ISSN - 2394-9473 (Print) • ISSN 2395-1796 (Electronic)

Volume 2 | Number 2 | July-December 2016

International Journal of Contemporary Microbiology

Website : www.ijcm.co

International Journal of Contemporary Microbiology

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Website: www.ijcm.co

Print: ISSN-2394-9473, Electronic: ISSN 2395-1796
Frequency: Six Monthly

International Journal of Contemporary Microbiology is a double blind peer reviewed international journal which has commenced its publication from January 2015. The journal is half yearly in frequency. The journal covers all aspects of pathology practice and research. The journal has been assigned ISSN 2394-9473 (Print Version) and ISSN - 2395-1796 (Online Version). The journal is indexed in many international data bases like Google scholar, EBSCO, Pro Quest etc.

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Editor

Dr. R.K. Sharma
Institute of Medico-legal Publications
4th Floor, Statesman House Building, Barakhamba Road,
Connaught Place, New Delhi-110 001

Printed, published and owned by

Dr. R.K. Sharma
Institute of Medico-legal Publications
4th Floor, Statesman House Building, Barakhamba Road,
Connaught Place, New Delhi-110 001

Published at

Institute of Medico-legal Publications
4th Floor, Statesman House Building, Barakhamba Road,
Connaught Place, New Delhi-110 001

International Journal of Contemporary Microbiology

CONTENTS

Volume 2, Number 2 **July-December 2016**

DOI Number: 10.5958/2395-1796.2016.00023.5

Antibiotics in Dentistry

Prashanth Kumar Katta[1], Megharaj Doddagudar[2]

[1]Assistant Professor, Department of Restorative Dental Sciences, King Khalid University, Abha, Kingdom of Saudi Arabia, [2]Department of Prosthodontics, Riyadh College of Dentistry & Pharmacy, Riyadh, Kigdom of Saudi Arabia

ABSTRACT

Antibiotics have become an important part of our treatment plan in endodontic practice. The uses of antibiotics are many but the disadvantages of antibiotics are of significance and they should not be used indiscriminately leading to the development of resistance strain in the body. This article highlights the uses and indications of antibiotics in dental practice.

Keywords: *Antibiotics, disadvantages, indications, uses*

INTRODUCTION

Dental practice has seen a sea change in the way treatment is done. Bacteria is significant particularly in endodontic infection where it is important to eliminate microbes both within the tooth and in the periapical region. The bacterial strains are numerous and their elimination depends upon the effectiveness of the agent used to eliminate it[1].

Indications of antibiotics[2, 3]:

Odontogenic infections: cases where there is swelling due to periapical abscess must be given antibiotics to bring down the anaerobic bacteria. But this should be done only after the initial endodontic treatment is done.

Non odontogenic infections: infections such as tuberculosis, syphilis, leprosy and non-specific infections of bone. Broad spectrum antibiotics like flouroquinolones which act by inhibiting DNA sunthesis can be prescribed in these cases.

Prophylaxis: some times antibiotics are needed to avoid infections in future due to dental procedures, particularly in case where the patient is prone to develop infective endocarditis. In such situation the drugs are prescribed before the treatment is started.

• Tooth extractions

• Periodontal surgery, placement of subgingival antibiotic fibers/ strips, scaling and root planing, proving, recall maintenance

• Dental implant placement

• Replantation of avulsed teeth

• Endodontic (root canal) instrumentation only if beyond the root apex and endodontic surgery

• Initial placement of orthodontic bands (not brackets)

• Intraligamentary and intraosseous local anesthetic injections

• Postoperative suture removal (in selected circumstances that may create significant bleeding)

• Prophylactic cleaning of teeth or implants where bleeding is anticipated

Medical Conditions for which Endocarditis Prophylaxis is recommended[1, 3, 4]:

Premedication is recommended ONLY for patients with the following conditions associated with the highest risk of adverse outcomes from endocarditis:

Corresponding author:
Dr. Prashanth Kumar Katta
Assistant Professor, Department of Restorative Dental Sciences, King Khalid University, Abha, Kingdom of Saudi Arabia, Email: drprashanthkumar@yahoo.com
Mobile: +966538073497

1. Prosthetic cardiac/heart valve.

2. History of IE.

3. Cardiac transplant recipients who develop valve pathology.

Infective endocarditis[3, 5, 6]:

1. It results mainly due to frequent exposure to random bacteremias associated with daily activities than from bacteremias caused by a dental, GI tract or GU tract procedure.

2. Prophylaxis may prevent an exceedingly small number of cases of IE, if any, in individuals who undergo a dental, GI tract or GU tract procedure.

Antibiotics for revascularization procedures[2, 7, 8]: The antimicrobial paste is placed within the canal to a depth -2mm short of the remaining vital tissue sin a lentulo spiral. The accesse cavity is sealed with 3mm-thick cavit and then glass ionomer cement so a double seal is created. After 2 weeks, the patient reviewed. If the tooth is asymptomatic without any clinical signs of pathology in the next visit, the canal is thouroughly irrigated with NaOCl and chlorhexidine followed by saline and dried. Then bleeding is induced within the canal by aking instrument beyond the apex. After blood clot is formed, MTA is placed 3mm below the level of CEJ. The access cavity is filled with bonded restoration and tooth is reviewed periodically.

Drugs to control postoperative pain after endodontic treatment: post-treatment pain continues to be a significant problem after dental procedures. For patients presenting with preoperative pain, it has been reported that up to 80% of this population will continue to report pain after endodontic treatment, with pain levels ranging from mild to severe. Antibiotics are not needed in all the case. Depending upon the status of periapical tissues and the procedure performed in the clinic the following drugs can be used[6, 7].

Drugs that block inflammatory mediators that sensitize or activate pulpal nociceptors:

(a) Non-steroidal anti-inflammatory drugs (NSAIDs)

(b) COX-2 NSAIDs

(c) Corticosteroids

2. Drugs that block the propagation of impulses along peripheral nerves: long–acting local anesthetics

(a) Bupivacaine

(b) Etidocaine

3. Drugs that block central mechanisms of pain perception and hyperalgesia

Opioids are potent analgesics that are often used in dentistry in combination with acetaminophen, aspirin or ibuprofen.

Few facts about antibiotics[9, 10, 11]:

(a) Antibiotics are not curative, but instead function to assist in the re-establishment of the proper balance between the host's defenses (immune and inflammatory) and the invasive agent(s).

(b) Antibiotics are NOT a substitutes for surgical intervention.

(c) The most important initial decision is not which antibiotic to prescribe but whether to use one at all.

(d) The greatest potential harm to the host defenses may result from antibiotics that easily penetrate into the mammalian cell and the least harm is observed with bactericidal, nonpenetrating agents (penicillins and cephalosporins).

(e) The greater the antibacterial spectrum of the antimicrobials used, the greater the number of drug-resistant microorganisms that develop, and the more difficult it is to treat a resulting superinfection.

(f) Bactericidal agents are required for patients with impaired host defenses.3 However, bacteriostatic agents are usually satisfactory when the host's defenses against infections are unimpaired.

A note about dosage and interval:

1. The major factor in the clinical success of most antimicrobial agents is the height of the serum concentration of the drug and the resulting amount in the infected tissue.

2. goal of antibiotic dosing is to achieve drug levels **in the infected tissue** equal to or exceeding the minimal inhibitory concentration of the target organism.

3. initiate antibiotic therapy with a loading dose (an initial dose higher than the maintenance dose).

4. An oral antibiotic should ideally be administered at dosing intervals of three to four times its serum half-life, particularly if steady-state blood levels are desired (as may be indicated with beta-lactam agents).

CONCLUSION

The dentist should register in the mind that indiscriminate use of antibiotics must be avoided. In endodontic infections the clinical procedure is more important than antibiotics. The use of intracanal irrigants, medicaments within the canal and the precision with which cleaning and shaping is done is more important. Antibiotics are only an adjunct but not a substitute to the clinical treatment.

Conflict of Interest: None

Source of Funding: Nil

Ethical Clearance: Not needed as it is a review article.

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DOI Number: 10.5958/2395-1796.2016.00024.7

A Socio-cultural and Religious Underpinnings and Sentiments Around Male Circumcision in the Context of the HIV Epidemic

Sartaj Ahmad[1], Arvind Kumar Shukla[2]

[1]Assistant Professor (Medical Sociology), [2]Assistant Professor (Biostatistics), Subharti Medical College, Swami Vivekananda Subharti University, Meerut UP India

ABSTRACT

In the Indian context male circumcision is strongly associated with specific religions and little is known about the socio-cultural and religious dimensions of this practice at the community level, the sensitivities attached to this practice, and its acceptance as a potential method of HIV infection prevention. Although male circumcision is recommended as an HIV prevention option, the religious, cultural and biomedical dimensions of its feasibility, acceptability and practice in India have not been explored till date. This study explores socio-cultural, beliefs, religion, complications and understanding of the community about adult male circumcision as an HIV prevention option in India.

Keywords *– Male circumcision, Socio-cultural, religion, Complications, HIV prevention*

INTRODUCTION

Male circumcision is one of the oldest and most widespread traditional and surgical procedures in the world. Religious beliefs and Socio- cultural systems will have a greater significance in determining attitudes towards MC. In the Indian context male circumcision is traditionally and commonly practiced in certain minority communities such as Jewish and Islamic. Since it is not a practice followed by the Hindus who are in majority in the country. World Health Organization (WHO) estimates that 30% of all males in the world 15 years and older are circumcised and almost 70% of them are Muslims. [1]

Socio- Cultural Factors Religious Beliefs

Male circumcision is performed by the traditional circumcisers who are easily accessible and affordable to the community. There are modern techniques that provide safer, simpler, quicker, and cheaper alternatives to the traditional practices.[2] People reported that traditional circumcision was performed among affluent families as a celebration and in poor families as a small ritual. The demand for circumcision normally increases during the winter break or during the Christmas holidays. But it should not be monsoon season due to the fear of infection, and during the rains the urine is hazardous. In the Bungoma District of Kenya, circumcision takes place after the harvest. [3]

According to Islam religion, it is a religious practice. So it recognized as one of the oldest practices and an integral part of the Islamic culture and considered to be a Sunnah in Islam. The individual beliefs on male circumcision amongst the Muslim community respondents were associated strongly with religious ritual and practices. Islam does not have a fix age for circumcision but majority of the Muslims preference for circumcising their children as early as possible. All of them considered circumcision as a religious obligation. Traditional male circumcision, termed as “khatna” “Mussalmani” and “sunnat”. Traditionally, it is performed by zarrah, nai (salmani) or hajjam . They performed circumcision for the purpose of religion rather than hygienic benefits.

Corresponding author:
Dr. Sartaj Ahmad
Assistant Professor (Medical Sociology), Subharti Medical College, Swami Vivekananda Subharti University, Meerut UP India
Telephone: 09897093882

In Judaism male circumcision is considered a commandment from God. In Jews, it is performed without anesthesia on the child's 8th day of life. According to Christian religious leader identified Male Circumcision as essentially a Muslim practice but it can be performed in Christian community. In a Christian religious, it is also believed to improve genital hygiene and help prevent sexually transmitted diseases. [4]

Traditional male circumcision

Most of the countries where male circumcision is traditionally carried out do not have a national policy on health standards relating to traditional male circumcision. There are therefore no processes for training, certification or supervision. There have been references to male circumcision across diverse cultures and religions. The acceptability of traditional male circumcision and the desire to continue the practice among societies depends on a variety of factors including socio-cultural norms and values, rural vs. urban life, cost of traditional, medical circumcision, accessibility of medical services, awareness of complications, and perceptions of potentially harmful practices associated with the ritual.[5]

Traditionally circumcisers are most commonly barbar in India, traditional birth attendants in Nigeria, village doctors (quacks) in Zambia, blacksmiths/ shoemakers in Guinea-Bissau, [6] village elderly in Kenya. [7]

Traditional operation techniques

Traditional circumcisers are not formally trained and have acquired the knowledge of cutting practices from their fathers and forefathers. [8] Traditional male circumcision is not a standardized procedure. Excessive removal of the foreskin, on the other hand, as well as deep cutting, as reported for traditional male circumcision among the Bukusu in Kenya, can lead to delayed wound- healing. [9]

Uses of instruments used for cutting

People used non-sterile instruments like sea shells, razor blades, household knives, scissors, glass fragments, wooden needles, and self-made devices. In some cases traditional circumcisers use a single blade to circumcise all the boys, and in others they use one knife per child. [10]

Most medical institutions in various countries agree that due traditional practice there may be health effects. The person can suffer from urine problems like, the Properly urination might split, it can also damage the penis.

Wound care

Various materials are used for wound coverage like ashes of the earthen, ashes of burned wood, smoke from a fire made with eucalyptus leaves, herbs, warm milk, fresh cow's urine or mildewed dung. There is no routine of suturing the wound. Anaesthesia is not used for traditional male circumcision.[11] So some people catch infection, and it takes a little long time to heal. An South African study also indicated that similarities between medical and traditional circumcision in respect of healing time. [12] Otherwise people today are aware and they prefer doing it through some visits doctor for medicines and other ointments, and many people bring their own blade.

