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SATKHIRA MEDICAL COLLEGE
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EDITORIAL

Premarital Blood Screening Test is a Must

KG Mostafa

Premarital Screening (PMS) is defined as a panel of tests in which couples that are going to get married are tested for genetic, infectious and blood transmitted diseases to prevent any risk of transmitting any disease to their children. Now a days premarital screening is one of the most important strategies for prevention of genetic disorders, congenital anomalies and several medical, psychological marital problems[1]. Premarital Counseling (PMC) is also the most appropriate procedure as it is generally acceptable from the religious and ethnical point of view as well as its minimal health and economical requirements[2]. The majority of counseling concerns haemoglobinopathies (Sickle cell anaemia and thalassaemias). These diseases are a major public health problem in the Mediterranean area, the Middle East, the Indian subcontinent including Bangladesh, South East Asia, tropical Africa and the Caribbean. According to the WHO approximately 250 million people are heterozygous for inherited haemoglobinopathies including thalassaemias and sickle cell disease[3]. In Kingdom of Saudi Arabia (KSA) and other Muslim countries, the pattern of marriage encourages consanguineous and other of relative marriages, leading to an increase in the occurrence of recessive genetic disorders[4]. Genetic disorders especially thalassaemias and haemoglobinopathies are highly prevalent in general population of these countries including Bangladesh[5]. Hereditary disease specifically haemoglobin E disease, thalassaemia, double heterozygous haemoglobin E -Beta thalassemia and to a lesser extent haemoglobin D disease or sickle cell disease are present with a high prevalence in South East Asia including Bangladesh and cause greater suffering of the population in these areas[6]. Since 1972, Bangladesh has made progress in some health related aspects such as infant mortality, life expectancy and access to health care but lacking far behind in providing genetic services from many of the countries including our neighbouring country, India. Data from industrialized countries show that significant genetic diseases or birth defects that may affect approximately 3% of all pregnancies, account for up to 30% of paediatric hospital admissions and cause about 50% of childhood deaths. In addition recessively inherited disorders account for less than 20% of single gene disorders and less than 5% of

congenital and genetic diseases. On the other hand, genetic and congenital disorders are responsible for a considerable proportion of perinatal and neonatal mortalities in the world[7] . Effective prevention can maximize the available resources if it is instituted properly, preventing up to 95% of affected births. Healthy carriers of beta-thalassaemia can be identified inexpensively and accurately by a simple blood test. Couples who undergo testing can be informed about genetic risks and given option for reducing risk, including prenatal diagnosis [8]. Initial thalassaemia screening was first carried out in 1975 by Silvestroni and colleagues in Latium, Italy, as part of school prevention programme [9] . Screening for sickle cell anaemia began before this, in Virginia in 1970. Nationwide screening programmes also began in Canada, Cyprus, Greece, Italy and the UK during the 1970s, with proven success [10]. Until this point, the genetic causes of haemoglobinopathies were understood but little had been done to prevent them in newborns [11]. Consanguinity refers to relationship by blood or common ancestry, in which the chances of inheriting a recessive disease are increased; the closer the relationship the greater the risk. Marriages between same tribes or extended family groups are favoured in some cultures, including those between first cousins. Consanguineous marriages are uncommon in Western countries. Marriage between first cousins is forbidden by the orthodox Church and Roman Catholic Church, and may be seen as incestuous in the United States[11]. Personal characteristics including socioeconomic status have implications for the outcome of premarital screening programmes. Education of the couples who are to be screened is extremely important and it is important to educate all members of the screening team (laboratory technologists, nurse practitioners, physicians, counselors, outreach workers and social workers). According to Schmidt, 'sufficient planning in the educational area before the first blood sample is drawn can avoid failures of the programme[12]. The meaning of the term 'carrier status' should be made known to members of the public long before they get married. For successful public education, government and government organizations must cooperate, as well as community and religious leaders, school parent organizations and health personnel[11]. People who responded to information about premarital screening had favourable attitudes towards premarital counseling and examination of consanguineous marriages, possibly relating to social changes, declining illiteracy, increasing economic pressures, increasing numbers of nuclear families and longer waiting times before starting a family. People with a negative attitude towards these tests were mostly unmarried males. Eshra and colleagues suggested educational programmes about the benefits of premarital examination should target unmarried males, so they

can make informed choices about unmarried females and consanguineous marriages[13]. Religious beliefs restrict the success of screening programmes in some communities. In southern Iran, premarital screening has been made mandatory for 10 years, yet high-risk couples still get married and give birth to children homozygous for beta-thalassaemia. Often this is because of religious and traditional cultural restraints; in the case of Islam, consanguineous marriages are permitted, so thalassaemia persists in some parts of the community, making the programme redundant[14]. Some people believe that their fate is determined by God and therefore accept the risk of having a sick child. A recent report in The Jordan Times showed that many Jordanians view the results of their 'unions' as fate[15]. One interviewee stated: 'All my ten children are disabled; they will get their reward in heaven'. On the contrary, there are many teachings in the Islamic culture that promote healthy marriage and the role of counseling[16]. Al Khaldi et al evaluated the attitude of health-science students in Saudi Arabia towards premarital screening and counseling. Most students had a positive attitude, but around 25% refused testing and counseling according to their interpretation of Islamic principles. Awatif studied attitudes among female students in King Saud University, discovering that 86% of them felt positively about premarital testing[17]. Islamic countries, and all three provided evidence that religious beliefs could be obstacles to the success of premarital screening programmes, regardless of other factors such as education level [14-16]. The same conclusions were reported long ago in other (non-Muslim) communities. In 1981, Angastiniotis and Hadjiminas stated that support from the Church was the main reason for the success of screening programmes in Cyprus and Greece[17]. No data is available regarding premarital screening programmes in Pakistan, Nepal, Sri Lanka, Bhutan and Bangladesh. In India, a few selected private clinics are offering premarital screening testing as a package[18]. In Bangladesh, Pakistan, Nepal, Bhutan and Sri Lanka as well as in India, the health related problems including inherited diseases are more prevalent, so the governments of these countries should be committed to solve these problems. They are engaged to prevent the communicable and other chronic diseases.

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All correspondence to :

Prof. Dr. Khan Golam Mostafa
Professor & Head
Department of Paediatrics
Satkhira Medical College
Satkhira, Bangladesh

Original Article

Prevalence at Allergic conjunctivitis in Eye O.P.D of 250 bedded General Hospital, Jessore.

MA Kabir[1], HS Sarkar[2], S Chatterjee[3], M Saifullah[4]

ABSTRACT:

Objectives : The purpose of this study is to find out the prevalence of allergic conjunctivitis in outpatient dept. of 250 bedded General hospitals, jessore. It is a secondary level treatment center. So this study is afield level study. **Method:** - Total patients were included from hospital record book , who were suffering from allergic conjunctivitis / with age and sex. Then detailswere analyzed in table. **Results:**-This study shows about 21.15% patients of Eye O.P.D in this hospital are suffering from allergic conjunctivitis. Below 10 years, patients are less higher in male percentage (Male 37.82% where female is 62.18%). But as increases, prevalence of allergic conjunctivitis rises with higher percentage in female. **Conclusion:-** Significant numbers of patients are suffering from allergic conjunctivitis. Different international studies show that prevalence of this disease is rising throughoutthe world due to global warming and climate changes. So multi centrestudy should be done with involvement of large population including identification of common allergens and the effect of climate changes.

Keywords:

1. *Dr. Md. Alamgir Kabir, Assistant Professor, Ophthalmology, Satkhira Medical College, Satkhira.*
2. *Dr. Himadri Shekor Sarkar, Senior Consultant, Ophthalmology, 250 bedded General Hospital, Jashore.*
3. *Dr. Sutapa Chatterjee, Assistant Professor, Radiology & Imaging, Satkhira Medical College, Satkhira.*
4. *Dr. Md. Saifullah, Assistant Professor, Anaesthesia, Satkhira Medical College, Satkhira.*

Introduction

The population of jessore is about 3 millions. 250 bedded Eye O.P.D gives service not only Jessore district but also gives service neighbouring district Magura, Norail, Jhenaidoh, Chuadanga and Sathkira. Allergic conjunctivitis is a common ocular disease. Allergic conjunctivitis is inflammation of the conjunctiva (the membrane covering the white part of the eye) due to allergy. Ocular allergies are characterized by type 1 (Ig E-mast cell mediated) and type iv(cell mediated) hypersensitivity.The ocular allergic response is a cascade of events that is coordinated by mast cell(1). Beta chemokine's such as exotoxin and MIP-1 alpha have been implicated in the priming and activation of mast cells in the ocular

surface. When a particular allergen is present, sensitization takes place and prepares the system to launch an antigen specific response. TH2 differentiated T cells release cytokines, which promote the production of antigen specific immunoglobulin E (Ig E). Ig E then binds to Ig E receptors on the surface of mast cells. Then mast cells release of cytokines, prostaglandins, and platelet activating factor. Pathophysiologic consequences include increased vascular permeability, smooth muscle contraction, mucous secretion, and prurities. Type 1 reaction occurs in patients who have already been sensitized to an antigen ,so the immediate phase commences within minutes of encounting the antigen. The late phase –which involves recruitement of this tissue-damaging cells may lasts for several day [1]. Histamine is the main mediators of type 1 allergic reactions. When histamine is released from mast cells, it binds to H1 receptor on nerve endings and causes the ocular symptom of itching. Histamine also bind to H1 and H2 receptors of the conjunctival vasculature and causes vasodilation . Mast cell-derived cytokines such as chemokine interleukin IL-8 are involved in recruitiment of neutrophils. TH2 cytokines such as IL-5 recruit eosinophils and IL-4, IL-6, and IL-13, which promote increased sensivity. TYPE IV hypersensivity is a cell-mediated process involving T-cells, cytokines and macrophage activation. The response peaks at 48 to 72 hours (called delayed hypersensitivity) and results in tissue damage.

