation to the Community Health Awareness and Motivation Project (CHAMPS) and various methods of health education was explained by Dr. Ravi Chauhan and Dr. Atul Trivedi. The student volunteers were motivated to prepare short health education messages for community health awareness and work at UHTC / RHTC under the guidance of medical social workers and residents.

- *Peer Guide,* a special interactive programme to provide practical tips and manage stress for summative examination was organized by N. S. S. programme officer Dr Dinesh Rathod on 17th of June 2010. Students were briefed about university examination pattern. The guidance was provided by university topper of B. J. Medical College, Ritima Mangal, Kamal Bhatt and Urvashi Rana. Ritima Mangal talked on 'Writing in Anatomy exam'. She advised students to concentrate more on flow charts and diagrams. Kamal Bhatt focused on ' Writing in Physiology exam'. He talk on how to cut short the lengthy text to the point wise answers. Urvashi Rana highlighted on 'Writing in Biochemistry exam', and advised students to attend each and every questions and complete them in stipulated time. The toppers also advised novice how to manage time and prepare for the next day theory paper. They also informed regarding keeping an extra copy of examination receipt with parent / friend at hostel, diet and sleep management. Tips for practical exams were also given to the students. This was followed by a scholarly presentation on 'Stress Management and Examination Anxiety', by Dr. Surabhi Verma, resident of Psychiatry Department.

- *World Environment Day,* the theme for the year 2010 is *"Many Species. One Planet. One Future"*, echoes the urgent call to conserve the diversity of life on our planet. Since inception of Nirmal Gujarat Abhiyan in 2007 by Government of Gujarat, it is the tradition of B. J. Medical College, Ahmedabad to dedicate this day to acknowledge and motivate the class IV workers for their services throughout the year to keep the institute clean and green. Sanitation & Cleanliness Committee organized a special programme on 5th of June 2010. Six servants out of 135 were selected for the outstanding work from north, south and central wings of college and three from A, B-D and C blocks of students' hostels.

- College football team won the Horizon cup, an inter college football tournament for medical and paramedical colleges of the state and was declared the CHAMPIONS!! The team consisted of Vidur Joshi(Captain), Karan Desai (vice-captain),Uday Jalu, Ashish Bavishi ,Shitanshu Shekhar, Parth Bhatt,Arshad Badar, Jignesh Chauhan, Kewal Kanabar, Hardik Jobanputra, Umang Patel, Rahul Sinha, Mohammad Sejar Ali, Jaidip Sharma, Monil Parsana, Hiral Rajdev and Vandan Raiyani

- The students performed a seven minute long group dance, based on the theme 'Twisted Transistor' at annual cultural festival VIBRANT 2010, which was well appreciated. The group named 'Invasion' consisted of Meet Agrawal, Nitisha Kamath, Ritema Mangal, Vinit Patel, Anuradha Madiya, Kruti Rajvansh, Mohammed Sejar Ali, Hiral Rajdeep, Disha Revdiwala and Suchit Dadia.

- Monisha Purkayastha secured second position in both 'solo song competition' (classical song category) and "solo dance competition" (semi - classical dance category) at annual cultural festival, VIBRANT 2010 at Baroda Medical College.

- Rushikesh Shah. (Intern) secured first position in Badminton men singles and doubles (Hiren Bhabhor, II/III) and table tennis men doubles (suchit dadiya III/I) at annual cultural festival, VIBRANT 2010 and brought laurels to institute.

Samples of References Citation Format

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Grant received for PMR course from Hon'ble Health Ministers (State) Shri Parbatbhai Patel

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Inauguration of Q- switched ND-YAG laser by Hon'ble Health Ministers Shri Jay Narayan Vyas, Shri Parbatbhai Patel and Shri Pradeep Singh Jadeja

Lighting the lamp at CME on *Role of Molecular Biology in Clinical Diagnosis* by Biochemistry department

***Champions* Horizon cup 2010**

Deputy quality manager with the technical assessor of Histopathology & Cytology

Technical assessor at Microbiology department

CME on *Non-Communicable Diseases* organized by Community Medicine

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NABL accreditation

Students activities under *Swarnim Gujarat* at the institute

Training on urban health on *World Health Day*

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