Use of Modern medicines in the traditional MC procedure:

With modernization and advent of over the counter pharmaceutical products, traditional circumcisers tend to incorporate modern medical techniques while performing MC. Some people are aware of the use of local anesthetics, modern medicine, ointments and tetanus injections after the procedure. [13]

Benefits of Male Circumcision

The beneficial effects include prevention of phimosis, paraphimosis, and balanoposthitis. The risk of urinary tract infection has been shown to decrease from 7 per 1000 to 2 per 1000 after circumcision. Technical guidance on the provision of safe male circumcision services is therefore necessary. There is urgent need of increased professional and public awareness regarding the circumcision practice. [14]

Few studies show that human papillomavirus infection of penis is less in circumcised males. [15]

Circumcised men are said to enjoy sex more and also to give more pleasure to their partners. MC increases sexual power and sexual pleasure and confidence during penetrative sexual intercourse.

Male Circumcision and HIV/ AIDS

Circumcision may protect against both bacterial and viral STIs because the warm, moist area under the foreskin provides a suitable location for the pathogens to replicate. In addition, uncircumcised men may be at increased risk due to entry of pathogens through the inner surface of the foreskin.

There is clear evidence that circumcised men are at a significantly lower risk of acquiring HIV infection. After the circumcision, the head of the penis is exposed all the time. The skin on the shaft of the penis is left intact. In adults, it is left slightly loose to allow enough skin for erection. The penis looks different and this may take some getting used to. There is clear evidence that circumcised men are at a significantly lower risk of acquiring HIV infection, probably because the inner surface of the foreskin contains numerous Langerhans cells and CD4+ T lymphocytes (primary HIV-1 target cells), and the warm, moist environment under the foreskin. This explains the surprising low rates of HIV in Islamic nations, such as Egypt, Sudan, Iran, Iraq, Pakistan, Bangladesh, and Indonesia, compared with their neighbors.

The WHO (2007), the Joint United Nations Programme on HIV/AIDS (UNAIDS; 2007),and the Centers for Disease Control and Prevention (CDC; 2008) state that male circumcision significantly reduces the risk of HIV acquisition by men during penile–vaginal sex, but is not a substitute for other interventions to prevent HIV transmission. [16]

The presences of other sexually transmitted diseases (STDs), which independently may be more common in uncircumcised men, increase the risk for HIV acquisition. [17]

In view of the continuing challenge of the HIV disease burden in India and the WHO recommendation to add MC to the existing national HIV prevention programs , it is vitally important to understand the meaning and practice of MC in a multi-religious and multi-ethnic country like India. [18]

The preliminary findings of the Indian Council of Medical Research (ICMR) task force study on community perspective of MC conducted by National AIDS Research Institute (NARI) had revealed that "male circumcision is a religious rite of circumcising communities; this belief is a common perception in the general population and religious sentiments are evident". [19]

Some studies found that circumcision was associated with lower rates of syphilis, chancroid, and genital herpes. [20]

Types of complications

It is frequently performed by untrained persons without anesthesia. The babies experience pain more intensely for a prolonged period and over a wider area of the body than older children do. [21] The most common complications are blood loss and infection. The long-term complication of circumcision is metal stenosis, which can lead to dysuria, incontinence, bleeding after urination, and urinary tract infections.[22] Other complications include concealed penis, urinary fistulas, chordee, cysts, lymphedema, ulceration of the glans, hypospadias, epispadias, and impotence. [23]

Studies have consistently demonstrated decreased incidence of urinary tract infections (UTIs) among circumcised compared with uncircumcised boys. [24]

RECOMMENDATIONS

Traditional circumcisers have been carrying out male circumcision as part of an initiation ritual for centuries and they are providing services for many people. The lack of information on certain aspects of traditional male circumcision, a practice that is common and widespread. Men who choose to be circumcised should be referred for surgical consultation and provided access to high-quality, voluntary male circumcision surgical services. There is need for educating all communities about the correct meaning, practice and procedures of MC in order to remove the misperceptions and give correct knowledge about MC.

Training of traditional circumcisers such as the duration of training, supportive supervision, the evaluation of training materials and the involvement of the community (e.g. by involving traditional leaders in advocating for the use of sterile instruments, general hygiene , infection control, HIV prevention, anatomy, safe operation techniques, wound care after circumcision, and existing national regulations on male circumcision.

Training to bring attitudinal change among health

care providers is recommended. The rationale of training traditional circumcisers involves not only improving the safety of traditional circumcision but also capitalizing on traditional practices so as to reach out to male adolescents with messages on HIV prevention and broader sexual and reproductive health education.

Parents and guardians should be informed about the medical benefits and risks of neonatal male circumcision. When desired by parents and guardians, medically attended neonatal male circumcision should be performed by trained practitioners according to accepted standards of clinical care, with appropriate use of analgesia. The strengthening of medical male circumcision services through the provision of affordable, accessible and safe circumcision by the formal health sector provides an alternative to traditional male circumcision.

CONCLUSION

Most of the circumcision is carried out by traditional circumcisers. Male circumcision has been advocated as an additional HIV prevention strategy but in India, religion associated beliefs pertaining to male circumcision emerged to be critically sensitive and they could have grave implications as majority of the population in the country is non-circumcising. There is a need to better understand who are the "traditional circumcisers", since there is often a mix of people providing circumcision in communities, ranging from genuine traditional circumcisers to health workers without specific training, facilities or supervision, to quacks motivated by monetary gain. There is urgent need of increased professional and public awareness regarding the circumcision practice.

Acknowledgement: None

Conflicts of Interest: None

Sources of Funding: Nil

Ethical Clearance: Not Applicable

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DOI Number: 10.5958/2395-1796.2016.00025.9

Knowledge, Attitudes, Belief and Practices of Community Towards Epilepsy, Malaria and Measles in India

Krishan Kumar Meena

Assistant Professor, Community Medicine, Rama Medical College, Hapur, UP

ABSTRACT

Background: lack of awareness among community towards epilepsy, malaria, measles in India leads morbidity and mortality. **Aim**: to study the knowledge, attitude, belief and practice towards epilepsy, malaria and measles. **Method:** studies related to knowledge, attitude, belief and practice towards epilepsy, malaria and measles were analyzed**. Results: -** Majority of respondents of the study did not know the causes of occurrence of malaria. About 37.6 % of respondents knew that the mosquitoes transmit malaria and 11.3 % respondent believes that it is caused by the curse of nature. Occurrence of malaria was also reported due to unknown infection (1.25%), dirty water (3.8%), bad sanitation (1.7%) & bacteria (0.4%). **Recommendations:-** increases awareness among target group through mass media, nukkad natak, role play and health workers etc. about facts and right approach of the treatment of epilepsy, malaria and measles

Keywords:- *Practice, belief, epilepsy , malaria, measles.*

INTRODUCTION

The estimated prevalence rates for epilepsy suggest that about 6 to 10 million people live with epilepsy in India[1] Stigma attached to epilepsy and misconception about the disease are often more devastating than the disease itself[2] .Stigma to epilepsy not only influence the treatment of disease, but also affect education, employment, marriage, child bearing, discrimination at school, jobs and family.

Malaria is one of the major disease burdens among tribal. Besides mosquitogenic condition in tribal areas, poor knowledge and attitudes towards the disease is also one of the reasons for maintaining high endemicity in some areas. People mostly believe in traditional practices of healing and their myths and superstitious beliefs forbid them to utilize the modern treatment facilities/services.

Measles is highly infectious disease amongst younger population. When the disease is introduced into a virgin community more than 90% of the community will be infected[3,4]. In this situation the knowledge, attitudes, beliefs and practices of family and that of mother in particular plays an important role in decreasing the impact of the outcome in such a case [5,6] .

MATERIAL AND METHOD

Studies related to knowledge, attitudes, belief and practices regarding epilepsy, malaria, and measles were analyzed.

RESULTS

In the study knowledge, attitude and practices among persons attending tertiary care hospital of Bundelkhand region, Central India carried by Arvind kumar Kankane et all. The total of 400 individuals participated in study. They comprised of 290 males and 110 females. Age ranged from 15 to 65 years.

Knowledge; - Majority of persons (94%) were heard or read about epilepsy. Half of them knew at least 1 person of epilepsy. Regarding cause of epilepsy 58% believe that epilepsy is an organic brain disorder while 68% believe that epilepsy is a mental problem. Prevalent misconceptions were that epilepsy is a result of previous life sin (23%), contagious (21.5%) and is hereditary disorder (43.5%). Attitude:-Sixty one percent persons thought that epilepsy creates hindrance in normal life of patients. More than half persons believe that person with epilepsy should not marry (54%) or may not have normal sexual relations (58%). Sixty two percent persons were against education of epileptic patient while 64% believe

that epileptic persons should not work. Fifty three percent persons believe that society should behave differently with a person with epilepsy. About 20% persons would object their kids to play or study with epileptic child. Practice: - Sixty five percent persons believe that allopathic medications are effective in treatment of epilepsy. Holy treatment with worship (23%) and tantric (17.8%) were also believed to be effective in treatment of epilepsy. Regarding first aid treatment, 68% would prefer to take the patient to hospital. However, 49% would sprinkle water on face and even 25.5% and 26% would give bunch of keys in hand or put shoes or onion on nose of patient respectively.

While in the study knowledge, attitude and practice towards malaria in tribal community of Baigachak area, Dindor, district, MP carried by V. Soan Majority of respondents of the study did not know the causes of occurrence of malaria. About 37.6 % of respondents knew that the mosquitoes transmit malaria and 11.3% respondent believes that it is caused by the curse of nature. Occurrence of malaria was also reported due to unknown infection (1.25%), dirty water (3.8%), bad sanitation (1.7%) & bacteria (0.4%)

In another study knowledge, attitude and belief and practice of mothers regarding measles in rural community carried by SD Kandpal et all 229 (93.5%) mothers enumerated one or the other symptoms of measles and the same percentage of mothers told fever as the commonest symptom of measles followed by cough (67.3%) and coryza (51.4%). Skin eruptions as a manifestation of measles was known to 81 (33.0%) of the mothers. Only 21 (8.6%) of mothers responded otitis medis as one of the symptoms of measles.

When mothers were enquired about any home treatment given to their children in case of measles, 93.5 % of the mothers responded with some type of home treatment for measles, most common being administration of Neem (75.5%) followed by Laung (69.4%), Jhusanda (45.7%) and Tulsi (41.6%). Administration of Jeera (roasted) and Javetri was the choice of 42 (17.1%) and 33 (13.5%) of mothers respectively. Most common treatment combination was Laung along with Tulsi 102 (41.6%) followed by Tulsi with Kishmis (34.3%) and Laung with Javetri 81 (33%).

CONLUSIONS

It is concluded that the - Sixty five percent persons believe that allopathic medications are effective in treatment of epilepsy. Holy treatment with worship (23%) and tantric (17.8%) were also believed to be effective in treatment of epilepsy. Regarding first aid treatment, 68% would prefer to take the patient to hospital. However, 49% would sprinkle water on face and even 25.5% and 26% would give bunch of keys in hand or put shoes or onion on nose of patient respectively.

Majority of respondents of the study did not know the causes of occurrence of malaria. About 37.6 % of respondents knew that the mosquitoes transmit malaria and 11.3 % respondent believes that it is caused by the curse of nature. Occurrence of malaria was also reported due to unknown infection (1.25%), dirty water (3.8%), bad sanitation (1.7%) & bacteria (0.4%)

When mothers were enquired about any home treatment given to their children in case of measles, 93.5 % of the mothers responded with some type of home treatment for measles, most common being administration of Neem (75.5%) followed by Laung (69.4%), Jhusanda (45.7%) and Tulsi (41.6%). Administration of Jeera (roasted) and Javetri was the choice of 42 (17.1%) and 33 (13.5%) of mothers respectively. Most common treatment combination was Laung along with Tulsi 102 (41.6%) followed by Tulsi with Kishmis (34.3%) and Laung with Javetri 81 (33%).

Recommendations;- Increases awareness among target group through mass media, nukkad natak, role play and health workers etc. about facts and right approach of the treatment of epilepsy, malaria and measles.

Conflict of Interest;- No conflict of interest.

Source of Funding; No source.

Ethical Clearance;- I have properly referenced all the articles which I have used.