Allergic conjunctivitis is of two types- acute and chronic form.

(a) Acute allergic conjunctivitis include-

I. Seasonal allergic conjunctivitis.
II. Perennial allergic conjunctivitis.

(b) Chronic Allergic conjunctivitis include

I. Vernal keratoconjunctivitis
II. Atopic keratoconjunctivitis
III. Jiant papillary conjunctivitis.

Specially, ocular allergy presents in conjunction with other systemic atopic manifestations including rhinoconjunctivits, rhinosinusitis,asthma, urticarial or eczema [2]. Allergic rhinitis, considered by many the common allergic disorder, is complicated by ocular symptoms in 50% to 75% of patients, according to multiple studies, and this may be increasing [2,3,4].

The most prominent symptom of allergic conjunctivitis is itching , which can range from mildly uncomfortable to severely bothersome. Itching and other common symptoms (which may include watery eyes, redness, pain and soreness, sting and swelling) may be detrimental to patients and reduce their ability to perform daily routines or activities at school or work. The sine qua non of allergic conjunctivitis is itching, and diagnosis of allergic conjunctivitis should be called into question of a patient does not complain of ocular itch [5]. A history of allergic rhinitis, hay fever, astma or atopic dermatitis may commonly be noted in the patients and/ or family member [6].

The two most common forms of ocular allergy are seasonal and perennial allergic conjunctivitis and of the two, seasonal is the more common [5]. Seasonal and perennial allergies differ according to the nature of the symptom triggering allergens, seasonal are triggered by aeroallergens that have a seasonal periodicity, such as tree, grass, and weed pollens that abound in spring and fall. [1] Patients sensitive to those allergens tend to present most frequently during those seasons. Perennial allergies, by contrast, are triggered by environmental allergens commonly found in the home-such as dust

mites, mold spores, or animal dander-and do not follow a seasonal distribution [3]. As a result, perennial allergies are problematic for patients all year long.

Physical examination of patients suspected of having ocular allergy involves inspection of periocular and ocular tissues.[5] Eyelids should be examined for abnormalities, including evidence of blepharitis,dermatitis, meibomian gland dysfunction, swelling, discoloration, or spasm. Periorbital edema (eyelid swelling) that results from allergies may be more marked in the lower lid due to the effects of gravity. A dull blueish skin discoloration below the eye (an "allergic shiner") results from venous congestion and is present in some patients with allergies [5].

The conjunctiva (palpebral and bulbar) should be inspected for abnormalities, such as chemosis, hyperemia, papillae, and the presence of secretion, although patients with allergic conjunctivitis frequently have unremarkable physical examinations [5]. Conjunctival injections (redness) may be mild to moderate. Swelling or chemosis may seem out of proportion to the amount of redness present and may be most noticeable at the plicasemilunar is, the relatively loose area of bulbar conjunctiva at the nasal canthus. The palpebral conjunctiva in patients with allergic conjunctivitis tends to have a milky or pale pink appearance, related to allergy- associated edema; by contrast, bacterial infections tend to produce a velvety, beef-red palpebral conjunctiva. Small, vascularized nodule (papillae) may be seen on the palpebral conjunctiva. Vernal kerato conjunctivitis and atopic keratoconjunctivitis are advanced forms of allergic conjunctivitis with unique characteristics and presentations. Vernal keratoconjunctivitis is named for its seasonal recurrence in spring and is characterized by chronic lymphocyte and mast-cell infiltration of the conjunctiva. Symptoms, including itching, are characteristically severe and can be triggered by dust, bright light, hot weather, and other nonspecific stimuli. [6] Inflammation of the palpebral conjunctiva can lead to the development of giant papillae on the tarsal conjunctiva, yellow-white points on the limbus (Horner's points) or conjunctiva (Trantas dots), lower eyelid creasing (Dennie's lines), pseudomembrane formation on the upper lid, and coppious fibrinous discharge. [6] Atopic ketatoconjunctivitis, like vernal keratoconjunctivitis, is a chronic mast-cell–mediated allergic condition; a patient or family history of atopy (eg, eczema, asthma, or allergic rhinoconjunctivitis) is nearly always present and is central to making the diagnosis [6]. Symptoms of itching, tearing, and swelling in atopic patients tend to be much more severe than in patients with allergic conjunctivitis [6]

Methods: This is a Hospital based retrospective study. Here patients were diagnosed on the basis of personal and family history of allergy with other allergic diseases (c.g. Br.asthma), Symptoms, signs and slit lamp examination. Patients, who were diagnosed as allergic conjunctivitis, were recorded in the register book of the hospital. From this register book, patients were recorded for this study with age and sex. Later patients were tabulated on age and sex groups.

Result: 4468 patients of allergic conjunctivitis were included for study from 250 bedded general hospital, Jessore record book from 1.11.16 to 31.6.17.

Table -1

This table included total number of

patients who attended the eye O.P.D. of this hospital from 1.11.16 to 31.6.17.

Male patient	Female patients	Total patients
9368	11757	21125

Table-2

This table includes total number of allergic conjunctivitis patients the eye O.P.D. from 1.11.16 to 31.6.17. Again patients were divided into male and female sex groups.

Male patients	Female patients	Total patients (Allergic conjunctivitis)
1690 (37.82%)	2778 (62.18%)	4468

Table-3

This table shows that near about one fifth patients attending eye O.P.D. in this hospital are suffering from allergic conjunctivitis.

Total patients attending eye O.P.D	Total allergic conjunctivitis patients Attending eye O.P.D.	Percentage of patients (Allergic conjunctivitis)
21125	4468	21.15%

Here patients were divided in 5 groups on age as 0-10 years, 11-20 years, 21-30 years, 31-40 years and 41- above years.

Each groups was again divided into male (M) and female (F) sex groups.

Above table shows that allergic conjunctivitis patients are less below 10 years of age with male predominance. But as age increases, prevalence of this disease increases. Here table shows that female patients are more above 10 years.

Discussion: Total study shows that 21.15% patients are suffering from allergic conjunctivitis among the patients attending the eye O.P.D. Male patients are less than female patients. From this study, it is clear that below 10 years of age (15.17%), chances of allergic conjunctivitis is less. But male patients (8.91%) are more as age increases. Chances of attack allergic conjunctivitis become more. Here female are more sufferer in all age groups above 10 years. My study show that peak level is above 40 years (24.12%). But between 10-20 years (16.37%), and 21-30 years (22.62%) chances are nearly equal. In internet search, we did not get any study regarding prevalence of allergic conjunctivitis in Bangladesh.

The study of M. Alamgir et al [7] shows that rhinitis is more common among patients of 20-29 years of age groups and female are more sufferer. As both are allergic conditions, so they have some common features like age and sex distribution. In that context, results of my study are similar to that. Kabila et al [8] in his study shows that male children were found to be more suffering from all types of allergic conditions than Female. My study expresses same result below 10 years of age. But Ketelaris CH et al [9] showed diversity in prevalence of allergic conjunctivitis in different parts of the world excepting Europe and North America. In Turkey, 3.85 children suffer from allergic rhino conjunctivitis where as in Nigeria this is 39.20% Paulo.J.gomes, [10], in his paper, described that 15-20% of U.S population suffers from allergic conjunctivitis. This prevalence is similar in Europe, Australia, Japan and increasing worldwide.

Conclusion

Our study and other international studies show that allergic conjunctivitis patients are common not only in our country, also

are common not only in our country, also developed world. As person becomes aged from childhood, chances of attack increase more. If a person has personal or family history of asthma, allergy eczema or other allergic conditions, he should be aware as age increases. He orshe should try to avoid that. This would help him in prevention of not only allergic conjunctivitis, also Br.asthma, allergic rhinitis, eczema and others allergic conditions. As prevalence of allergic conjunctivitis is increasing through out the world, there should have multi centre study about this disease with involvement of large population including identification of common allergens due to climate changes.

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Original Article

Superficial Fungal infection in Rural areas of Bangladesh

H Chakrabarty[1], QA Ahmed[2], SR Pervin[3], S Zahan[4], MS Rahman[5], TK Das [6], S Biswas [7]

ABSTRACT:

Background: Superficial fungal infections of skin are very common in rural areas of Bangladesh. The prevalence and characteristics of superficial fungal infections vary with age, sex, climatic conditions, lifestyle, and population migration patterns. **Objectives:** This study was undertaken to determine the characteristics of amongst rural patients visiting in the Dermatology outpatient Department of Satkhira Medical College Hospital, Satkhira Sadar Hospital and Sangram Private Clinic Ltd. **Methods:** From January 2016 to June 2017, there were 3035 patients visited in Dermatology outpatient department. A total of 601 (17%) patients diagnosed with superficial fungal infection were included in our study after inclusion criteria. **Results:** The patients comprised 310 (51.58%) males and 291 (48.42%) females aged from newborn to 90 years, 180 (30%) patients aged 0-14 years, 357 (59%) patients aged 15-64 years and 64 (11%) patients aged more than 64 years. Tineasis were the most common SFIs, followed by candidiasis. In this population, tinea corporis (22.63%) was the most prevalent form of SFIs which generally presented with oval itchy localized ring lesions with central clearing and sometimes inflammatory red papules. Pityriasis versicolor (12.81%) was the second most common superficial fungal infection. **Conclusion:** This study clearly shows that SFIs are of concern in both genders and in all age groups. The prevalence of superficial fungal infections are increasing in day by day throughout Bangladesh. The pattern and distribution of SFI in Bangladesh particularly in rural population seems to very high beyond our prediction.

Keywords: candidiasis, dermtophytosis, superficial fungal infection, tinea infection

1. Dr. Harashit Chakrabarty, Asst. Professor , Dermatology, Satkhira Medical college
2. Dr. Quazi Arif Ahmed, Asso. Professor, Medicine Satkhira Medical college
3. Dr. Sayed Ruksana Pervin, Asst. Professor , Paediatrics, Satkhira Medical college
4. Dr. Sharifa Zahan, Lecturer, Community Medicine , Satkhira Medical college
5. Dr. Md. Shamsur Rahman, Asst. Professor , Paediatrics, Satkhira Medical college
6. Dr. Tarun Kanti Das, Asst. Professor , Paediatrics, Satkhira Medical college
7. Dr. Sabbosachi Biswas, Lecturer, Physiology, Ad-din Medical College, Jessore

Introduction:

Superficial fungal infections (SFIs) affect millions of people worldwide; with an estimated lifetime risk of 10–20% [1]. The pathogens responsible for SFIs include dermatophytes, and candida. Dermatophytes are the most frequently encountered causative agents of SFIs, leading to tinea infections, which are generally classified according to the body

site affected. The geographic location, cultural background, and population migration patterns significantly affect the characteristics and prevalence of SFIs in particular regions. A significant variation in the pattern of mycotic infection in different countries is clearly evident from studies performed in different country like Algeria, South Africa, Mexico, Italy, Japan, USA, Canada, Brazil, India and Australia [2-11]. This heterogeneity in the prevalence of SFIs in different parts of the world has been attributed to factors such as climate (humidity, temperature), lifestyle (unhygienic), involvement in outdoor activities and the prevalence of underlying diseases (diabetes, malnutrition, liver and renal disease, immunosuppression etc). Another factor is the reluctance of the patients to seek treatment because of the minor nature of the disease or due to embarrassment, unless the condition becomes sufficiently serious to affect the quality of life [12]. Studies aimed at determining the intensity and nature of SFIs in different regions of the world are important for the prevention and management of SFIs [1,13-16]. Although SFIs are quite common in rural areas, very little attention has been paid to their characteristics and prevalence in this country. **Methodlogy:** This was a cross sectional study conducted in OPD of Satkhira Medical College Hospital, Satkhira Sadar Hospital and Sangram Private Clinic Ltd. A total of 3035 patients of rural community were examined in our hospital from January 2016 to June 2019. The suspected patients for SFI were taken to our laboratory for confirmation by microscopic examination and culture. The detected body parts were cleaned with alcohol; then, skin scraping, hair plucking with roots, and nail shaving, clipping were done with a scalpel and the specimens were aseptically placed on a glass slide with one drop of 20% KOH and examined under the microscope for fungal hyphae. Moreover, mycological examinations were performed to confirm the diagnosis of pityriasis versicolor. Specimens were taken with the help of a scotch tape. Oral and genital swabs were also taken with swab sticks for suspected candidal infection, and microscopic examination and were done accordingly. Patients receiving immunosuppressant therapy, diabetes, and immunocompromised individuals were excluded from our study. All data were tabulated for further analysis.

Results: A total of 601 (17%) patients diagnosed with superficial fungal infection were included in our study. The patients comprised 310 (51.58%) males and 291 (48.42%) females aged from newborn to 90 years, 180 (30%) patients aged 0-14 years, 357 (59%) patients aged 15-64 years and 64 (11%) patients aged more than 64 years. Tineasis were the most common SFIs, followed by candidiasis. In this population, tinea corporis (22.63%) was the most prevalent form of SFIs which generally presented with oval itchy localized ring lesions with central clearing and sometimes inflammatory red papules. Pityriasis versicolor (12.81%) was the second most common superficial fungal infection which presented with multiple hypopigmented patches with powdery scales involving the trunk and sometimes other sites; this lesion is erythematous and itching in the hot weather. Tinea capitis generally presented with one or more of the following scalp hair follicle abnormalities; hair loss with round or oval patches of alopecia, itchy scaly patches on the scalp and/or occipital area, scaly papules or plaques accompanying inflammation, or non-inflammatory

diffuse areas of scaling. Tinea pedis presented with maceration, erythema, desquamation, hyperkeratosis, pustules, and pruritus of the sole. Candidal intertrigo presented with interdigital lesions and a white soggy skin involving the digital clefts. Patients with tinea cruris presented with mild plaque, multiple scaly eruptions and erythematous patches with active margins. The least frequent SFI in this population was tinea barbae. Generally, onychomycosis presented clinically with different patterns of nail invasion, including distal and lateral subungual, proximal subungual, endonyx and total dystrophy of the nails. In child age group Tinea capitis (n=48, 26.67%) followed by oral thrush (n=39, 21.67%) and tinea corporis (n=24, 13.33%).The segregation of patients with SFIs according to age group and gender revealed that tinea capitis (26.67%) was more prevalent in children aged 0–14 years, while tinea corporis (25.49%) was more common in adults aged 15–64 years.

Table 1 : Age distribution of the patient n= 601

Age	frequency
aged 0-14 years	180 (30%)
15-64 years	357 (59%)
64 years	64 (11%)

Table 2: Name of major Fungal Infections in Male & Female population

Name of the Tinea Infections	Male	female	Total
Tinea corporis	80 (25.81)	56 (19.24)	136(22.63)
Tinea cruris	38 (12.26)	12 (4.12)	50 (8.32)
Tinea pedis	22 (7.10)	37 (12.71)	59 (9.82)
Tinea capitis	33 (10.65)	29 (9.97)	62 (10.32)
Tinea fasciae	9 (2.90)	9 (3.09)	18 (3)
Pityriasis. versicolor	43 (13.87)	34 (11.68)	77 (12.81)

Table 3: Maximum frequency of superficial fungal infection was for child group

Tinea capitis	48 (26.67%)
Oral thrush	39 (21.67%)
Tinea corporis	24 (13.33%).

Discussion:

In this study, tinea infection were the most common SFIs, followed by candidal infection, tinea corporis, tinea capitis and pityriasis versicolor and tinea barbae was the least common. Children under 14 years of age appeared to be more susceptible to tinea capitis, which is similar to the results of other regions, including Italy, Croatia, and Austria [17-22]. The high incidence of tinea capitis in the younger population (under14 years) may be a result of the low level of fungistatic fatty acids in younger individuals [23]. Moreover, large families (four to eight children) are quite common in this region, which may possibly result in some neglect (in terms of hygiene standards) on the part of the mother, as she is busy with the maximum frequency was for tinea capitis (n=48, 26.67%) followed by oral thrush (n=39, 21.67%) and tinea corporis (n=24, 13.33%). Here, male and female children were equally affected as 25 (27.78%) female and 23 (25.56%) male children were affected by tinea capitis and 22 male (24.44%) and 17 female (18.89%) children were affected by oral thrush.The sharing of towels, clothing and hair accessories with infected individuals may lead to the spread of SFIs. The spread of infections may also be attributed to the use of unsterilized barbering instruments [23,24]. Tinea pedis is common in adults due to bare foot and excessive use of water. Humidity and temperature are well-known factors affecting fungal penetration through the stratum corneum

of the skin [25]. Our data also suggest that males were affected by different kinds of SFIs more than females and the prevalence was highest in adult males aged between 15 and 64 years. These results are in agreement with those of earlier investigators who also reported a higher prevalence of SFIs in males than females [1,14,16]. Our data provided valuable information on which future efforts can be made to prevent superficial fungal infections in rural areas of the country.

Conclusion: This study clearly shows that SFIs are of concern in both genders and in all age groups. The prevalence of superficial fungal infections are increasing in day by day throughout Bangladesh. The pattern and distribution of SFI in Bangladesh particularly in rural population seems to very high beyond our prediction.

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Original Article

Hypertensive Epistaxis our Experience in Satkhira Medical College Hospital

MZ Islam[1], NP Sanyal[1], QA Ahmed[2], ARMM Haque[3], S Sarkar[4], H Chakrabarty[5], H Rashid[6]

ABSTRACT:

Introduction: Epistaxis is one of the most common emergencies in Otorhinolaryngology. It is usually managed with simple conservative measures but occasionally it is a life threatening condition. Identification of the cause is important, as it reflects the management plan being followed. **Objectives**: To analyze the etiology and treatment methods for patients with hypertensive epistaxis. **Methods:** A retrospective study was done in a tertiary Satkhira Medical College Hospital and some private hospital in Satkhira. The study period was from May 2016 to April 2017. **Results:** A total of 70 hypertensive patients had epistaxis; 60 were males and 10 were females. Regarding treatment methods, our patients required anterior nasal packing. Chemical cautery was sufficient to stop bleeding in 5 patients while electrocautery and posterior nasal packing were performed in 15 patients and in 1 patient respectively. Every patient was treated with antihypertensive drugs. **Conclusion:** Hypertension, the most common etiological factors among the elderly patients in whom etiology was found . Anterior nasal packing was the most common treatment method applied to these patients.