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DOI Number: 10.5958/2395-1796.2016.00026.0

Bhanja Virus: A Review on Virology and Public Health Issues

Subha Ganguly[1], Praveen Kumar Praveen[2], Rajesh Wakchaure[3], Parveez Ahmad Para[4], Subhash Sharma[5], Kausar Qadri[6], Tanvi Mahajan[7]

[1]Associate Professor, Department of Veterinary Microbiology, [2]Assistant Professor, Department of Veterinary Public Health & Epidemiology, [3]Associate Professor, Department of Animal Genetics & Breeding, [4]Assistant Professor, Department of Livestock Products Technology, [5]Assistant Professor, Department of Veterinary Parasitology, [6]Assistant Professor, Department of Veterinary Medicine, [7]Assistant Professor, Department of Veterinary Anatomy & Histology, Arawali Veterinary College, Bikaner, Jaipur Road, V.P.O. Bajor, Sikar, Rajasthan, India

ABSTRACT

The Bhanja virus was first discovered in a tick (*Haemaphysalis intermedia*) and is a tick-borne Phlebov irus recovered from a paralyzed goat in Bhanjanagar, India in 1954.[1] Bhanja virus in humans was first documented in 1974 when Charles Calisher who was himself contracted while working with the virus.[2] His symptoms included mild aching in muscles and joints, moderate headache and photophobia. The Bhanja virus is a member of the family *Bunyaviridae* and Bhanja virus serocomplex.[1]

Keywords: *Bhanja virus, Public health, Tick*

INTRODUCTION

Bhanja virus has only rarely been isolated from vertebrates, though antibodies have been detected frequently in a wide range of mammals, in several species of birds (*Passeriformes, Galliformes*) and even reptiles. Bhanja virus has been isolated in 15 countries of Asia, Africa and Europe, and antibodies against it have been detected in 15 additional countries. Vector range includes ticks of the family *Ixodidae*: 13 species of 6 genera (*Haemaphysalis, Dermacentor, Hyalomma, Amblyomma, Rhipicephalus* and *Boophilus*) yielded the virus. Natural foci of the Bhanja virus infections are associated with the pastures of domestic ruminants infested by ticks in the regions of tropical, subtropical and partly temperate climatic zones.[3]

Transmission

The Bhanja virus is transmitted through ticks and is isolated from the ticks of the genera *Dermacentor* a nd *Haemaphysalis*. Transmission occurs through ticks belonging to the family *Ixodidae*. Bhanja virus is not known to be transmitted between humans.[1]

Hosts affected

The Bhanja virus affects commonly sheep, goats, cattle, African hedgehogs and African ground squirrels. It also affects children and adult humans.[4]

Clinical signs and symptoms

The symptoms of Bhanja virus infection include p hotophobia,vomiting, meningoencephalitis, and partial paralysis.[1]

Prevention and control

Prevention can be done by controlling tick population and by avoidance of excessive foliage and bushy areas.

CONCLUSION

Bhanja virus (BHAV) and its antigenically close relatives namely, Forecariah (FORV), Kismayo (KISV) and Palma (PALV) viruses are thought to be members of the family *Bunyaviridae*; but they have not been assigned to a genus or species. Despite their broad geographical distribution and reports that BHAV causes sporadic cases of febrile illness and encephalitis in humans, the public health importance of the Bhanja serogroup viruses remains unclear, due in part to the lack of sequence and biochemical information for the virus proteins.[5]

Ethical Clearance: Taken from Arawali Veterinary College committee.

Source of Funding: None declared

Conflict of Interest: Nil/ None declared

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DOI Number: 10.5958/2395-1796.2016.00027.2

Pyuria in Relation to Urine Culture and the Common Uropathogens with Respect to Age and Sex of Patients

Gitali Bhagawati[1], Sarika Jain[2], K K Taneja[3]

[1]Consultant Microbiologist, Ganesh Dignostic and Imaging Centre, Presently working in Yashoda Superspeciality Hospital, Kaushambi, Ghaziabad, Uttar Pradesh, [2]Consultant Pathologist, [3]Consultant Biochemist, Ganesh Dignostic and Imaging Centre, Ghaziabad Uttar Pradesh

ABSTRACT

Background: Urinary tract infection (UTI) is one of the most common bacterial infection and urine samples account for a significant part of workload in clinical laboratories. There are different opinions regarding whether urinalysis or urine culture should be a routine. However, the cornerstone is based on the concept of significant bacteriuria and it is still considered as the gold standard in diagnosis of UTI. Many microorganisms can infect the urinary tract; however, *E. coli* causes approximately 80% of acute infections in patients.

Aims: The objectives of the study were to evaluate the reliability of urinary microscopy with semi-quantitative culture and to isolate and identify the common uropathogens with respect to age group of patients.

Settings and Design: This prospective and descriptive type of study was carried out in a small size laboratory in Delhi within a period of six months, from January 2015 to July 2015.

Material and method: A total of 502 non-duplicate, mid-stream urine samples were received from patients of all age groups from patients having signs and symptoms suggestive of UTI. Microscopic elements were evaluated from uncentrifused sample. For semiquantitative culture of urine, standard loop method was used on Cysteine Lactose Electrolyte Deficient (CLED) agar and incubated aerobically at 37°C for 18-24hrs.

Results: Out of 502 non-duplicate samples, pyuria (> 5 cells/hpf) was found in 84 (16.73%) samples. Out of these 84 samples, 54(64.3%) had significant bacteriuria while 25 (30%) showed no growth in culture. Specificity and negative predictive value of pyuria in relation to culture was found to be 93% and 86% respectively. The most common isolate was *Escherichia coli* 84 (72%), followed by *Klebsiella spp.* 12(10%).

Conclusions: Pyuria along with significant bacteriuria is consistent for the diagnosis of UTI. However, it is always better to correlate culture with the urine microscopy.

Keyword*: Urinary tract infection (UTI), significant bacteriuria, mid-stream urine (MSU), Escherichia coli*

Corresponding author:
Gitali Bhagawati
Consultant Microbiologist, Ganesh Dignostic and Imaging Centre (Presently working in Yashoda Superspeciality Hospital, Kaushambi), Ghaziabad, PIN:201010, PH. 9899877146,
Email- gitalibhagawati32@gmail.com

INTRODUCTION

Urinary tract infection (UTI) is a term applicable to a great variety of clinical conditions, from asymptomatic bacteriuria to severe infections, as for example, sepsis. [1] UTI is one of the most common bacterial infections and account for a significant part of the workload in clinical microbiology laboratories. [2]

There are different opinions regarding whether urinalysis or urine culture should be a routine. A complete consensus whether culture should be performed only for specific indications has yet not concluded. [3] The advantages to urine microscopy are that leukocytes, leukocyte casts, and other cellular elements are observed directly. One disadvantage to urine microscopy is that leukocytes deteriorate quickly in urine that is not fresh or that has not been adequately preserved. [2] However, the cornerstone of most of the modern studies is based on the concept of significant bacteriuria and it is still considered as the gold standard in diagnosis of UTI. [4]

Many microorganisms can infect the urinary tract, but by far the most common agents are the gram negative bacilli. *E. coli* causes approximately 80% of acute infections in patients without catheters, urologic abnormalities, or calculi. [5, 6, 7] Other gram negative rods that account for smaller proportion for uncomplicated UTIs are *Proteus sp., Klebsiella sp., Enterobacter sp.* etc. Enterococci occasionally cause acute uncomplicated cystitis in women. More commonly, Enterococci and *Staphylococcus aureus* cause infections in patients with renal stones or with previous instrumentation or surgery. [5]

The objectives of the study were to evaluate the reliability of urinary microscopy with semi-quantitative culture and to isolate and identify the common uropathogens with respect to age group of patients.

MATERIALS AND METHOD

This prospective and descriptive type of study was carried out in a small size laboratory in Delhi within a period of seven months, from January 2015 to July 2015. A total of 502 non-duplicate urine samples were received from patients of all age groups. Mid stream urine samples were collected under proper instruction as part of the routine clinical management of patients having signs and symptoms suggestive of UTI.

The samples were collected in sterile containers and processed immediately after receipt. When delay of more than 2 hours is unavoidable, specimens were stored in a refrigerator at 4° C. [8]

All the 502 specimens were evaluated by microscopy. Microscopic elements evaluated were WBCs, RBCs, epithelial cells, casts, crystals, bacteria and yeast cells from uncentrifused sample. Urine is mixed carefully and then 0.05 ml of urine is placed onto the middle of a microscope slide. A cover slip of 22x22 mm in dimension was applied over it. As the area of high power field (HPF) is 0.15 mm^2, the volume of urine observed in an HPF will be about 0.015 mm^3. Under these conditions the finding of 1 leucocyte per 7 HPF corresponds with 10^4 leucocytes per ml and the finding of more than this indicates significant pyuria. [8]

For semiquantitative culture of urine, standard loop method was used.

With standard calibrated loop, 1µl (0.001ml) of urine was inoculated on Cysteine Lactose Electrolyte Deficient (CLED) agar and incubated aerobically at 37°C for 18-24hrs. Inoculation from well-mixed specimen was performed first, followed by other procedures. The growth of 100 colonies by this method was considered as significant bacteriuria. Such urine samples were further processed for identification of the causative organisms. Contaminants were considered of diverse species and CFU of less than 10^4 organisms/ml. Mixed growth of two or more organisms especially with gram positive bacilli, *Lactobacilli, Gardnerella vaginalis*, diphtherias were also considered to be urinary contamination. Samples of patients showing growth of contaminants were advised for repeat urine culture with proper instructions of collection of MSU sample. No growth after 48 hours of incubation was considered as sterile under aerobic condition at 37°C. [8, 9]

Identification of uropathogens: Identification of the isolated bacterial pathogens was done on the basis of gram staining, colony characteristics, motility testing by hanging drop preparation and biochemical characters. [Catalase test, oxidase test, TSI agar, indole reaction, citrate, urease, Mannitol motility agar, Coagulase test, Phenylalanine deaminase test etc.] [8, 9]

FINDINGS

A total 502 non-duplicate, mid-stream urine samples were processed over a period of seven months, from January to July 2015.

Table 1 shows pyuria (> 5 cells/hpf) in 84 (16.73%) samples while bacteriuria in 73 (14.54%) samples.

Out of total 502 samples, 272 (54.18%) samples showed 0-2 pus cells/hpf; out of which 202 (74.26%) samples showed no growth in culture while 34 (12.5%)

showed significant bacteriuria. [Fig1]

Number of samples showing pus cells >5 /hpf was 84 (16.73%); out of these 84 samples, 54(64.3%) had significant bacteriuria while 25 (30%) showed no growth in culture. Out of these 84 samples, 43 showing pus cells 6-10/hpf had significant bacteriuria in 25 (58.14%) samples while 41 samples showing pus cells >10/hpf showed the same in 29 (70.73%) samples. [Fig 1]

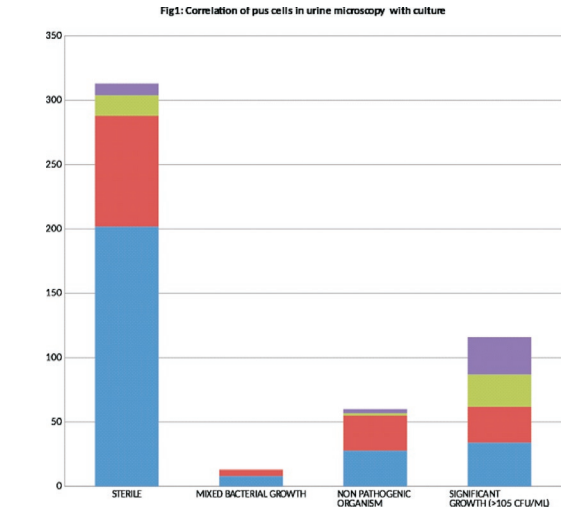
Specificity and negative predictive value of pyuria in relation to culture was found to be 93% and 86% respectively. However, sensitivity and positive predictive value was 49% and 86% respectively. [Table 2]

Out of total 116 samples showing significant bacteriuria, the most common isolate was *Escherichia coli* 84 (72%), followed by *Klebsiella spp.* 12(10%). Among the Gram positive cocci, 3 (2.58%) *Staphylococcus aureus* and 2 (1.7%) *Enterococcus spp.* had been isolated. (Fig2). Among the fungal isolates, only 2 (1.7%) *Candida spp.* had been isolated. [Fig 2]

Table1 shows the age and sex distribution of 502 patients with signs and symptoms of urinary tract infection. Overall male and female ratio was found to be almost 1:1. However, in the reproductive age group (15 to 44 years), male and female ratio was found to be 1:2.7 which is in contrast in geriatric age group (above 65 years) in which male and female ratio was found to 2.8:1.

When we see the prevalence of significant bacteriuria irrespective of age, overall male and female ratio was 1:1. However, females predominated over males in reproductive age group, 15-44 years, (male: female=1: 6.25). On the contrary, males predominated over females (male: female=2.36: 1) in geriatric age group, (above 65 years). [Table4]

The prevalence of *E. coli* is found to be 4.76% in the age group 0-13 years of age followed by 39% in patients older than 65 years as compared to the age group 15-64 years (56%). Some of the bacteria like *Klebsiella spp*. (2/4), *Pseudomonas spp.* (2/4) and *Enterococcus spp*. (2/2) have been mostly isolated from patients of older age group. [Table4]



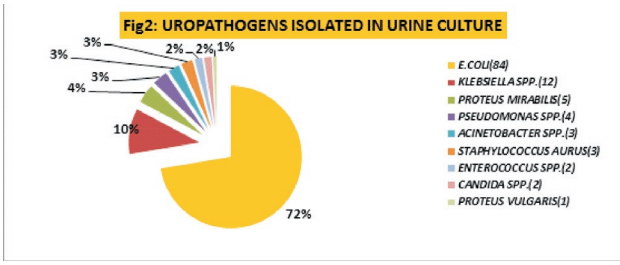


Table 1: Result of microscopic examination in 502 urinary samples

Haematuria(>5/hpf)	11(2.2%)
Bacteriuria(>1/hpf)	73(14.51%)
Crystal /hpf	
Calcium oxalate	19(3.78%)
Cast/hpf	
Granular cast	4(0.8%)
Epithelial cells/hpf	
0-2	322(64.14%)
3 to 10	174(34.66%)
>10	6(1.2%)
Pus cells/hpf	
0-2	272(54.18%)
3 to 5	146(29%)
6 to 10	43(8.56%)
>10	41(8.17%)

Table 2: Sensitivity and Specificity of pyuria (>5/hpf) with culture.