Keywords:

1. Dr. Md. Zahidul Islam, Assistant Prof. ENT,Satkhira Medical College , Satkhira
1. Dr. Narayan Prosad Shanyal, Assistant Prof. ENT,Satkhira Medical College , Satkhira
2. Dr. Qazi Arif Ahmed, Associate Prof. Medicine , Satkhira Medical College, Satkhira
3. Dr. ARM Morshedul Haque, Senior Consultant , ENT, Satkhira Medical College Hospital, Satkhira
4. Dr. Sanjoy Sarkar, Assistant Prof. Cardiology, Satkhira Medical College, Satkhira
5. Dr. Harashit Chakrabarty , Asst. Prof. Dermatology, Satkhira Medical College , Satkhira
6. Dr. Harun Or Rashid, Asst. Prof. ENT, Islami Bank Medical College Hospital, Rajshashi

Introduction

Epistaxis is defined as the bleeding from inside the nose or nasal cavity. It is one of the most common emergencies in Otorhinolaryngology as well as in medical practice, worldwide which often requires admission to the hospital[1]. Its incidence is difficult to assess but it is expected that approximately 60% of the population will be affected by epistaxis at some point in their lifetime, with 6% requiring medical attention [2]. Epistaxis can be classified as anterior and posterior epistaxis based on the site of origin [3]. Anterior epistaxis is more common than posterior epistaxis [4]. It usually arises either from Kiesselbach's plexus, a rich vascular anastomotic area formed by end arteries, or from vein (retrocolumellar vein). As the bleeding site is accessible, anterior epistaxis which occurs more frequently in children and young adults is rarely serious. On the other

hand posterior epistaxis arises from the area supplied by sphenopalatine artery (SPA) in the posterior part of nasal cavity, which is more frequent in elderly people. Usually there is profuse bleeding with difficulty in accessing the site of bleed so it poses challenge in the management. Anterior epistaxis is usually controlled by local pressure or anterior nasal packing while posterior epistaxis often requires posterior nasal packing or arterial ligation.

Epistaxis can be due to both systemic and local factors. Local causes include inflammatory, infective, traumatic, anatomical (deviated nasal septum, septal spur), chemical, or climatic changes, neoplasm, and foreign body. Similarly, the systemic causes of epistaxis are hematological diseases causing coagulopathy, cardiovascular diseases such as hypertension and vascular heart disease, liver disease, renal disease, and anticoagulant drugs. However in majority (80–90%) of patients no identifiable cause is found and is labeled as "idiopathic" [5]. Nose blowing habit, excessive coughing in chronic obstructive pulmonary disease (COPD), straining in constipation and benign prostatic hyperplasia (BPH), and lifting heavy objects are aggravating factors for the epistaxis.

Management of patient with epistaxis at any age group begins with resuscitating the patient, establishing the site of bleed, stopping the bleeding, and treatment of the underlying cause. There is no definite protocol for the management of epistaxis, although various treatment methods are available for the management ranging from local pressure, topical vasoconstrictor, nasal packing, cauterization (chemical/electric), to embolisation or ligation of vessels [6]

Methodology:

A retrospective study was carried out among the admitted patients with epistaxis who were managed in the Department of Medicine and ENT Department in SMCH These patients were received from emergency of different clinic, from outpatient department (OPD), or as a referral from other departments. Patients of all ages were included.

All the patients underwent routine investigations such as complete blood count, haemoglobin level, platelet count, random blood sugar, serum electrolytes, urea, creatinine, urine routine examination, and blood grouping. Coagulation profile such as prothrombin time, and bleeding and clotting time was also performed. Computed tomography (CT) was done in selected cases to rule to neoplasms of nose and paranasal sinuses and the nasopharynx. Additional investigations were ordered based on history and clinical examination about the possible etiology and comorbidity. Blood sample was also sent for crossmatch when indicated. Beside this, other investigations such as chest X-ray, electrocardiogram (ECG) also done.

Intravenous line was established in some patients with wide bore cannula. Management of the patient began with investigations and treatment side by side. Initially the patients were evaluated with anterior rhinoscopy to identify the site of bleeding. Patients who were brought to emergency room with complaint of recurrent episodes of excessive bleeding, on whom there was no active bleeding on arrival to the hospital and anterior rhinoscopy did not reveal bleeder, underwent nasal endoscopic examination to search the site of bleeding which might have been located more posteriorly. Treatment of the patients with epistaxis included conservative or nonsurgical treatment and surgical or interventional treatment. In all cases

antihypertensive drugs started .Other nonsurgical treatment methods included application of topical vasoconstrictors such as oxymetazoline nasal drop, chemical and electric cauterization of the bleeder, and anterior and posterior nasal packing. Surgical treatment methods were the endoscopic electrocauterization of the bleeder. All the patients were initially treated conservatively and surgical treatment was considered only when conservative method failed to control the epistaxis. If the bleeder was accessible on anterior rhinoscopy then the patients were treated either with chemical cauterization with silver nitrate with concentration of 75% or with bipolar electrocautery depending on the surgeon's preference. When the bleeder was found to be located more posteriorly on nasal endoscopic examination bipolar electrocautery was used to seal the vessel. If there was diffuse bleeding or when the bleeder could not be located then the patients used to receive anterior nasal packing. Posterior nasal packing was considered in the case of rebleed in a patient who had anterior nasal pack in situ. Surgical methods were the last resort to control bleeding in patients who had recurrent bleed or whose bleeding could not be controlled with those noninterventional methods.

Medical records of those patients were collected and evaluated for the demographics, cause of epistaxis, anatomical location of bleeding site, and the treatment methods provided. Analysis of data was done using SPSS computer software version 16.

Results

During the study period 70 hypertensive patients with epistaxis were reported to this hospital with age ranging from 25 to 75 years. Out of these patients 60 were males and 10 were females. According to the type of epistaxis based on site of origin 55 (78.57%) patients had anterior epistaxis and 15 (21.43%) patients had posterior type of epistaxis.

Regarding treatment modalities, in all patient were treated with different kind of antihypertensive drugs. conservative nonsurgical method was sufficient to control epistaxis in most (66; 94.28%) of our patients. Among the conservative methods, observation alone without active intervention was carried out in 7 patients. However, 49 patients were treated with anterior nasal packing. Chemical cautery was performed in 5 patients and electrocautery in 15 patients and 1 patients underwent posterior nasal packing.

Anterior nasal pack was kept in situ for 48 hours while posterior nasal pack was removed after 72 hours. Broad spectrum antibiotic was used in patients with nasal packing to prevent infectious complications. All patient were advised for continuing antihypertensive agent and periodic follow up.

Discussion

Patient presenting with epistaxis is frequently encountered in our daily practices. It is common in people of all ages. According to the site epistaxis may be divided into anterior and posterior. Anterior epistaxis occurs more frequently in children and young adults. It is rarely serious as the bleeding point is anteriorly located and is easily identified. Its origin is usually arterial (Kiesselbach's plexus) or occasionally venous (retrocolumellar vein). Posterior epistaxis occurs predominantly in the elderly and the site of bleeding is difficult to access as the site of origin is located more posteriorly so it poses a great challenge to arrest bleeding.

Age related and cardiovascular diseases related angiopathy changes are probably responsible for the prolonged duration of bleeding. In our study, the age range of the patients varied from 25 to 75 years. Elderly people above 60 years of age (24; 28.57%) which is similar to the results of Pallin et al. [5]. Males were affected more often than females with a ratio of 1.6. Similar findings have been noted in other studies [6-8]. Similarly the elderly people commonly have comorbidities such as hypertension and diabetes mellitus which cause degenerative changes in blood vessels making them more fragile which bleed easily on abrupt pressure changes such as straining during micturition and defecation in BPH and constipation respectively; excessive coughing in COPD; and lifting heavy objects. Rhinosinusitis, nasal allergy, temperature changes, and dry heat produce hyperemic nasal mucosa which can bleed while blowing nose or picking nose or with trivial trauma leading to anterior epistaxis [9].

Most of the patients with epistaxis did not have an identifiable [10]. Hypertension was the second most common cause of the epistaxis [11]. Nowadays it is said that hypertension is not the cause of epistaxis but it prolongs the bleeding once it starts because in patients with hypertension there is arterial muscle degeneration that leads to defective muscle layer lacking the power to contract resulting in persistence rather than initiation of bleeding. However, the causative factor that might be responsible for the rupture of vessel is still unknown [12]. Hypertensive patients with epistaxis were found to have uncontrolled hypertension due to cessation of antihypertensive medications and inadequate drug therapy because of infrequent check-up; hence the need of regular blood pressure check-up and compliance to the antihypertensive medications should be emphasized. Patients with epistaxis are anxious which might lead to transient hypertension, as the blood pressure was found to be higher in most patients on arrival to hospital.[12-14]. A variety of treatment methods have been used to control epistaxis which range from nose pinching to ligation of vessels. Method of treatment for epistaxis depends on site, severity, and etiology of bleeding. Treatment modalities can be broadly divided into nonsurgical and surgical approaches. The nonsurgical/conservative modalities include digital nasal compression, topical vasoconstrictor, local cauterization (chemical or electric), and nasal packing (anterior or posterior). If the bleeding point is visible the bleeding site may be sealed either with chemical cautery using silver nitrate, chromic acid, or trichloroacetic acid or with electrocautery using bipolar diathermy. Anterior nasal packing can be done with nasal tampons such as Merocel and ribbon gauze, bismuth iodoform paraffin paste impregnated pack (BIPP), or "(absorbable nasal packing materials)." In a study done by Corbridge et al., Merocel nasal packing was found to be effective in 85% of cases, with no difference between the success rates when compared with conventional ribbon gauze [15]. If the bleeding is profuse and not controlled by anterior nasal packing, posterior nasal packing is done.

Conclusion

Epistaxis is a common emergency condition in Otorhinolaryngology Hypertensive epistaxis is not uncommon. Uncontrolled hypertension causes epistaxis requiring special attention. Effective anthypertensive agents reduces

the chance of bleeding. Conservative or nonsurgical methods were effective to arrest epistaxis in most of the patients. Proper nasal packing is the effective method of controlling epistaxis.

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Original Article

Morphometric Analysis of Mandibular Angle in Relation to Sex in Dry Adult Human Mandible

MM Hoque[1], SA Islam[2], SE Tabirz[3], AHMM Kamal[4], K Khatun[5], MZ Islam[6], S Chatterjee[7]

ABSTRACT:

Introduction: With development and function, the mandibular angle has shown changes in size and shape. A variation in mandibular angle in relation to gender has been observed which is supported by anthropometric studies. The aim of this study was to evaluate any variation in mandibular angle with gender. The study intends to assess the reliability and accuracy of gender determination using mandibular angle as a parameter. **Materials and Methods:** A cross-sectional, analytical type of study was conducted in the department of Anatomy, Dhaka Medical College Dhaka from July 2010 to June 2011. The angle of mandible, determined between a line that followed the tangent passing by two points of greater convexity of posterior margin of ramus and another line that followed the tangent passing by two points of greater convexity of inferior margin of mandible, was measured with the help of goniometer. **Results:** The mean difference in angle of mandible of both side in between male and female were statistically significant ($p<0.001$). **Conclusion:** Anatomical knowledge of this study might be used as an adjuvant forensic parameter to investigation for sex determination.

Key words: Mandibular angle, Goniometer.

1. *Dr. Md. Mesbahul Hoque, Associate Professor, Department of Anatomy, SMC, Satkhira.*
2. *Dr. Syed Amanul Islam, Assistant Professor (Anatomy), Satkhira Medical College.*
3. *Dr. Shams-E-Tabriz Associate Professor, Department of Anatomy, Sheikh Sayera Khatun Medical College, Gopalganj.*
4. *Dr. A.H.M. Mostafa Kamal, Associate Professor, Department of Anatomy, Dhaka Medical College, Dhaka.*
5. *Dr. Khadeza Khatun, Assistant Professor, Department of Microbiology, Sir Salimullah Medical College, Dhaka.*
6. *Dr. Md. Zahidul Islam, Assistant Professor, Department of ENT, Satkhira Medical College, Satkhira.*
7. *Dr. Sutapa Chatterjee, Assistant Professor, Radiology & Imaging, Satkhira Medical College, Satkhira.*

Figure1: Photograph showing the measurement of the angle of the mandible by using a Goniometer.

Introduction

Identification of human remains is an important part of medicolegal practice, where forensic odontology has taken a significant role. Few studies have focused on mandibular angle, its alternations in relation to sex. The inferior border of body meets with the posterior border of ramus and forms angle of mandible which helps in age and sex determination, the angle is everted in male but incurved in

female[1]. The gonial angle can also be a handy tool for sex determination in extreme situations like mass disaster, remains of human dead exhumed and murderous mutilations, missing individuals, etc. However, gonial angle as a tool in forensic odontology has received little attention. The study intends to evaluate any variation in gonial angle with gender. Thus, the study intends to assess the reliability and accuracy of gender determination using gonial angle as a parameter.

Materials and Methods:

One hundred eighty five (ninety male and ninety five female) dried adult human mandibles with complete dentition and intact alveolar margin collected from the Department of Anatomy of Dhaka Medical College, Sir Salimullah Medical College and Shaheed Suhrawardy Medical College, Dhaka were used for this study. The angle of mandible, determined between a line that followed the tangent passing by two points of greater convexity of posterior margin of ramus and another line that followed the tangent passing by two points of greater convexity of inferior margin of mandible, was measured with the help of goniometer [2].

Results:

The mean (±SD) angle of mandible of right side was 112.970±7.680, 123.430±6.860 and the left side was 113.710±6.810, 123.160±6.990 in male and female respectively. The mean difference in angle of mandible between right and left side of male and female found statistically not significant. The mean difference in angle of mandible of both side in between male and female were statistically significant ($p<0.001$) (Table 1).

Table 1: Angle at the right and left side of the mandible in male and female

Angle (degree)			
Sex	Right Mean±SD	Left Mean±SD	P value
Male (n=90)	112.97±7.68 (100.00 132.00)	113.71±6.81 (101.00 131.00)	>0.05ns
Female (n=95)	123.43±6.86 (105.00 137.00)	123.16±6.99 (105.00 134.00)	>0.10ns
P value	<0.001***	<0.001***	
Total (n=185)	118.34±7.68 (100.00 137.00)	118.56±8.35 (101.00 134.00)	>0.10ns

Figures in parentheses indicate range. Comparison between right and left side done by paired Student's 't' test and comparison between sex done by unpaired Student's 't' test, ns = not significant, *** = significant

Discussion

Angle of the mandible in female (123.430±6.860) was higher than that of male (112.970±7.680) in the present study. Rai et al. (2007)[3] showed that the mandibular angle was greater in female (1210) than that of male (1180). Rosa et al. (2006)[4] showed the mandibular angle in male was 118.470±4.86 and in female was 121.820±5.54. According to Sousa et al. (2006)[5], the mean value of the right sided mandibular angle was 127.680 with SD ±6.09 and at the left side the mean value was 128.250 with SD ±6.56. According to Ennes and Medeiros (2009)[6], the angle of the mandible was 125.6(±7.8)0 on right side and 125.7 (±9.2)0 on left side. Nicholson (1985)[7] described the angle was 115.4° with a standard deviation of ±11.0°. Mbajiorgu et al. (1996)[8] described that the mean mandibular angle was 1280 in female and 123.060 in male. The finding of Oguz &

Bozkir (2002)[9] was an average of 120.2°, with a standard deviation of ± 4.7. Marzola et al. (2003)[10] examined the mandibular angle in 120 mandibles, the average value of the angle was 1260 on both sides, with the minimum value was 1080 and the maximum was 1400. Xie and Ainamo (2004)[11] stated that an average value of right side was 122.40 but at the left side was 122.80. There was wide variation among studies regarding mandibular angle which might be due to racial and geographical variations. But this study supports that the mandibular angle was greater in female than that of male.

Conclusion

Mandibular angle has been used as an adjuvant forensic parameter but its reliability is questionable as the mandible does not follow one characteristic pattern. Mandibular angle changes with gender which may be attributed to physiologic function of the mandible. However when evidence is scanty, it can be used for investigation.

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Original Article

Estimation of Serum C-reactive Protein as a Predictive Factor for Spontaneous Stonepassage in Patients with 4 to 8 mm Distal Ureteric Stones.

Haque MM[1], Quddus MR[2], H Zahan[3], Chowdhury TS[4], M Rasiduzzaman[5]

ABSTRACT:

Introduction: Ureteric colic due to stones is a common problems in daily emergency urology practices. Ureteric stone is responsible for about 25% ureteric obstruction and triggers inflammatory changes in the proximal ureter and prevents passage of the stone. Serum C- reactive protein (CRP) was found to be an indicator of ureteral stone outcome. The objective of this study was to measure serum CRP for patients with 4-8 mm distal ureteric stone and use its level as predictive factor for spontaneous passage of stone. **Methodology:** A prospective study was designed on a total of 75 patients (M=40; F=35) who were in the age group 20- 50 years, who presented with ureteral colic due to a solitary unilateral, 4 to 8 mm distal ureteral stone. The patients were selected at the urology OPD of Satkhira Medical College Hospital, Satkhira, Bangladesh from January 2017 to December 2018. The patients were grouped according to spontaneous stone passage. The follow up continued until the stone spontaneously passed, as reported by the patient, or for a maximum period of 4 weeks. **Results:** Patients age, BMI, sex did not show significant difference between the two groups; 31 have spontaneous stone passage (SP), and 44 no spontaneous stone passage (NP). Stone size is significantly higher in the NP their median is 6 mm compared to 4 mm for SP group. CRP is significantly elevated in NP group compared to SP. Stone size and previous history of stone passage and CRP was the only significant and independent predictors of SP (low CRP, low stone size, and positive stone passage history and low CRP predict SP). **Conclusions:** Previous history of stone passage, stone size and CRP are independent predictors for SP. Measuring of serum CRP levels is useful for predicting spontaneous stone passage. Where CRP level is high more aggressive treatment methods such as URS with ICPL or open ureterolithotomy should be considered