Sensitivity	49%
Specificity	93%
Positive predictive value	68%
Negative predictive value	86%

Table 3: Age and sex distribution of 502 urine samples

Age group	0-14 YEARS	15-44 YEARS	45 to 64 YEARS	>65YEARS
Male (249)	13	48	76	112
Female(253)	25	128	60	40
Total (502)	38	176	136	152

Table 4: Distribution of isolates according to age and sex

AGE AND SEX DISTRIBUTION → / ISOLATES ▼	0-14 YEARS		15-44 YEARS		45 to 64 YEARS		>65YEARS		TOTAL
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
E.COLI(84)	2	2	2	21	13	11	28	5	84
KLEBSIELLA SPP.(12)	0	0	1	0	1	2	3	5	12
PROTEUS MIRABILIS(5)	0	0	1	1	0	2	0	1	5
PSEUDOMONAS SPP. (4)	1	0	0	0	0	1	1	1	4
ACINETOBACTER SPP. (3)	1	0	0	0	1	0	0	1	3
STAPHYLOCOCCUS AURUS(3)	0	0	0	1	1	1	0	0	3
ENTEROCOCCUS SPP. (2)	0	0	0	0	0	0	1	1	2
CANDIDA SPP.(2)	0	0	0	1	1	0	0	0	2
PROTEUS VULGARIS(1)	0	0	0	1	0	0	0	0	1
TOTAL	4	2	4	25	17	17	33	14	116

DISCUSSION

Urine culture is one of the most frequently ordered laboratory procedure. Usually the routine urine microscopy is done in a pathology laboratory while the culture is put up in microbiology laboratory. In many cases, culture reporting is done without knowing the microscopic finding. On contrary, in many other cases only routine microscopy is being done without any request for culture. The aim of this study is to know the relevance of urine microscopy with culture and to know whether culture should be ordered or not in all cases along with routine microscopy among patients having signs and symptoms of UTI. Another attempt is to increase the prediction of causative uropathogens through the use of demographic profile of the patient.

Definitive diagnosis of UTI is based on isolation of significant bacteriuria in culture which takes at least 24 hours for growth. Routine measurement of pyuria is not consistently recommended for management of patients, and it may be appropriate to simply treat a patient with classic UTI symptoms without any diagnostic testing. [10]

The current diagnostic pathway used in the clinical setting may fail to detect pathogens due to recent antibiotic usage (false negative) and detect bacterial colonization or urine sample contamination from inadequate collection (false positive). [11] The presence of bacteria in the urine may indicate one of the 3 conditions: specimen contamination, UTI and asymptomatic bacteriuria (ASBU). When evaluating the

clinical significance of urine culture these 3 conditions must be considered with history and examination findings coupled with urine findings. High numbers of squamous cells on the urinalysis (>20/hpf) suggests contamination and results of the culture should generally be ignored. [12] Our finding shows, out of total 502 samples, 272 (54.18%) showed 0-2 pus cells/hpf; out of which 202 (74.26%) samples showed no growth and 34 (12.5%) had significant bacteriuria. [Fig1] In our finding, out of the 34 samples showing growth despite pus cells 0-2/hpf, four samples from female patients had squamous epithelial cells >20/hpf. Epithelial cells in specimens from female patients usually indicate vaginal contamination. [12] For the rest 30 samples showing significant bacteriuria, despite pus cell 0-2/hpf and epithelial cell 0-2/hpf, Dip-stick leucocyte esterase test (LET) and nitrite test (NT) (Siemens Healthcare Diagnostics Reagent Strips) were found to be positive along with clinical signs and symptoms.

In our study, out of total 502 samples, 84 (16.73%) samples showed pus cells >5 /hpf; out of these 84 samples, 54(64.3%) had significant bacteriuria while 25 (30%) showed no growth. The reason of no growth may be because of ongoing antibiotic treatment or due to other causes of sterile pyuria e.g. renal tuberculosis. Our finding corresponds to the finding of R Parveen *et al* [13] and Richard A *et al*[14] who found growth in 31.67% and 73% respectively along with pyuria.

For the presence of UTI, Abrahamian FM *et al*.[15] found 86% sensitivity with pyuria level greater than 5 WBCs/high-power field (hpf) which is dissimilar to our finding i.e. 49%; however, specificity of pyuria in his study (79%) corresponded to our finding i.e., 93%.

Out of total 116 isolates, the predominating organism was *Escherichia coli* 84 (72%), followed by *Klebsiella spp.* 12(10%). This is similar to the finding of R. Parveen *et al*[13] (*Esch.coli* 64.49% followed by *Klebsiella spp.* 11.21%), Manjula N. G. *et al* [16] (*E. coli* 56.79%, followed by *Klebsiella spp.* 19.9%) and Enrico Magliano *et al*[17] (*E. coli* 67.6%, followed by *Klebsiella spp.* 8.8%). Our finding is in contrast to the finding of Otajevwo, F. D[18] who found *Alcaligenes* spp 19.4% as the most common uropathogen followed by *Klebsiella aerogenes* 16.7% and *Escherichia coli* 13.9%.

The prevalence of E. coli is found to be 4.76% in the age group 0-13 years of age followed by 39% in patients older than 65 years as compared to the age group 15-64 years (56%). Our finding corresponds to the finding of Enrico Magliano *et al*[17] who found less prevalence of Escherichia coli in the youngest and oldest male subjects (51.3% and 52.2%, resp.) and more frequent in female patients aged 15 years or older (approximately 71%).

CONCLUSIONS

Pyuria along with significant bacteriuria is consistent for the diagnosis of UTI. However, it is always better to correlate culture with the urine microscopy. The relatively high prevalence of UTI among female subjects of reproductive age group (15-44 years) may be due to shorter urethra (approximately 4cm in females; 20 cm in males), unsafe sexual practices, unhygienic condition and/or underlying immune related problems. Similarly, high prevalence of UTI among male patients in older age goup (>65 years) may be because of Benign Prostatic Hyperplasia (BPH), catheterization, immunocompromised status like diabetes, prostate cancer etc. It is recommended that awareness on UTI, factors leading to UTI, prevention and treatment should be increased to reduce the high rate occurrence.

Conflict of Interest: None

Source of Support: None

Ethical Clearance: Not necessary

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14. Word limit 2500-3000 words, MSWORD Format, single file

15. Please. quote references in text by superscripting

DOI Number: 10.5958/2395-1796.2016.00028.4

A Study of Microbial Flora on Mobile Phones with Spread of Nosocomial Infections in Neonatal Intensive Care Unit

Gagan Agrawal[1], Sartaj Ahmad[2], Arvind Kumar Shukla[2], Amit Yadav[4]

[1]Associate Professor (Pediatrics), Rama Medical College Ghaziabad, [2]Assistant Professor (Medical Sociology), [3]Assistant Professor (Biostatistics), Department of Community Medicine, Subharti Medical College, Meerut UP India, [4] Senior Resident (Pediatrics), Rama Medical College Ghaziabad

ABSTRACT

Hundreds of millions of patients including physicians, nurses and health care workers are affected by Hospital-acquired infection (HAI) worldwide each year, leading to significant patient mortality rates and financial losses for health systems. The use of personal accessories such as cell phones, writing pens and their association with nosocomial infections in the hospitals is a matter of concern. The most common isolated gram-positive bacteria were Coagulase-Negative Staphylococci and gram-negative ones are Pseudomonas species. Cell phones and stationery could be the source of bacterial infection transmission in the hospitals. Therefore, the infection control precautions by medical personnel such as regular hand hygiene before the devices use, their decontamination, and developing guidelines in this respect could be very helpful.

Keywords: *Mobile phones, Hygiene Contamination, Colonization, Hand hygiene*

INTRODUCTION

Nosocomial infections are new localized or systemic infections that develop in patients receiving medical care in a hospital or other healthcare facilities. The infections are not incubating or present during a patient's admission into the healthcare facility and are identified at least forty-eight to seventy-two hours following the patient's admission. Hospital-acquired infection or healthcare-associated infection (HAI), or nosocomial infection acquired in healthcare settings are the most frequent adverse events in healthcare delivery worldwide. Hospital Acquired Infection also includes occupational infections among healthcare staff. Hundreds of millions of patients are affected by HAI worldwide each year, leading to significant patient mortality rates and financial losses for health systems. [1]

Healthcare-associated infections (HAIs) are a major challenge to the healthcare system and are associated with significant mortality, morbidity, and high economic burden. It is estimated that of every 100 hospitalized patients at any given time, seven in developed and ten in developing countries will acquire at least one HAI.[2] HAIs are becoming increasingly common due to the expansion of the population at risk, which results from aging population, increase of chemotherapeutic options for cancer treatment, increase in the number of patients with transplants, in addition to complex and invasive surgical and medical care procedures that are increasingly being provided in acute and non-acute-care settings. [3]

Healthcare workers should be familiar with practices to prevent the occurrence and spread of Nosocomial infections. Health care professionals are constantly exposed to microorganisms. Many of which can cause serious or even lethal infections. [4] Nurses in particular are often exposed to various infections during the course of carrying out their nursing activities and due to accidental contamination during their practical occupational exposure.[5]. Patients in intensive care units (ICUs) are particularly susceptible to HAIs because of their poor health status in addition to the use of invasive equipment like catheters and cannulae. Similarly, infants in neonatal care units (NCUs) have a higher risk of HAIs because of their immature immune systems, their skin

Corresponding author:
Dr. Gagan Agrawal
Telephone: 9997000575
Rama Medical College, Ghaziabad, UP

does not provide a strong barrier against organisms in the environment and a large number of these infants are premature and often require invasive procedures to sustain their life such as mechanical ventilation and total parenteral nutrition. [6]

Contaminated hands of healthcare providers play a major role in spreading infections in healthcare settings. Hand hygiene is one of the most important preventive interventions against the spread of infections in healthcare settings.[7] Objects with frequent hand contact can serve as reservoirs from which infections can spread to the hands of healthcare providers and then to patients. Examples of these objects include medical equipment like stethoscopes and other accessories such as mobile phones. [8]

MICROBIAL FLORA ON MOBILE PHONES

1. Mobile phones have become an indispensable accessory of today's society, and they are being used extensively in hospital settings. They are commonly handled irrespective of the cleanliness of hands and rarely disinfected, thus may harbor pathogenic bacteria. [9]

The global system for mobile telecommunication was established in 1982 in Europe with a view of providing an improved communications network. Nowadays, mobile phones have become one of the most indispensable accessories of professional and social life. This device is used routinely in every location in hospitals by patients, visitors and HCWs, as a means of communication and a source of information. Mobile phones were not allowed in ICU environments until a few years ago due to interference with medical equipment. However, this rule is no longer in place and cell phones can be used away from medical devices in ICUs. Environmental organisms in the hospitals may contaminate objects, devices, and materials which subsequently contact susceptible body sites of the patients. Many of personal instruments used daily by medical health care workers (HCW), such as stethoscope, cell phones and writing pens in the hospitals can act as carriers of the infection. [10]

The global system for mobile Some epidemiological studies have implicated environmental surface in the transmission of the organisms. [11]

Increasing functionality and affordable prices for cell phones have resulted in a global reliance on staying connected everywhere. These factors and the heat generated by cell phones contribute to bacterial growth on the device at alarming rates. Given daily contact of cell phones with the face, hands, and different surfaces in the hospitals, the dire health risks of using them become obvious. In spite of their widespread use in hospitals and ICUs, there are no cleaning guidelines available that meet hospital standards. Unlike our hands, which can easily sterilized using hand sanitizers available readily across all hospitals and medical facilities, the mobile phones are burdensome to clean and even we rarely make an effort to sanitize them. Later, some similarities were reported between the isolated micro-organisms from cell phones and HCW s hands. [12]

Such findings raised the question if the personal instruments of medical HCWs could be source of nosocomial infections and act as a transmission route from patient to patient . [13]

The debate on the restriction of mobile phone use in clinical settings due to electromagnetic interference that may affect medical equipment has reached an end; but the potential role of mobile phones in transmitting infection remains under intense debate. Several studies have described the contamination of clinicians' mobile phones in healthcare settings, and reported a level of contamination and type of bacteria that depend on the clinical and geographical setting. [14]

This is higher than that reported from Saudi Arabia, where 43.6 % of clinicians' mobile phones in wards, emergency rooms, out-patient departments, and operating rooms were contaminated [15]; and in India, where 42 % of clinicians' mobile phones in different wards were contaminated. [16]

On the other hand, the prevalence of contamination of clinicians' mobile phones in our setting was lower than that reported from other studies in Turkey, where 94.5 % of clinicians' mobile phones in operating rooms and ICUs were contaminated[17] and 97.8 % of clinicians' mobile phones in all departments were contaminated. [18] Higher estimates of the contamination of clinicians' mobile phones have also been reported from UK (96.2 % of mobile phones of all physicians)[19], Austria (95 % of mobile phones of anesthetists)[20], Saudi Arabia (96.5 % of mobile phones of clinicians in ICU)[21] and Nigeria (94.6 % of mobile phones of health care workers

in a hospital) . [22]

While the direct comparison between the findings of different studies is hindered by various factors, including targeting different hospital wards and different laboratory procedures, the contamination rate of clinicians' mobile phones in Kuwait seems to be within the range that was reported in other literature. Microbiological contamination of mobile phones of clinicians in intensive care units. Some researchers reported up to 99% of HCWs cell phones in developing countries demonstrated evidence of bacterial contamination with 64.8% revealing bacterial pathogens.[23] The most common isolated organisms were coagulase-negative staphylococci (CoNS) and Micrococcus; while between 9 % and 25 % of mobile phones were contaminated by other pathogenic bacteria known to cause HAIs, including methicillin-sensitive and methicillin-resistant Staphylococcus aureus (MSSA & MRSA), Acinetobacter species, and Pseudomonas sp ecies.[24] The most common isolated organisms were also CoNS but 8 % to 14 % of the clinicians' mobile phones harbored other organisms known to cause HAIs, including Staphylococcus aureus, Enterococcus, and Gram-negative bacilli. [25] In addition, studies in healthcare settings in developing countries, including India, Nigeria, and Turkey, demonstrated that 42 % to 97 % of clinicians' mobile phones are contaminated. CoNS were the most common isolated organisms; while other microorganisms, such as Escherichia oli, Acineto bacter species, Pseudomonas species, and MRSA, were isolated from 8 % to 31 % of the clinicians' mobile phones.[26]Acinetobacterspecies have been frequently identified as a cause of widespread hospital outbreaks, including those in ICUs.[27] Gram-negative bacteria were identified in 15 (7.0 %) mobile phones, of which six (2.8 %) were Acinetobacter species; but none were resistant to meropenems. The rate of contamination wit h Acinetobacter species is consistent with other studies, which reported that between 1 % and 12 % of clinicians' mobile phones were contaminated by Acinetobacter sp ecies.[28]

The Center for Disease Control and Prevention (CDC) in 1996, introduced a revised version of a preventive concept against nosocomial infections that originated in the 1960s. Standard precautions have been recognized as an efficient and effective means to prevent and control health care-associated infections in patients and health workers.[29].

Standard Precautions included hand hygiene, use of personal protective equipment (e.g., gloves, gowns, masks), safe injection practices, safe handling of potentially contaminated equipments or surfaces in the patient environment, and respiratory hygiene/cough etiquette.[30]. Effective hand hygiene is essential for reducing healthcare associated infections. However, compliance of healthcare workers to hand hygiene guidelines are reportedly poor. It is important therefore to instill adequate knowledge and good attitudes and practices at the time of primary training of the healthcare workers. A study done by Snow et al. (2006) reported that the hand hygiene practices of mentors influence the hand hygiene practices of students.[31]

CONCLUSION

The prevalence of mobile phone contamination is high in ICUs, PICUs, and NCUs although some of the isolated organisms can be considered non-pathogenic; various reports described their potential harm particularly among patients in ICU and NCU settings. Isolation of MRSA and Gram-negative bacteria from mobile phones of clinicians treating patients in high-risk healthcare settings is of a major concern, and calls for efforts to consider guidelines for mobile phone disinfection. All cell phones demonstrated bacterial contamination. The use of mobile phones in ICU may have serious hygienic consequences . Some mobile phones harbored extremely harmful bacteria, such as MRSA or Gram-negative organisms. Bacterial contamination of cell phones may serve as vectors for nosocomial infection in the neonatal intensive care unit. Bacteria transmitted from cell phone to hands may not be eliminated using anti-microbial gel. Development of hand hygiene and cell phone cleaning guidelines are needed regarding bedside cell phone use. Only minority of clinicians have ever disinfected their mobile phones, which is not an optimal practice and highlights the need to increase the awareness about mobile phones disinfection among clinicians, given that banning mobile phones in ICU settings is losing momentum.It is needed to work at various levels to minimize the risk of mobile phones as vectors for pathogen transmission. Mul-tidisciplinary hospital infection control teams should develop active preventive polices and strategies to reduce cross-infection caused by mobile phones in intensive care units. Finally, further research is needed in order to provide evidence that better mobile phone hygiene will lead to a reduction in HAIs.

Acknowledgement: None

Source of Support: Nil

Conflict of Interest: None

Ethical Clearance: Not Required

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DOI Number: 10.5958/2395-1796.2016.00029.6

Medical Research Misconduct : A Review Study on Duplicate Publications

Arvind Kumar Shukla[1] Sartaj Ahmad[2]

[1]Assistant Professor (Biostatistics), [2]Assistant Professor (Medical Sociology), Swami Vivekananda Subharti University, Meerut, UP, India

ABSTRACT

Fraud and Misconduct broadly encompasses plagiarism, fabrication, falsification, duplication, salami, gift and ghost authorship. In 2010 in Singapore a second World Conference on Research Integrity attended by more than 50 countries resolved the definition of research conduct as "Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods."

Keywords: *Duplicate publication, Fraud , Ethics, Misconduct*

INTRODUCTION

Generally, articles are published by medical professionals with an intention to reflect a trend in diseases or conditions or advocate the efficacy of a novel intervention over a previous one helping their peers in advancing their clinical decisions. Practicing of publication with this intent should be encouraged but not when it transgresses the boundary of veracity and when it does, it culminates either into Research Misconduct or Fraud. The competitive race for publication persists as it is an important determinant for job interviews and promotions, enforcing them to comply with the maxim " publish or perish." This race may become a public health concern soon if no meaures taken to encourage honest research and take emphasis off of publications. [1] Research misconduct or fraud are terms used interchangeably but there is a distinction between the two (Gupta 2013). Research fraud is an intentional deception done for personal gain or to damage another individual whereas misconduct may not be an intentional action rather an act of poor judgment. It also includes failure to follow established protocols, if this failure results in unreasonable risk or harm to humans. [2]

Collectively, Fraud and Misconduct broadly encompasses plagiarism, fabrication, falsification, duplication, salami, and gift and ghost authorship. These aforementioned fraudulent practices are not only prevalent in developing countries but also in developed nations. [3] An online report with the headline " Indian doctors hit by plagiarism row as 53% admit they are guilty of it" highlights that despite Indian doctors exceling the world over research but when readers may come across their articles few may realize that some of them have plagiarised, fabricated or falsified data in their manuscript. [4]

An article in Hindustan times highlighted professor of AIIMs, New Delhi had to retract the article titled "Genetic Diversity in Hepatitis C Virus" which was published in Medical Virology in 2004 on charges of Duplication. Further it had mentioned that in October 2007, six doctors were on trial again on charges of duplication. [5]

It is noteworthy that post graduates are the new public health physicians, so we included them in this study. Further it is essential for academicians to upgrade their knowledge about research methodology. Data collection, study conduct and result reporting are

Corresponding author:
Arvind Kumar Shukla
Assistant Professor (Biostatistics),
Swami Vivekananda Subharti University,
Meerut UP India

crucial elements of medical journalism. It is important that researchers are familiar with the research ethics and guidelines. Hence, the study was undertaken to determine knowledge and attitudes toward research misconduct among post graduate students and faculty members. Research misconduct is being defined as the "Behavior by a researcher, intentional or unintentional that do not meet or fulfill the scientific and ethical standards". [6]

Duplicate publication

A redundant or duplicate publication is a publication of a scientific paper that overlaps substantially with one already published. [7]

Research Misconduct

The work was ignored by the academicians and researchers but it illustrates the need of national and international mechanisms for investigating the research misconduct. The irresponsible research practices include publishing research findings more than once in pieces, not declaring the conflicts of interest, selective reporting of data by excluding outlying data, including an author in paper who has not contributed and many other things. It is generally agreeable that research misconduct includes fabrication i.e., cooking up results, falsification i.e., manipulating results and processes and plagiarism i.e., stealing work of others. It is also evident that medical research record may be more damaged by "irresponsible research practices or practices of questionable nature" than by the fabrication, falsification and plagiarism issues. [8]

As research is a global activity so research misconduct is also a global problem. Wherever there is human activity there will be misconduct. There is often suspicion about the quality and results of research work done by some researchers. However, there is a lack of reliable data on the prevalence and incidence as well extent and distribution of research misconduct in medical field. Most of the countries have no formal regulatory programs available to monitor the research activities or research projects. [9]

Reliable data is not available about incidence/prevalence of research misconduct in different countries. Few systematic review and meta-analysis studies have tried to find out the problems of the research misconduct. In 2010 in Singapore a second World Conference on Research Integrity attended by more than 50 countries resolved the definition of research conduct as "Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods." The exact wordings of adopted conduct are quoted here highlighting the importance of good ethical and standardized practices during research in medical field. [10]

As per "Guidelines on Good Publication Practice," the Committee on Publication Ethics (COPE) defined that a redundant publication occurs when two or more papers, without full cross references, share the same hypothesis, data, discussion points or conclusions. [11]

The most important reason may be deliberate or intentional duplication of the research article in order to increase the number of publications that is unfortunately a basic requirement for career progression in medical profession. Similar apprehensions are also expressed by Dr. AJ Singh in his article titled Plagiarism. [12]

Tramer *et al*. concluded in their study that inclusion of duplicated data in meta-analysis led to a 23% overestimation of Ondansetron's antiemetic efficacy. [13]

Problem of Research Misconduct

Only a handful of developed countries have responded to research misconduct issues by developing programs for prevention, investigation, punishment, and correction. The United States of America, Germany and the Scandinavian countries have formal programs to deal with for research misconduct issues but still country like United Kingdom is not being able to respond in adequate manner. [14]

According to one study 2% of scientists had themselves fabricated or falsified and 33% are found to be indulged in irresponsible research practices. Surprisingly, when they were inquired about other researchers′ misconduct it was interestingly answered that 14% of researchers fabricated, falsified the data and three quarters researchers did act for irresponsible research practices. [15]

A public interest litigation in Supreme court of India has highlighted the issue of illegal and unethical clinical trials resulting in deaths of 1727 between 2007 and 2010 in about 3138 clinical trials that took place in India. It also highlighted various irregularities in drug trials as the principal investigator (PI) of clinical trial was also the ethical committee member against the norms. There is no role played by ethics committees and no compensation offered to patients in case of development of side or adverse effects of the trials. The editor of the BMJ was cautioned about the work by several researchers. The research misconduct was never investigated as author was self-employed and no organization came forward to investigate the matter. So British Medical Journal and Lancet in 2005 published "expressions of concern" about the studies in their journals. [16]

Similarly retractions data from different countries provides ratio of data retracted for fraud to the papers published for some selected studies shows similarity patterns between developed and developing countries indicating that medical research misconduct is a serious global problem. [17]

An interesting article belonging to South America discussed plagiarism from a different perspective. A study found that only ten research papers to be of research misconduct out of more than 190,700 papers search from 594 journals in 2008. [18]

However, the focus group discussions with researchers revealed that copying and pasting "text" was not taken as a very serious matter than copying "data" as English language was a communication barrier for publication in English journals. It was never thought to be against research integrity. Similarly a Chinese journal also found 31% of papers submitted was plagiarized but much of the unoriginal texts was referenced or standard definitions or others indicating not be plagiarized. [19]

In 2009, in China the authors claimed in a randomized controlled trial that that transarterial chemo embolization together with radiofrequency ablation therapy was better than either treatment alone in patients with large hepatocellular carcinoma. This article was retracted from JAMA and readers raised serious concerns about the study. The investigations by the employer disclosed that the study neither had ethical committee approval and nor a well conducted randomized trial and that "conclusions drawn from the study are also not valid." [20]

China is the one of first countries to take the research misconduct very seriously and investigated all cases of alleged misconduct. In 2005, the National Science Foundation of China investigated 542 allegations of research misconduct. Evidence of misconduct was found in 60 cases. The main issues were data falsification (40%), plagiarism (34%), and data fabrication or theft (34%). [21]

Thereafter, the Ministry of Science and Technology of China took action and established the Office of Scientific Research Integrity Construction. This body is empowered to investigate cases of research of misconduct and take preventive and corrective actions. A survey in non-communicable disease research centers in developing countries viz. China, Peru, India, South Africa, Nigeria, Costa Rica, Guatemala, Bangladesh and Tunisia, about research misconduct has shown little response to research misconduct. Only few countries like China, South Africa has both national and institutional systems to deal with research misconduct. [22]

Generally it is now felt among the academicians that there should be a national systems to deal with research integrity and misconduct. Although, now many countries have ethics committee systems for approval of research proposals, but they are not very active. Their constitution is also very defective and researchers often influence the acceptance and lack technical expertise to deal with research misconduct. However, the countries also require well-managed health research systems to prevent, investigate, punish and correct any allegation of research misconduct and keep a strict vigilance on research activities. The main responsibility not lie only with research departments of Universities, but even big research institutes lack the technical expertise how to deal with research misconduct. All academic institutions must have teaching and training sessions for research methodology/ethical issues to update the students and staff at regular periodical intervals. Curriculum of undergraduates and postgraduates must contain the topics of research integrity and ethical aspects. Often the research institutes have profound conflicts of interest even if one researcher is accused of research misconduct.

Therefore, a body at national level may help in providing research leadership and manage the conflicts

of interest. They should be delegated powers to deal with any research misconduct. Awareness to various aspects of research misconduct and integrity is also required at different levels as most research institutes have a denial tendency. There should be exposure of research misconduct cases to entire research world. The beginning stage should be discussion and recognition of the problem of research integrity and misconduct. There cannot be a single system to deal with all types of research misconduct and every country has to develop its own system. The national and institutional systems can ensure that the ethical and scientific standards are being adhered by the researchers during research.