Keywords:

1. *Dr. Md. Mozzammel Haque, Assistant Professor(Urology) Satkhira Medical College, Satkhira*
2. *Dr. Md.Ruhul Quddus, Associate Professor (Surgery) Satkhira Medical College ,Satkhira*
3. *Dr. Hasin Zahan, Assistant Professor (Biochemistry) Sir Salimullah Medical College , Dhaka*
4. *Dr. Tajkera Sultana Chowdhury, Junior Consultant(Surgery) Satkhira Medical College Hospital ,Satkhira*
5. *Dr. Md. Rasiduzzaman, Resident Surgeon , Satkhira Medical College Hospital ,Satkhira*

Introduction

In our daily urology practice ureteric stones are common problem. Acute ureteric colic is about 3-5 cases per 1,000 people. Ureteral stone is responsible for about 25% of all urinary tract stones, and 75% of these stones are located in the distal portion of the ureter.[1] Male-female ratio is 2:1 and incidence peaking between age 30 - 60 years in males and 20-40 years in females. The majority of ureteral stone can pass spontaneously.[3]

If the stone diameter is less than 4 mm, spontaneous passage is generally possible and for stones ≤5 mm independent passage rate 50-68%. [4, 5] A stone's composition is one of the factors together with location, size, degree of impaction, shape, surface contour and other considerations that may influence choice of treatment.[6] CRP increase as a result of inflammatory responses and are clinically used as indexes of the degree of inflammation. Ureteric obstruction due to stone triggers inflammatory change in the proximal ureter and prevents passage of the stone,[8] The objective of this study was to measure CRP for patients with 4-8 mm distal ureteric stone and use its level as predictive factor for spontaneous stone passage.

Methodology

A prospective study was designed on a total of 75 patients (M=40; F=35) who were in the age group (20- 50) years, who presented with ureteral colic 4 to 8 mm solitary distal ureteral stone. Patients were grouped according to spontaneous stone passage. The patients were selected in the urology OPD of Satkhira Medical College Hospital, Satkhira, starting from January 2017 to December 2018.

Exclusion criteria

UTI, Patients who required early intervention, multiple ureteral stones, CKD, congenital urinary anomalies, previous ureteral surgery, malignancy and pregnancy.

A total of 75 patients with distal ureteric stone 4-8 mm involved in the study and grouped according to spontaneous stone passage, (SP) (31 patient) and no spontaneous stone passage (NP) (44 patient). Serum. C-reactive protein was measured for all patients for its potential predictive value for spontaneous stone passage at a follow up of 4 weeks. CRP values measured upon initial presentation (before use of NSAIDs as these drugs reduce CRP). The reference range of CRP: 0- 10 mg/L, level above 10 mg/L were considered as high. All patients were subjected to history taking, XRay KUB, USG of KUB to diagnose stone size and site and serum CRP estimation, and re-evaluated weekly with plain KUB X ray and USG of KUB. Low dose NCCT is better, but avoided due to cost. The Follow up continued until the stone spontaneously passed as reported by the patient or up to maximum period of 4 weeks. Conservative treatment was given in all patients (Ketorolac 10 mg BD, Tamsulosin 0.4 mg daily and Tiemonium 50 mg TDS) and all patients were instructed to take 3-4 L. water/day. Patients who failed to expel stone spontaneously within 4 week of follow up underwent URS with ICPL.

Results

Demographic data

Age, BMI, and sex did not show significant difference between the two groups (31 SP and 44 NP) which mean demographic data are not confounder in this study(Table 1).

Table 1: Demographic data by stone passage.

variable	SP	NP	P Value
Number	31	44	
Age	36.6±8.8	35.7±9.3	0.686 a [ns]
BMI	28.1±4.4	30.2±4.4	0.051[a] [ns]
Sex	Male 18 (58.06%)	23 (52.27%)	0.643[b]
	Female 13 (41.94%)	21 (47.72%)	[ns]

aindepended T tes t, b Chi square test

Stone size

Stone size is higher in NP group , their median is 6 mm compared to 4 mm in SP group (Table 2.)

Table 2: Stone size from each group.

variable		SP	NP	P Value
Number		31	44	
Stone size	(Median, IQR)	4(4-5)	6(5-7)	<0.001 [Sig]
Stone groups	4mm	20(64.5%)	3(6.8%)	<0.001 [Sig]
	5mm	7(22.5%)	9(20.4%)	
	6mm	3(9.6%)	13(29.5%)	
	7mm	1(3.2%)	10(22.7%)	
	8mm	0(0%)	9(20.4%)	

Mann Whitney U test, IQR: interquartile range (25% -75%)

CRP

CRP is significantly elevated in NP group compared With SP (Table 3).

Table 3: CRP from each group

variable	SP	NP	P Value
Number	31	44	
CRP (mean±sd)	16.8±4.8	27.5±8.9	<0.001 [sig.]

Predictors of SP

Stone size, CRP and previous history of stone passage was the only significant and independent predictors of SP (Table 4).

Discussion

Urolithiasis is the third most common problem of urinary tract, exceeded only by UTI and BPH and Ca Prostate. [7] The majority of ureteral stones cause colic that is severe and rapid in onset.

Table 4: Predictors of NP

Univariate analysis			Multivariate analysis			
Predictors	OR	95% CI	P value	Adjusted OR	95% CI	P value
Age	0.991	0.946-1.039	0.71	-	-	-
Sex	1.048	0.412-2.662	0.922	-	-	-
BMI	1.114	0.998-1.243	0.054	-	-	-
Stone size	5.218	2.516-10.823	<0.001	7.464	2.454-22.7	0.001
CRP	2.579	1.514-4.393	<0.001	2.418	1.334-4.381	0.004
No H/O stone passage	2.887	1.054-7.908	0.039	2.216	1.645-6.342	0.013

Logistic regression OR: odd ratio, CI: confidence interval

patients to seek urgent urologic care [9]. In this study, serum CRP level was measured in patients with ureteric stone as a new parameter to assist in making a decision concerning intervention versus observation. BMI, age, sex did not show significant difference between two groups (SP and NP). Distribution of stone passage in the study reveals SP in 31 patients (41.3%) and NP in 44 patients (48.67%). In the study the likelihood of a distal ureteral stone passage is dependent on CRP, stone size and H/O previous stone passage. Several studies showed high rates of spontaneous passage for distal ureteral stones smaller than 5 mm. [11,12] In our series all patients had distal ureteral stones, stone size was a significant predictor of SP on univariate analysis, which was confirmed by multivariate analysis, median stone size for SP 4mm and for NP 6mm. Serum CRP is another marker that has been investigated in some recent series as a potential predictive factor for SP in patients with ureteral stones.[13] In a recent retrospective study Park et al examined the relationship of spontaneous passage rate of ureteral stones smaller than 8 mm with the CRP level and the neutrophil count.[10] A total of 187 patients who were diagnosed with ureteral stones less than 8 mm in size and were managed consecutively. The ureteral stone passage rates of the low serum CRP level group, the medium serum CRP level group, and the high serum CRP level group were 94.1%, 70% and 50.0% respectively, Aldaqadossi studied 235 patients receiving Medical expulsion therapy. Stone expulsion within 4 weeks was recorded in 129 patients (54.9%), while 106 patients (45.1%) underwent ureteroscopy for stone extraction. CRP was significantly different in the two groups: stone expulsion was significant when low serum CRP levels (16.45+2.58) compared to those who failed (39.67+6.30). Another study showed a cut-off point for CRP of 28 mg/L achieved optimum sensitivity (75.8%) and specificity (88.9%) for determining for decision for intervention .[14]

Conclusion

CRP, stone size, previous H/O stone passage are independent predictors for SP. Measuring serum CRP levels is useful for predicting whether spontaneous ureteral stone passage will be successful. More aggressive treatment methods such as URS or open uneterolithotomy should be considered when CRP level in high.

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Original Article

Emergency Neonatal Surgery in South-West Corner of Bangladesh

SA Sayeed[1], KH Rahman [2], SR Pervin [3], A Sattar[4], H Pervin[5], S Chatterjee[6]

ABSTRACT:

Globally the major causes of neonatal deaths are birth asphyxia, prematurity and severe infections. Little is known about the burden of neonatal surgical conditions on the overall neonatal mortality. With better understanding of neonatal physiology and improvements in diagnostic facilities and neonatal intensive care units (NICU), the outcome of neonatal surgery has improved in developed countries. In developing countries, however, neonatal surgery is problematic, particularly in the emergency setting. This study was undertaken to determine the burden and types of surgical problems encountered in the neonatal period, their outcome and challenges encountered in a remote area of a developing country where there is no availability of NICU. A retrospective analysis of 159 neonates who had emergency surgery over a 4-year period in different hospital and clinics in Satkhira, a district town at the south west corner of Bangladesh was undertaken. Emergency surgery represented 69.73% of surgical procedures in neonates in the hospital. 51.2% were delivered at home. The median weight was 2.1 kg (range 1.5-4 kg). The major indications for surgery was intestinal obstruction 101(63.52%), Among the causes of intestinal obstructions rate of anorectal malformations in highest 43(13.86%) and in 14(8.8%) complicated omphalocele or gastroschisis. Twenty four(15.09%) cases are of superficial abscesses. Five patients (3.14%) required surgery for ruptured neural-tube defects. A colostomy was the commonest procedure (44, 27.67%). Fourteen abdominal-wall defects were closed by various methods (fascial closure 9, skin closure 5). Thirty-one (19.49%) procedures were performed using local anesthesia. Fifty one patients (60.78%) developed postoperative complications (infections 31, colostomy complications 9, intestinal obstruction 3, anastomotic leakage 3, anal stenosis 2, paralytic ileus 2, recto-urethral fistula 1). Thirty one (19.49%) neonates were expired, 66% due to overwhelming infection with septisemia, 28% respiratory insufficiency, and 4.3% to multiple anomalies. Other factors considered to have contributed to morbidity and mortality were late referral and presentation and a lack of NICUs. Thus, emergency neonatal surgery is attended by high morbidity and mortality in our environment at the present time. Early referral and presentation and provision of NICUs should improve the outcome.