DISCUSSION

Our study finding revealed equal number of both faculty members and postgraduate students have complete knowledge of research misconduct 9(50.9%), knew someone who had practice research misconduct 8(44.4%) whereas malpractice was conducted by 4 (22.2%) faculty members and 5(27.8%) postgraduate students. A similar multi-site study in India reported that the most common observed research misconduct among faculty members to be gift authorship (65%) followed by falsification (56%), plagiarism (53%) and ghost authorship (33.5%). It has been stated that research misconduct will always occur; however, it is important to have robust systems to deal with allegations of fraud. Emphasis has to be on accepting the challenge in creating a sustainable research environment that fulfils science true purpose – inquiry to deliver progress for society and the planet.[23] Further, measures are required to encourage true research otherwise publication may become a public health concern and monitoring predatory journals which are considered to be "reservoirs of author misconduct" including plagiarism, falsified data and image manipulation.[24]

This topic warrants a larger study to be conducted to gain a representative sample and survey potential participants from other medical (and allied sciences) institute as the authors speculate that this is a widespread problem. In the light of discussion, it is evident that the problem of duplicate publications is an issue that needs immediate attention on the part of both editors and readers. The actions to be taken in such cases range from retracting the article to issuing a ban on further publications of such authors. The Guidelines provide a list of Sanctions that may be applied separately or combined ranging from a letter of warning to as serious as reporting the case to the General Medical Council or other such authority for appropriate action. Increasing awareness among authors and readers regarding this issue. Before submitting an article for publication, the authors should consult the 'Uniform Requirements for Manuscripts submitted to Biomedical journals. [25]

CONCLUSION

Research misconduct is being defined as the "Behavior by a researcher, intentional or unintentional that do not meets or fulfill the scientific and ethical standards. Fraud and Misconduct broadly encompasses plagiarism, fabrication, falsification, duplication, salami, gift and ghost authorship. The work was ignored by the academicians and researchers but it illustrates the need of national and international mechanisms for investigating the research misconduct. Prompt reporting of such misconduct is the moral responsibility of the readers as well. Most importantly, the editors have a pivotal role to play in prevention of duplicate publications. Last but not the least, tighter regulations need to be mandated in India in order to monitor and take appropriate punitive action against those who do practice research misconduct.

Acknowledgement: None

Source of Support: Nil

Conflict of Interest: None

Ethical Clearance: Permission taken

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DOI Number: 10.5958/2395-1796.2016.00030.2

Cryptosporidiosis: A Review on the Protozoan Zoonotic Infection of Public Health Importance

Praveen Kumar Praveen[1], Subha Ganguly[2], Rajesh Wakchaure[3], Parveez Ahmad Para[4], Shivchand Yadav[5], Ruchi Sharma[6], Kinkar Kumar[7]

[1]Assistant Professor, Department of Veterinary Public Health & Epidemiology, [2]Associate Professor, Department of Veterinary Microbiology, [3]Associate Professor, Department of Animal Genetics & Breeding, [4]Assistant Professor, Department of Livestock Products Technology, [5]Assistant Professor, Department of Veterinary Anatomy & Histology, [6]Assistant Professor, Department of Veterinary Parasitology, Arawali Veterinary College, Bikaner, N.H. – 52 Jaipur Road, V.P.O. Bajor, Sikar, Rajasthan, India; [7]Subject Matter Specialist, Krishi Vigyan Kendra, Pupari, Sitamarhi, Bihar, India

ABSTRACT

Cryptosporidiosis is a zoonotic disease caused by a protozoa Cryptosporidia species characterized by enterocolitis and diarrhea in man. *Cryptosporidium parvum*, *C. muris*, *C. bovis* and *C. agni* are the 4 species occurring in man and many other mammals like rat, mouse, cattle, sheep, goat, dog, cat, pig, monkey and deer. *C. parvum* is considered to be a serious human and animal pathogen.

Keywords: *Cryptosporidiosis, Human health, Protozoa, Zoonotic*

INTRODUCTION

Cryptosporidium is the organism most commonly isolated in HIV-positive patients presenting with diarrhea. It is one of the most common waterborne diseases and is found worldwide. The parasite is transmitted by environmentally hardy microbial cysts (oocysts) that, once ingested, exist in the small intestine and result in an infection of intestinal epithelial tissue.[1-2]

Symptoms

Cryptosporidiosis may occur as an asymptomatic infection, an acute infection (i.e., duration shorter than 2 weeks), recurrent acute infections in which symptoms reappear following a brief period of recovery for up to 30 days, and a chronic infection (i.e., duration longer than 2 weeks) in which symptoms are severe and persistent.[1] It may be fatal in individuals with a severely compromised immunesystem.[2] Sympto ms usually appear 5–10 days after infection (range: 2–28 days) and normally last for up to 2 weeks in immu nocompetent individuals (i.e., individuals with a normal functioning immune system) [1]; symptoms are usually more severe and persist longer in immunocompromised individuals (e.g., persons with HIV/AIDS).[3] Following the resolution of diarrhea, symptoms can reoccur after several days or weeks due to reinfection.[3] Based upon one clinical trial, the likelihood of re-infection is high in immunocompetent adults.[2]

In immunocompetent individuals, cryptosporidiosis is primarily localized to the distal small intestine and sometimes the respiratory tract as well.[2] In immunocompromised persons, cryptosporidiosis may disseminate to other organs, including the hepatobiliary system, pancreas, upper gastrointestinal tract, and urinary bladder[3]; pancreatic and biliary infection can involve acalculous cholecystitis, sclerosing cholangitis, papillary stenosis, or pancreatitis.[4]

Transmission

Transmission of infection is through contaminated material such as earth, water, uncooked or cross-contaminated food that has been in contact with the feces of an infected individual or animal. Contact must

Corresponding author:
Dr. Subha Ganguly
Email: ganguly38@gmail.com

then be transferred to the mouth and swallowed. It is especially prevalent amongst those in regular contact with bodies of fresh water including recreational water such as swimming pools. Other potential sources include insufficiently treated water supplies, contaminated food, or exposure to feces.[5] The high resistance of *Cryptosp oridium* oocysts to disinfectants such as chlorine bleach enables them to survive for long periods and still remain infective.[6]

The following groups have an elevated risk of being exposed to *Cryptosporidium*:[5]

i. Child care workers

ii. Parents of infected children

iii. People who take care of other people with cryptosporidiosis

iv. International travelers

v. Backpackers, hikers, and campers who drink unfiltered, untreated water

vi. People, including swimmers, who swallow water from contaminated sources

vii. People who handle infected cattle

viii. People exposed to human feces through sexual contact

Cases of cryptosporidiosis can occur in a city that does not have a contaminated water supply. In a city with clean water, it may be that cases of cryptosporidiosis have different origins. Testing of water, as well as epidemiol ogical studies are necessary to determine the sources of specific infections. *Cryptosporidium* is causing serious illness[6] more frequently in immunocompromised than in apparently healthy individuals. It may chronically sicken some children, as well as adults who are exposed and immunocompromised. A subset of the immunocompromised population is people with AIDS.

Life cycle

Infection is induced by ingestion of sporulated oocysts (round thick-walled cyst, 5 micron in size and contain 4 sporozoites) through food and water contaminated by fecal materials. The sporozoites invade the epithelial cells of intestine and develop into schizonts. Some merozoites produced by schizogony continue repeated schizogonic cycle, while others follow gametogony, resulting in the production of oocysts. The oocysts sporulate in the host. Thin walled oocysts rupture and setup into infection and the thick-walled oocyst. Thus, a very heavy infection buildup occurs in the infected host.

Epidemiology

Cryptosporidiosis is a widely distributed disease. The incidence ranges from 5 – 62.4% in various spp. of animals across the world. Human Cryptosporidiosis has been reported from Bangalore, Kolkata, Chandigarh, Chennai, Vellore and other places. Cryptosporidiosis is found worldwide. It causes 50.8% of water-borne diseases that are attributed to parasites.[7] In developing countries, 8–19% of diarrheal diseases can be attributed to *Cryptosporidium*.[8] 10% of the population in developing countries excretes oocysts. In developed countries, the number is lower at 1–3%. The age group most affected are children from 1 to 9 years old.[9] Roughly 30% of adults in the United States are seropositive for cryptosporidiosis, meaning that they contracted the infection at some point in their lives.[10]

Cryptosporidiosis in man

Incubation period varies from 5 – 14 days. The symptoms of the disease are fever, malease, moderate diarrhea accompanied by crampy abdominal pain, nausea and weight loss. About 10% of the patient recovers continuously but continued to remain symptomless oocyst passers. In immunocompromised humans the duration of the disease is prolonged up to 20 weeks with severe symptoms up to 70 loose watery motions a day and loss of body fluids up to 17 lit., which leads to severe weight loss and death. The disease is serious in persons suffering from AIDS or under immunosuppressive therapy, while in other it is often self limiting.[11-14]

Cryptosporidiosis in animals

It shows similar symptoms as observed in man concurrent infection with enterotoxic *E. coli*, Rotavirus, Corona virus and *Giardia spp*. in neonate ruminants. Feline leukemia in cats, Distemper in dogs may precipitate the infection.

Diagnosis[15-18]

There are two approaches suggested:

1. Fecal examination to detect oocyst

2. Immunogloting, ELISA, RELP for species

specific diagnosis

Treatment

Spiramycin and Lasalosid are suggested for treatment and Paromomycin for prophylaxis in human.

Prevention and control

High standard of hygiene, use of ammonia liberating disinfectant are effective to eliminate oocyst from environment.

Source of Funding: Nil/ Not applicable.

Ethical Clearance: Taken from Arawali Veterinary College committee.

Conflict of Interest: Nil/ None declared.

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DOI Number: 10.5958/2395-1796.2016.00031.4

Utilization of Old Age Homes and Geriatric Issues in India

Krishan Kumar Meena[1], V P Gupta[2]

[1]Assistant Professor, Department of Community Medicine, Rama Medical College,Hapur UP,
[2]Associate Professor,Department of Community Medicine, SGT Medical, College, Gurgaon, Haryana

ABSTRACT

Background: Elderly faces the rejection and neglect from their family. People go to institutions mainly because they have no relatives to care for them. Aim;- to study the utilization of old age homes and geriatric issues in India. Methods; - studies related to utilization of old age homes and geriatric issues were analyzed. Results; The major health problem was Visual problems 67% followed by Hypertension 54%, Depression 45%, Arthritis 43%, Diabetes mellitus 32% and Hearing problems 24%. Elders, who were tested for vision by Snellen's chart, showed that 288 (67%) elders had visual problems. Recommendations:- increases awareness about geriatric issues and their needs among target group though mass media, radio, TV, role play, poster, banner, etc.Results;- The major health problem was Visual problems 67% followed by Hypertension 54%, Depression 45%, Arthritis 43%, Diabetes mellitus 32% and Hearing problems 24%. Recommendations:- increases awareness about geriatric issues and their needs among target group though mass media, radio, TV, role play, poster, banner, etc.

Keywords: - *Old age homes, geriatric issues, hypertension, arthritis, depression.*

INTRODUCTION

In India the numbers of elders aged 60 years or more were increased from 5 percent in 1951 to 7.5 percent in 2011[1]

Old age means reduced physical ability, declining mental ability, the gradual giving up of role playing in socio-economic activities, and a shift in economic status moving from economic independence to economic dependence upon other's for support. Old age is called "dark" not because the light fails to shine but because people refuse to see it [2](Gowri 2003).

Older persons constitute one of the most vulnerable sections of the society. They are not only physically weak, but also lack economic resources and self esteemed social status.[3]

The expectancy of life in India is much less than 60 years. Psychologically too, most Indians appear to consider themselves old earlier than the chronological age of 60 years and the Indian women regard themselves to be old even much earlier[4] ,(Montross et al. 2006)

Elderly faces the rejection and neglect from their family. People go to institutions mainly because they have no relatives to care for them. One of the major impacts of globalization is breaking up of traditional family system. In India, migrants from the villages and towns to cities predominate, resulting in breaking up of families into nuclear families. Another impact of the globalization is the increasing economic burden on the elderly, especially the women who have practically non-existent property rights and other social security measures[5] (Bhat 2001).

The elderly citizens are in need of urgent attention. They do not need our pity, but the understanding love and care of their fellow humanbeings. It is our duty to see that they do not spend the twilight years of their life in isolation, pain and misery. Older persons are, therefore, in need of vital support that will keep important aspects of their lifestyles intact while improving their over-all quality of life[6] (Dandekar 1993).

MATERIALS AND METHOD

studies related to utilization of old age homes and geriatric issues were analyzed.

RESULTS

In the cross sectional study on health problems

among elderly inmates of old age homes in urban areas of Chennai, India carried by Jaiganesh D et. all among the 19 old age homes, 7 (37%), 9 (47%) and 3 (16%) old age homes were managed by government, private and trust respectively. Free services were available in 10 (53%) of old age homes and paid services in 6 (31%) old age homes and both services were available in 3 (16%) homes. The major health problem was Visual problems 67% followed by Hypertension 54%, Depression 45%, Arthritis 43%, Diabetes mellitus 32% and Hearing problems 24%. Elders, who were tested for vision by Snellen's chart, showed that 288 (67%) elders had visual problems. The overall prevalence of Visual impairment and Blind was 46% and 21% respectively. Prevalence of depression according to Geriatric Depression scale was 45% (194), the prevalence of mild, moderate, severe depression was 43% (83), 39% (76) and 18% (35) respectively. Among the study subjects tested for hearing by voice test, 102 (24%) had hearing problem while in another study of elderly living in old age homes and within family set-up in Jammu carried by Aruna Dubey et. all the general Feelings of Elderly Women This section tries to study the internal general feelings of old age people like: happiness, loneliness, depression, different moods, security and insecurity – social, emotional, economical, physical, help and support. The perception of the aged at youth was that 'old age' was a period of relaxation in life. About 60 percent of the elderly women living in the families had a positive attitude towards old age, while negative views regarding old age and the perception of old age as last stage of life which lacked in social security was observed in views both in family setup and old age home.

CONCLUSION

It is concluded that in the cross sectional study on health problems among elderly inmates of old age homes in Chennai carried by Jaiganesh D et all The major health problem was Visual problems 67% followed by Hypertension 54%, Depression 45%, Arthritis 43%, Diabetes mellitus 32% and Hearing problems 24%. Elders, who were tested for vision by Snellen's chart, showed that 288 (67%) elders had visual problems. The overall prevalence of Visual impairment and Blind was 46% and 21% respectively. Prevalence of depression according to Geriatric Depression scale was 45% (194), the prevalence of mild, moderate, severe depression was 43% (83), 39% (76) and 18% (35) respectively.

The internal general feelings of old age people like: happiness, loneliness, depression, different moods, security and insecurity – social, emotional, economical, physical, help and support. The perception of the aged at youth was that 'old age' was a period of relaxation in life. About 60 percent of the elderly women living in the families had a positive attitude towards old age, while negative views regarding old age and the perception of old age as last stage of life which lacked in social security was observed in views both in family setup and old age home in the study of elderly living in old age homes and within family set-up in Jammu carried by Aruna Dubey et all

Recommendations:- Increases awareness about geriatric issues and their needs among target group though mass media, radio, TV, role play, poster, banner, etc.

Acknowledgement: - My parents, wife and my kids

Source of Funding: - No source

Ethical Clearance: - I have properly referenced all the articles which I have used.

Conflict of Interest: - No conflict of interest

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DOI Number: 10.5958/2395-1796.2016.00032.6

Socio-cultural and Environmental Factors Contribute to Increased Body Weights and Obesity

Sartaj Ahmad[1], Bhawana Pant[2], Arvind Kumar Shukla[3]

[1]Associate Professor (Medical Sociology), [2]Professor, (Community Medicine), [3]Assistant Professor (Biostatistics), Department of Community Medicine, Subharti Medical College, Swami Vivekananda Subharti University, Meerut, UP. India

ABSTRACT

Obesity may be simply defined as the degree of body fat storage associated with elevated health risks. Obesity was widely seen as a symbol of wealth in some parts of the world. Now, it is a serious health problem throughout the world. It is high time to think about it and make changes in their lifestyle to have a healthy future.

Keywords: *Obesity, Biosocial phenomenon, Socio-cultural factors, Environmental factors*

INTRODUCTION

Ancient Greek medicine recognizes obesity is a medical problem. The Indian surgeon Sushruta (6th century BCE) recommended physical work to help cure it and its side effects. [1]. In modern culture, obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health, leading to reduced life expectancy and/or increased health problems. [2]. Obesity results when the caloric value of food intake exceeds energy output. Positive association between BMI and Blood Pressure have also been reported among Asian population. [3] Obesity are associated with rising living standards, steady urban migration, and beliefs, attitudes, family and social networks lifestyle changes. [4] A study done by Keith SW et al. (2006) identified ten possible contributors to increase of obesity. [5]. There is poor Knowledge and awareness regarding obesity among people in the study of Ahmad S. [6]

SOCIAL CHARACTERISTICS

The social characteristics of body weight are : - (i) sex/gender, (ii) age/life stage, (iii) race/ethnicity, (iv) employment, (v) occupation, (vi) income, (vii) education, (viii) household size, (ix) marital status, (x) parenthood, (xi) residential density, and (xii) region.

i. Gender

Females generally having more stored body fat than males. Beyond biological sex differences in body fat, substantial social and psychological gender differences exist with respect to weight in many societies, with fatness and thinness being more likely to be female and feminist issues. [7]. The highest weight gain occurs in both genders between age 25 and 34 years [8]. Stigmatization of body weight is more prevalent and severe for women than men. [9]. Many sex differences are physiological and linked to reproductive functioning, with more overall subcutaneous fat present in females and the distribution of body fat deposits being greater in lower body for females and upper body for males. [10].

ii. Age

Mechanisms involved in shaping body weight vary by age. [11]. A study conducted by Parashar P, et al (2014) revealed that childhood obesity is increasingly being observed with the changing lifestyle of families with increased purchasing power, increasing hours of inactivity due to television, video games and computers have replaced outdoor games and other social activities and The obesity problems are associated with lower education, lower income, poor nutrition and physical inactivity. [12, 13] A study conducted by Ahmad S, et al

Corresponding author:
Dr. Sartaj Ahmad
Telephone: 09897093882
Email: sartajsaleem@gmail.com

(2014) was found obesity (6.12%) among elderly than young people. Risk for cardiovascular disease is also known to increase with Obesity. [14, 15, 16]

iii. Race/Ethnicity

Beliefs, perceptions, and attitudes about weight differ among ethnic groups in many societies. [17] Ethnic variations in caloric intake and physical activity have been reported, but these are confounded by other factors such as socioeconomic status or residential location [18].

iv. Employment

Employment provides financial resources through income. [19] A study done by Parashar P, et al (2009) [20] and Maroof KA, et al (2007) [21] was found that obesity is common problem among bank employees. Many other jobs related to body weight is job related issue due to physical inactivity or the stress of working. [22]. House holders women more likely to be obese than others. [23].

v. Occupation

The occupations are diverse, and can be classified on many dimensions relevant to body weight. [24]. Occupational prestige tends to be inversely associated with relative body weight. [25]. A study done by Ahmad S, et al (2014) found that workers belonging to unorganized sector should be imparted health education regarding the importance of physical activity . [26]

vi. Income

Income provides resources and opportunities to exercise control over many aspects of life, and permit a person to select foods. [27]. People who experience hunger or food insecurity may overeat when food is available, which leads lower income groups in some societies to be more likely to be obese. [28].

vii. Education

Education is one of the strongest predictors of body weight and obesity in populations, with more highly educated people being thinner. [29] A study conducted by Ahmad S, et al. (2014) found that obese medical students were not much conscious to make extra effort to choose a healthier lifestyle. [30] A study conducted by Bhawana Pan,t et al. (2015) suggested that obesity is common among students due to types of food intake, lack of exercise, psychological depression and pressure of examination. [31] A study conducted by Ahmad S, et al (2014) revealed that consumption of non-vegetarian diet and fast food intake everyday was found among students. [32]

viii. Household Size

Household size is related to eating patterns, activity levels, and body weight, particularly among some portions of the population such as the elderly. In particular, living alone is a risk factor for problematic eating, activity levels, and body weight. [33]

ix. Marital Status

Marital status is related to body weight and obesity in many different ways. [34]. People tend to gain weight after entering marriage [35]. Spouses eat the majority of their meals and snacks together both at home and away from home, so that people consume most of their calories with their marital partner. [36]. Unmarried people sometimes engage in recreational physical activity to remain thin to attract a desirable partner and also as a form of social activity to interact with other people. [37].

x. Parenthood

Modern women having a child as one of the major reasons that they gained weight and are overweight.[38]. A direct association exists between parity and weight. [39]. Some women gaining and retaining considerable weight after childbirth while others lose weight. [40] The association between parity and body weight is modified by many socio-demographic and behavioral factors. [41]. A study conducted by Williamson et al. (1994) made the conceptual distinction between the contribution of childbearing and childrearing to weight gain after pregnancy. [42]. Energy intake of pregnant women typically increases as they gain weight during pregnancy. [43].

xi. Residential Density

Urban women are slightly more likely to be obese than their Rural women.[44]. A study conducted by Ahmad S, et al (2015) was found to be overweight among Urban Muslim Population.[45] Energy expenditure was traditionally very high in rural areas, due to the large percentage of the population involved in farm work and the need to walk long distances to engage in social activities. [46].

xii. Region

A study conducted by Sichieri R, et al (1994) in Brazil reported that the more economically developed southern region of the country had greater prevalence of obesity. [47] An another study conducted by Ellaway A, et al (1997) in a Scottish city exhibited different levels of weight, suggesting that obesity prevention efforts would benefit from focusing on place of residence. [48].

Physical Environmental

Humans have modified their physical environments in many ways, including the development and use of many forms of technology. [49] Air condition, adequate lighting, padded furniture are responsible for obesity. [50] The automobile and related motor powered vehicles and television are also responsible for obesity. A study done by Taras HL, et al (1989) [51] and Dietz WH, Strasburger VC. (1991) [52]. suggested that the amount of television viewing is directly associated with body weight in children and adults.

Religious Fasting

A study done by Ahmad S, et al. (2015) suggested that total Ramadan fasting reduces or eliminates excess hunger and rapid weight loss. The decrease in body weight may be due to increase in fatty acid oxidation to provide energy, when all glycogen level is depleted to provide glucose for energy production. [53] An another study conducted by Ahmad S, et al. (2015) also revealed that in normal non-diabetic individuals, an average weight loss of 1.7-3.8 kg during the month of Ramadan.[54]

CONCLUSION

Obesity is defined by body mass index (BMI) which is closely related to condition of having high levels of stored body fat. It is a complex, dynamic, and multidimensional biosocial phenomenon, a synergistic product of the interaction between physiology, economic and the social world. People of all ages can face social stigmatization. Understanding the contributions of history, Socio-culture, and other factors to patterns of body weight can help reframe thinking about the influences on obesity in ways that can generate new insights for research and practice.

Acknowledgment: None

Source of Funding: Nil

Conflicts: None

Ethical Clearance: Permitted by the Ethical committee

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DOI Number: 10.5958/2395-1796.2016.00033.8

Awareness among ANMs in an Assessment of Janani Suraksha Yozana in District of Delhi

Krishan Kumar Meena

Assistant Professor, Department of Community Medicine, Rama Medical College, Hapur, UP

ABSTRACT

Background:- less institutional delivery in India leads to high maternal mortality rate and high infant mortality rate, Aim; to study the awerness of ANMs in the study an assessment of Jananai Suraksha Yozana in district of Delhi, Methods;- awareness of ANMs were assessed in the study an assessment of Jannai Suraksha Yozana in a district of Delhi. Results;- All the ANMs in the study area had received training under NRHM. All the ANMs the study area were able to mention the income criteria (BPL) for identifying JSY. Although ANMs had received training in NRHM, yet their perceptions about their roles in providing services under the JSY scheme were limited. Recommendations;- In-service orientation training of ANMs, focusing on their roles and responsibilities under JSY the scheme in the study area.

Keywords;- *JSY, institutional delivery, NRHM, ASHAs, ANC*

INTRODUCTION

In 2009, 20 per cent of all the global maternal deaths and 31 per cent of neonatal deaths occurred in India[1] making the state of maternal deaths in India an issue of global importance, in reference to achievement of the Millennium Development Goals (MDGs). In 2005, India's maternal mortality ratio was 16 times that of Russia and 10 times that of China[2], thus it is of utmost importance to improve maternal health in India, specifically reducing the maternal mortality, infant mortality, and neonatal mortality of Indian mothers.

In the past 15 years, the MMR has improved in India (520 per 100,000 live births in 1990 to 290 live births in 2005). However, this fails to show the state level disparities, an example of this Kerala, where there are 16 deaths per 1000 births, while in the state of Uttar Pradesh, there are 96 deaths per 1000 births[3].

The causes of 80 per cent of all maternal deaths include haemorrhage, sepsis, eclampsia, prolonged or obstructed labour and unsafe abortions[4]. Those who survive these complications are often left with infections, injuries or disabilities[5]. Looking specifically at India, the major causes of maternal deaths include complications from haemorrhaging and sepsis[6]. If women in India had access to appropriate maternal health care, 75 per cent of maternal deaths occurring in India could have been prevented[7].

For pregnant women, 'appropriate' health care consists of antenatal care to identify and treat high risk pregnancies before problems arise, having an institutional delivery, and having access to post natal care. Additionally, having a skilled birth attendant during the time of delivery, access to emergency obstetric care and having access to a referral system for complications have also been cited as three critical maternal mortality reducing strategies[8,9]). Further research concludes that the access and ability to utilize emergency obstetric care will have the greatest impact on reducing maternal mortality[10]

However, the delay in seeking and utilizing appropriate health care can be divided into three different segments, the first being the delay in seeking professional health care, the second being a delay in reaching the appropriate health facility, and the third as the delay in receiving care[11]. Their delay in seeking health care is rooted in perceptions of the failure of the health system, and their mistrust in health facilities[12].

The National Rural Health Mission (NRHM) was launched by the Hon'ble Prime Minister on 12th April 2005,[13] to provide accessible, affordable and quality health care to the rural population, especially the

vulnerable groups. The Union Cabinet vide its decision dated 1st May 2013, has approved the launch of National Urban Health Mission (NUHM) as a Sub-mission of an over-arching National Health Mission (NHM), with National Rural Health Mission (NRHM) being the other Sub-mission of National Health Mission. NRHM seeks to provide equitable, affordable and quality health care to the rural population, especially the vulnerable groups.

Janani Suraksha Yojana[14] under the overall umbrella of National Rural Health Mission (NRHM) was proposed by way of modifying the existing National Maternity Benefit Scheme (NMBS). linked to provision of better diet for pregnant women from BPL families, JSY While NMBS is integrates the cash assistance with antenatal care during the pregnancy period, institutional care during delivery and immediate post-partum period in a health centre by establishing a system of coordinated care by field level health worker. The JSY is a 100% centrally sponsored scheme. The goal of the scheme is to reduce overall maternal mortality ratio and infant mortality rate, and to increase institutional deliveries in BPL families. It targets all pregnant women belonging to the below poverty line (BPL) households and of the age of 19 years or above. The main strategy to achieve the envisaged vision is to link the cash assistance under JSY to institutional delivery.

ASHA or an equivalent worker under supervision of ANM/AWW has the following roles:

- Identify pregnant woman from BPL families as a beneficiary of the scheme,
- Report to the ANM and bring the women to the sub-centre/PHC for registration,
- Assist the woman to obtain BPL certification if BPL card is not available,
- Provide and / or help the women to receive at least three ANC,
- Counsel for institutional delivery and fix before 7th month of pregnancy the place of delivery, in close consultation with the ANM and the PHC and inform the beneficiary,
- Assist in receiving two TT injection,
- When the pregnant woman is in labour or faces complication, escort the women to the pre-determined health centre and stay with her till the delivery is complete and woman is discharged,
- Arrange to immunize the newborn till the age of 10 weeks,
- Register birth or death of the child or mother,
- Post natal visits within 7 days of pregnancy and track mother's health,
- Counsel for initiation of breastfeeding within one-hour of delivery and its continuance till 3-6 months.

MATERIALS AND METHOD

Study design:- The present study was a cross-sectional and descriptive study.

Study area:- The study was carried out in south-west District of Delhi.

Study population:- Women who delivered in the reference period from 1st April 2010- 31st March 2011, ASHAs, ANMs, Medical officers of Dispensaries, involved in services under the JSY scheme

Samples techniques and size

Four dispensaries selected from 45 dispensaries in the south-west district of Delhi by drawing lots, these were:

- Delhi Govt. Dispensary- Allopathic Kapashera
- Delhi Govt. Dispensary- Allopathic Mahipalpur
- Delhi Govt. Dispensary –Allopathic sector -2 Dwarka
- Delhi Govt. Dispensary-Allopathic sector -12 Dwarka

All the functionaries in these dispensaries were included in the study.

The data was collected for 39 ANMs.

RESULTS

Table 1: General profile of ANMs included in the study population of south-west District of Delhi

General profile	ANM N= 39 (%)
Age	
20-30 yrs.	32(82.1%)
30-40 yrs.	7(17.9)
Educational level	
10th. Pass	1(2.6%)
12th. Pass	4(10.3%)
Graduate	34(87.2%)
Residing in the same area where working	
Yes	34(87.2%)
No	5(12.8%)
Population covered	
10,000-12000	35(89.7%)
< 12,000	4(10.3%)

82.1% of ANMs were in the age group of 20-30 years. 87.2% of ANMs were graduate. Nearly 87 % of ANMs mentioned that they were residing in the same area where they were working. The population covered by nearly 90% of the ANMs ranged between 10,000-12,000 and rest mentioned to have been covering less than 12,000 population for various services.

Table 2: Awareness about JSY scheme among ANMs included in the study population of south-west District of Delhi

Sl.No	Awareness about JSY scheme	Responses of ANMs N=39(%)
1.	Criteria for identifying beneficiaries under JSY Age above 19 years. BPL/SC/ST Up to two live birth	 3(7.7%) 9(23%) 27(69.2%)
2.	Criteria for identifying BPL in your area ;- Income is less than Rs. 20,000 in year Yes	39(100%)
3.	Training status under NRHM Yes	39(100%)
4.	Role during ANC Provide three ANC Provide 2 T.T Injections	24(61%) 15(38.5%)
5.	Role during transportation- call CATS ambulance Yes	39(100%)
6.	Role during delivery -fill JSY form Help to provide JSY cheque	10(25.6%) 29(74.4%)

All the ANMs in the study area had received training under NRHM. All the ANMs the study area were able to mention the income criteria (BPL) for identifying JSY beneficiaries in their area. However, their knowledge about other criteria was not adequate. Nearly 69% of them were not aware of latest modifications in eligibility criteria.

Calling the CATS ambulance for delivery was mentioned by all the ANMs as their role during transportation of women under the scheme.

Filling up JSY form by ANMs for incentive money and helping the women receive the cheques were the perceived roles of ANMs after delivery.

DISCUSSION

Roles of ANMs

82.1% of ANMs were in the age group of 20-30 years. 87.2% of ANMs were graduate. Nearly 87 % of ANMs mentioned that they were residing in the same area where they were working. The population covered by nearly 90% of the ANMs ranged between 10,000-12,000 and rest mentioned to have been covering less than 12,000 population for various services. All the ANMs in the study area had received training under NRHM. All the ANMs the study area were able to mention the income criteria (BPL) for identifying JSY beneficiaries in their area. However, their knowledge about other criteria was not adequate. Nearly 69% of them were not aware of latest modifications in eligibility criteria. Calling the CATS ambulance for delivery was mentioned by all the ANMs as their role during transportation of women under the scheme. Filling up JSY form by ANMs for incentive money and helping the women receive the cheques were the perceived roles of ANMs after delivery.

Although both ASHAs and ANMSs had received training in NRHM, yet their perceptions about their roles in providing services under the JSY scheme were limited. Moreover there was shortages of ANMs in the study areas as a result they could not create awareness about the JSY scheme.

CONCLUSIONS

Although ANMs had received training in NRHM, yet their perceptions about their roles in providing services under the JSY scheme were limited. Moreover there was shortages of ANMs in the study areas as a result they could not create awareness about the JSY scheme.

RECOMMENDATIONS

1. Improve the reach of the scheme by removing the constraint of shortage of the ANMs in the study area.

2. In-service orientation training of ANMs, focusing on their roles and responsibilities under JSY the scheme in the study area.

Conflict of Interest;- No conflict of interest.

Source of Funding;- No source

Ethical Clearance:- The permission from Delhi govt. was taken before the study was done.

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DOI Number: 10.5958/2395-1796.2016.00034.X

Review of Comparative Study of Mifepristone with Vaginal Misoprostol for First Trimester Termination of Pregnancy with Different Gestational Age

Krishan Kumar Meena[1], Seema Rani Meena[2], Krishna Priya Banerjee[3]

[1]Assistant Professor, Department of Community Medicine, Rama Medical College, Hapur, UP, [2]Junior Specialist, Obs. & Gyne. District Hospital, Swaimadhopur, Rajasthan, [3]Professor & Unit Head,Department of Obstetrics & Gynaecology, Zenana Hospital, S.M.S. Medical College, Jaipur (Raj.)

ABSTRACT

background;- Unsafe abortion nonetheless remains a neglected health care problem in developing countries. Unsafe abortion is characterized by the inadequacy of the provider's skills **Aim**:- to review of Comparative study of Mifepristone with vaginal Misoprostol for first trimester termination of pregnancy with different gestational age. **Method:-** studies related to the comparative study of Mifepristone with vaginal Misoprostol for first trimester termination of pregnancy with different gestational age were analyzed. **Results:** The medical abortion with the given regimen and protocol was observed highly successful and complete abortion was achieved in 98.51% and 97.76% in Group–A and Group–B respectively. Failure was observed only 1.49% in Group–A and 2.24% in Group–B. **Conclusions:** medical abortion can be safely administered upto 63 days of gestation but women should be counseled about the increased blood loss and duration of bleeding. Recommendation; increase awareness in target group about safe abortion methods and services through role play, nukkad natak, TV, Radio, news papers etc.

Key-words: *termination of pregnancy, Mifepristone, MTP*

INTRODUCTION

Each year, throughout the world, approximately 210 million women become pregnant and some 130 million of them go on to deliver live-born infants. The remaining 80 million pregnancies end in stillbirth, or spontaneous or induced abortion. Approximately 46 million pregnancies are voluntarily terminated each year and around 19 million abortions performed unsafely.[1, 2]

Unsafe abortion nonetheless remains a neglected health care problem in developing countries. Unsafe abortion is characterized by the inadequacy of the provider's skills and use of hazardous techniques and unsanitary facilities. Women who resort to clandestine facilities or unqualified providers put their health and life at risk.[1]

Inspite of legalization of abortions, the incidence of illegal abortions has not come down in our country.

In India nearly 15 million abortions are estimated to be taking place each year, of these 10 millions risk their lives by approaching quacks or untrained abortion providers and almost 15,000 to 20,000 women die because of complications of unsafe abortions.[3]

In order to reduce the number of unsafe abortions, Govt. of India passed MTP Act in 1971 and came into force from 2nd April 1972 and rules modified in 2003 to strengthen the MTP ACT.[4]

So high quality safe abortion services, should be available even at grass root level to avoid the risk of women turning to unauthorized personnel

Misoprostol: It is a synthetic Prostaglandin E1 analogue discovered in 1967 by Robert et al and first time marketed in 1985 for the prevention of NSAID

Corresponding author:
Krishan Kumar Meena
Assistant Professor, Department of Community Medicine, Rama Medical college, Hapur ,UP,
Email id ;- kkmeeena.kumar@gmail.com

induced gastric ulcers.[1]

Misoprostol binds to myometrial cells causing strong myometrial contractions and causes cervical softening and dilatation and than expulsion of products of conception. It is stable at room temperature and well absorbed from the gastrointestinal tract and vaginal mucosa. Being selected for PGE1 receptors, there is no significant effects on bronchi and blood vessels, minimizing its effects as compared to other prostaglandins.[5]

The advantage of medical abortion include, no anaesthesia, no surgery, it affords the better privacy. Since only the women and her gynaecologist need know about her pregnancy. No surgical trauma leading to life threatening problems like uterine perforation and bowel injuries.

MOHFW, GOL Comprehensive Abortion Care

Guidelines, 2010 reiterate the safety and efficacy of medical method of abortion and make recommendations for medical methods for early abortions. The DCGI recently approved a combipack of one 200mg tablet of Mifepristone and four 200mcg tablets of Misoprostol for MMA up to 63 days.[2]

METHOD

Studies related to the comparative study of Mifepristone with vaginal Misoprostol for first trimester termination of pregnancy with different gestational age were analyzed.

RESULT & DISCUSSIONS

In a similar study by Mitchell D Creinin et al (2001)[5], the mean age was 26 years in Group-1 and 25 years in Group-2.

In PW Ashok et al (1998)[6] study, the mean age of women was 26.0 years.

In Agarwal Shivani et al (2008)[7] study, the maximum women were between 26-30 yrs of age i.e. 53.4%.

The mean age was 26.53 yrs in Group–A and 26.93 yrs in Group–B in the study conducted by Deshpande Sonali et al (2010)[8].

The side effects reported by the women after medical abortion in our study were; the majority of women experienced abdominal pain (15.67% and 37.31% in Group–A and Group–B respectively), which resolved itself and no analgesics were required. Nausea was reported by (10.45% in group-A and 30.60% in group–B). P-value was 0.00006 of abdominal pain and 0.00004 for nausea. The difference between both groups were statistically significant. This difference could be, as the gestational age increases, abdominal pain also increase due to expulsion of larger gestational sac and increased dose of Misoprostol required. Diarrhea and vomiting were reported by only (0.00%, 3.73% in Group–A and 2.00%, 5.22% in Group–B respectively). And there were no statistical difference in both the groups.

In the study conducted by Deshpande Sonali et al in 2008[8] i.e. abdominal pain was seen in 15% and 37.50% in Group–A and Group–B respectively, nausea was reported in 10% in Group–A and 31.11% in Group–B and results were comparable to our study.

In H. Kopp Kallner et al (2009)[9] study, nausea was noted (86.7% in group <50 days gestation age and 87.5% in 50 – 63 days of gestation age). Vomiting was noted (52.2% in group <50 days gestation age and 62.5% in 50 – 63 days of gestation age)

CONCLUSIONS

Termination of an early unwanted pregnancy is a basic need of a woman; for that she is using lots of traditional methods, remedies since very ancient times. After legalization of medical termination of pregnancy, surgical methods were the only available options.

Previously medical abortion was approved only upto 49 days of gestational age but now it is approved recently by WHO and FOGSI upto 63 days or 9 weeks of gestational age.

From our study we conclude that medical abortion is an effective, safe and acceptable method for termination of early pregnancy upto 63 days of gestational age. The duration of bleeding and amount of blood loss increased with increase in the gestational age but it was not highly significant in both groups and very high complete abortion rate was observed and the acceptability of the procedure was also very high.

Therefore we concluded that medical abortion can be safely administered upto 63 days of gestation but women should be counseled about the increased blood loss and duration of bleeding.

Recommendation; increase awareness in target group about safe abortion methods and services through role play, nukkad natak, TV, Radio, news papers etc.

Conflict of Interest;- No conflict of interest.

Source of Funding;- No source.

Ethical Clearance;- I have properly referenced all the articles which I have used.

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Published, Printed and Owned : Dr. R.K. Sharma
Printed : Saurabh Printers Pvt. Ltd., B-280, Okhla Indl. Area, Phase-I, New Delhi-110 020
Published at: Institute of Medico Legal Publications Pvt. Ltd. 4th Floor, Statesman House Building, Barakhamba Road, Connaught Place, New Delhi- 110 001
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