Keywords : Newborn • Emergency surgery • Outcome • Late referral

1. *Dr. Shaik Abu Sayeed, Asst. Prof . Paediatrics Surgery, Satkhira Medical College*
2. *Prof. Dr. Kazi Habibur Rahman, Prof . Paediatrics Surgery, Satkhira Medical College*
3. *Dr Sayed Ruksana Pervin, Asst. Prof . Paediatrics, Satkhira Medical College*
4. *Dr. Md. Abdus Sattar, Asst. Prof . Paediatrics Surger Pabna Medical College*
5. *Dr. Hasina pervin , Asst . prof. Anaesthesla , Uttara Womens Medical College, Dhaka*
6. *Dr. Sutapa Chatterjee, Junior Consultant Radiology, Satkhira Medical College*

Introduction

In developed countries, outcome of neonatal surgical cases is favourable because of availability of antenatal diagnosis, improved surgical skills and technologies, sophisticated neonatal intensive care unit, availability of total parenteral nutrition and adequate staff. [1-5],[6]. In developing countries, however, neonatal surgery is still fraught with a lot of problems including late presentation and lack of medical facilities and human resources, [7],[8] thereby, making newborn surgery to be associated with unacceptably high morbidity and mortality. Due to the burden of other neonatal and childhood diseases in developing countries, neonatal surgery is often considered low priority in healthcare budget planning and allocation. The aim of this study was to provide an insight on the burden and types of surgical problems encountered in our setting.

Patients and methods

In a retrospective study from 2014 to 2018, 159 neonates aged 28 days or less who had varying types of emergency surgery were identified from the operation register. During the same period, 69 neonates had elective surgical procedures. Here most newborns with surgical problems are managed in the general pediatric surgical ward, which has no facilities of neonatal intensive care unit (NICU). Anesthetists with particular experience in neonatal anesthesia were often unavailable. Evaluation of neonates with surgical problems was largely clinical, supported by biochemical (electroytes, urea, glucose, and bilirubin estimations) and simple hematologic and radiologic (plain and contrast X-rays) investigations.

Results

Emergency surgery represented 69.73% (159/69) of the surgical procedures in neonates in our study.

The median weight was 2.1 kg (range 1.5-4 kg). Among 159 neonatal surgical conditions congenital anomalies represents 131(82.38%) cases. In 101 (63.52%) infants operations were performed for intestinal obstruction (Table 1). Of these, anorectal malformations (ARM) were the cause in 43(42.57%), 13 of whom had a transverse colostomy as the initial management for high ARM. There were 22 anoplasties for low ARM. Ten neonates presenting with obstructed inguinal [2] and umbilical hernias [1] had hernia repair, and 1 of these required orchidectomy for gangrene of testes.

Five babies required intestinal resection for varying types of jejunoileal atresia and 8 underwent a duodenoduodenostomy for duodenal atresia. Two type-I duodenal atresia was treated with duodenotomy with excision of membrane. In 2 babies duodenal obstruction was due to malrotation with Ladd's Band which were treated by Ladd's procedure. One was due to pre-duodenal portal vein, a very very rare anomaly and a duodenoduodenostomy was done. Twenty seven neonates with Hirschsprung's disease (HD) had a transverse colostomy and multiple biopsy for confirmation of HD as initial management. One with total colonic HD had an ileostomy. Two neonates with HD had got perforation of ileum and exteriorization of perforation site was done. Another neonate with HD had got caecal perforation for which a caecostomy was done as initial management after proper peritoneal toileting. The perforations were possibly due to huge distension of gut with backflow.

Fourteen neonates (8.8%) had closure of

anterior abdominal wall defects (AWD): 5 ruptured omphalocele, 6 gastroschisis (GS), and 3 small intact omphalocele. Two patients with ruptured exomphalos and 2 with GS required intestinal resection for gangrene in 2, perforation in 1, and 1 stenosis in addition to closure. In 5 babies, excision and closure of ruptured meningomyelocele was performed

24 superficial abscesses required incision and drainage.

Overall 128 (80.5%) of the procedures were per- formed with the patient under general anesthesia (GA), 31 (19.49%) under local anesthesia (LA).

The overall mortality was 28.93% (Table 2). Of the 46 babies who died, 28(60.86%) died from overwhelming infection. Five (10.86%) died following aspiration pneumonia, 2(4.34%) from cardiac arrest, 2(4.34%) from hypothermia and 9(19.56%) from respiratory insufficiency.

Most patients died of repair of gastroschisis (83.33%). This high rate of mortality was possibly due to non availability of NICU, lack of ventilator. The patients did well upto 8-10 th POD but became worse thereafter due to respiratory nsufficiency or septisemia.

The 2nd most common disease which caused post operative death was intestinal atresia(80%). The high rate of mortality was due to dissimilar anastomosis causing slow passage of contents through very narrow lumen of most of ileum and whole of colon and thereby causing stasis , abdominal distension and ultimately causing septisemia.

Discussion

Congenital abnormalities accounted for 82.39% of all neonatal surgical conditions. This was similar to the findings in other studies. [9]

The most common surgical conditions in the newborn involve the gastrointestinal tract. This was the finding in this study and in other studies. The commonest congenital abnormalities requiring surgery was intestinal obstruction(63.52%), amongst intestinal obstruction surgery of anorectal malformation was the highest. [9],[10].

The overall mortality in neonates with surgical condition in this study was 28.93%. This rate is similar to other authors (30.5% to 42.3%). Infection was the commonest postoperative complications and the commonest cause of death as well just like in other studies. [7-9].

Significantly, more deaths occurred in preterm babies and those babies delivered outside the hospital. Mortality generally is known to be higher in preterm babies because of the immaturity of all physiologic functions. Babies delivered outside the hospital need to travel several hours to get to a specialist hospital that offers neonatal surgical services during which time the baby's condition may deteriorate, leading to increased operative risk and mortality. Closure of Gastroschisis and ruptured omphalocoele, Laparotomy for intestinal resection and anastomosis especially in disparity in anastomotic segments in intestinal atresia , colostomy and multiple congenital anomalies were associated with high mortality, a finding similar to that in another study. [9]

Over 75% of the babies were delivered outside the hospital and had to be transported to the unit without resuscitation. The result is that these children presented late when metabolic and medical conditions would have set in to compound the surgical problem. Lack of adequate staff and appropriate facilities like ventilators and total parenteral nutrition also played a role. Delay in presentation, shortage of personnel and

inadequate facilities as being the major problems associated with management of neonatal surgical patients were also identified in other studies. [3],[9]. Early recognition and immediate treatment of surgical conditions in the newborn infant is, therefore, very important.

Table 1
Post operative complication in 51neonates

Post operative complication	No of case	Percentage
Infection	31	60.78
Colostomy complication	9	17.64
Intestinal obstruction	3	5.88
Anastomotic leakage	3	5.88
Anal stenosis	2	3.92
Paralytic ileus	2	3.92
Rectourethral fistula	1	1.96

Table 2
Mortality in 46 neonates

Type of Disease	No of case	No of death	Percentage
Gastroschisis	06	05	83.33
Omphalocele	08	02	25
Hirschsprung Disease	27	10	37.03
Intestinal Atresia	05	04	80
Anorectal malformation (High variety)	13	04	30.76
Anorectal malformation (Low variety)	22	05	22.72
Bands and adhesion	02	01	50
Ruptured Myelomeningocele	05	03	60
Meconeum Ileus	08	03	37.5
Ladds band	02	01	50
Duodenal atresia	09	03	33.3
Trauma	04	02	50
Abscess	13	02	15.38
Obstructed inguinal hernia	02	01	50

Table 3
Cause of death

Cause of death	No of death	Percentage
Overwhelming Infection or septisemia	28	60.86
Respiratory Insufficiency	9	19.56
Aspiration pneumonia	5	10.86
Cardiac arrest	2	4.34
Hypothermia	2	4.34

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Original Article

Non Communicable Medical Disease and Death Pattern Among Patient Admitted in the Department of Medicine in a Medical College Hospital in Southern Part of Bangladesh

MA Kabir[1], QA Ahmed[2], SS Hossain[3], BR Dutta[4], A Bakar[5], AKAM Haque[6]

ABSTRACT:

Background: The epidemic of non-communicable diseases in low and middle income countries is widely recognized as the next major challenge to global health. An understanding of epidemiological trend in hospital admission, disease profile and death pattern is very important for providing health care services, improving existing services, promoting primary and secondary prevention of the diseases and mortality. **Objectives:** To evaluate the disease and death pattern of patient admitted in the department of medicine, Gazi Medical College Hospital, Khulna from January 2016 to December 2017 in two calendar year time duration. **Study design:** Retrospective observational study. **Methods:** Primary diagnosis on discharge or death, mortality rates, were recorded and analyzed retrospectively over the period from June 2016 to July 2017 for patients admitted in the department of medicine and analyzed according to the age, gender and systems involved. **Results:** Total 2030 patients were admitted during the study period of which among them 1224(60.30%) were male and 806(39.70%) were female and 1431(70.49%) from urban area and 599(29.51%) from rural area. Cardiovascular disease included 587(28.92%) patients, endocrine diseases included 386(19.00%), kidney diseases included 329(16.20%) patients, respiratory diseases included 299(14.72%) patients, neurological diseases included 268(13.20%) patients, hepatic disease included 94(4.63%) patients, cancer included 49(2.42%) and poisoning included 18(0.90%) patients. Among them total 149(3.66%) patient died, of which cardiovascular diseases 45(30.20%), endocrine diseases 7(4.70%), kidney diseases 16(10.74%), respiratory diseases 9(6.04%), neorological diseases 47(31.54%), hepatic diseases 8(5.37%), neoplastic diseases 16(2.42%) and poisoning 1(0.67%). **Conclusion:** This retrospective observational study will help us to get an understanding of disease pattern and causes of death in large part of southern Bangladesh and will enable us to promote health education, improve prevention and apply appropriate health care.

Key word: Non-communicable diseases (NCDs).

1. *Dr. Muhammad Ashraful Kabir, Asst.Professor, Department of Medicine, Gazi Medical College,Khulna.*
2. *Dr. Qazi Arif Ahmed, Assoc.Prof.Medicine , Satkhira Medical College , Satkhira*
3. *Dr. Shaikh Sharafat Hossain, Registrar, Department of Medicine, Gazi Medical College, Khulna.*
4. *Dr.Bappa Raj Dutta, Medical Officer,250 Bedded Shahid Sheikh Abu Naser Specialized Hospital, Khulna.*
5. *Prof. Dr. Abu Bakar, Head of the Department of Medicine, Gazi Medical College, Khulna.*
6. *Dr. AKM Akramul Haque Tarik, Associate Professor, Department of Psychiatry, Dinajpur Medical College, Dinajpur.*

Introduction

Non-communicable diseases (NCDs) in low and middle income countries can no longer be ignored due to prevention and control of infectious diseases[1,2]. Worldwide there is a growing burden of non-communicable diseases (NCDs) including cardiovascular diseases, chronic lung diseases, diabetes and cancer along with a projected rapid shift from communicable diseases to NCDs as the dominant causes of morbidity and mortality in lower and lower middle income countries[3,4]. The disease burden of older adults in lower middle income countries has not been sufficiently studied [5].

Morbidity and mortality among hospital inpatient are merely estimated in the developing countries due to difficulties in obtaining data. Never the less useful information can easily be obtained from period review of morbidity and mortality in medical institutions as it reflects what is occurring in a community[6]. Such understanding of epidemiological trend in hospital admission is critical for health care planning and appropriate resource allocation[7,8]. Hospital death records statistics are considered reliable and used all over the world [9]. Moreover evaluation of record of hospital admission and death pattern gives an insight to the illness and fatality in the community. Populations around the world are ageing, with the most dramatic increases in the number of older adults occurring in low and middle income countries[10].

Khulna, one of the major division of Bangladesh situated in the southern part of Bangladesh surrounded by other major cities of the division and Gazi Medical College Hospital being located at the centre receives patients from wide area, so such study from the hospital record book gives us a clear understanding about the disease burden and death pattern in a large part of Bangladesh and help making decision about promoting health service and preventing disease of the region.

The aim of this study was to clarify the spectrum and characteristics of NCDs in southern part of Bangladesh by analysing Gazi Medical College Hospital's data. The results could provide insight into the aetiology of NCDs and aid in the development of evidence-based clinical guidelines for preventing and curing NCDs.

Patients and Methods

This was a retrospective observational study among 4060 patients in Department of Medicine, Gazi Medical College Hospital, from January 2016 to December 2017 in two calendar year time duration.

Data were collected from hospital register, patient case file record, death certificates. Data included total number of admission, age, gender, provisional diagnosis and cause of death. Final diagnosis was based on final assessment by the department on the basis of the available clinical, radiological and laboratory data. The causes of death were determined by clinical judgment. In this study, the unit of analysis was hospital episode and descriptive statistics were used for analysis. Results were reported using descriptive statistics (Microsoft Excel; Microsoft Corporation) and expressed as mean ± standard deviation (SD) or percentage (%) where appropriate.

Results

Total 2030 patients were included during the study period. Among them 1224(60.30%) were male and 806(39.70%) were female.

Admitted patients were 1431(70.49%) from urban area and 599(29.51%) from rural area. Age group of 21-30 years

included 49(2.41%), 31-40 years 91(4.48%), 41-50 years 258(12.71%), 51-60 years 366(18.03%), 61-70 years 585(28.82%) 71-80 years 528(26.01%) and more than 80 years 153(7.54%).

Cardiovascular disease included 587(28.92%) patients of hypertension, ischaemic heart diseases, cardiomyopathies, valvular heart diseases and others. Endocrine diseases included 386(19.01%) patients of diabetes, thyroid disorders and others. Kidney diseases included 329(16.20%) patients of acute renal failure, chronic renal diseases and others. Respiratory diseases included 299(14.72%) patients of bronchial asthma, chronic obstructive pulmonary disease (COPD) and others. Neurological diseases included 268(13.20%) patients of cerebrovascular diseases (CVD), Parkinson diseases and others. Hepatic disease included 94(4.63%) patients of cirrhosis of liver and others. Different cancers included 49(2.42%). Poisoning of different substances included 18(0.93%) patients.

Diseases	Number	Percentage
Cardiovascular diseases	587	28.92%
Endocrine diseases	386	19.01%
Kidney diseases	329	16.20%
Respiratory diseases	299	14.72%
Neorological diseases	268	13.20%
Hepatic disease	94	4.63%
Neoplastic diseases	49	2.42%
Poisoning	18	0.93%
Total	2030	100%

Total 149(3.66%) patients died during study period from different diseases. Deaths from different diseases were cardiovascular diseases 45(30.20%), endocrine diseases 7(4.70%), kidney diseases 16(10.74%), respiratory diseases 9(6.04%), neurological diseases 47(31.54%), hepatic diseases 8(5.37%), different cancers 16(2.42%) and poisoning 1(0.67%).

Discussion

Non-communicable diseases (NCDs) are chronic conditions that cause death and impaired quality of life. These diseases result from prolonged exposure to causative agents, which are associated with personal behaviors, environmental factors and genetic influence. Non-communicable diseases (NCDs) are the leading cause of functionary impairment and death worldwide. The results of this study found gender differences; 1224(60.30%) were male and 806 (39.70%) were female. Males are more likely to die from NCDs than women. Males are more likely to be hospitalized for NCDs than females. These results bring forth the concept of gender inequalities in health which has attracted attentions from diverse disciplines[11,12].

The experience of the developed countries demonstrates that prevention and control of NCDs risk factors today will have significant health and economic returns in the reduction of future burden of diseases. However, awareness, case detection, and management on NCDs or their risk factors are low in developing countries[13].

In this study 2030 consecutive adult admissions from a large private medical college hospital in southern part of Bangladesh, cardiovascular disease takes a major share 587(28.92%) as a NCDs. Goryakin et al[14], studied the contribution of urbanisation to NCDs in 173 countries and found that when shifting from rural to urban areas, the average body mass index, total cholesterol level and systolic blood pressure increased, demonstrating that high urbanization increases the occurrence of cardiovascular

and circulatory diseases, which is in consistent with this study.

In the current study, endocrine diseases; diabetes mellitus was found to be around 386(19.01%) which is the second most common NCDs in the study. Cooper RS et al. showed that both Type 1 and Type 2 diabetes are increasing and cardiovascular disease is the leading cause of death in hospitalized diabetic patients[15]. In addition, the frequency of kidney diseases was 329(16.20%). Because of more rapid pace of modern life, more sedentary lifestyle, exposure to nephrotoxic substances, diabetes and undiagnosed hypertension may be the causes of kidney diseases. According to the 2010 Global Burden of Disease study that ranked the causes of death worldwide in 1990 and 2010, chronic kidney diseases climbed the list from 27th to 18th position over two decades.

With regard to respiratory diseases; chronic obstructive pulmonary diseases (COPD) and asthma, the record showed 299(14.72%) cases. Previous studies have concluded that the incidence of respiratory diseases is increasing, likely due to ambient air pollution and tobacco use, resulting in tremendous threats to respiratory health.

In present study, neurological diseases included 268(13.20%) patients. Developing countries, including Bangladesh are passing through a phase of epidemiological transition with increasing burden of NCDs consequent to transformation of scenario with improvement of health care services in preventive and promotive domains. Among the NCDs, neurological disorders form a significant proportion of global burden of disease. Two important documents published by World Health Organization (WHO) and World Federation of Neurology bring to forefront the public health challenges posed in dealing with neurological disorders particularly in the developing countries with limited resources. It is crucial to determine through neuroepidemiological approach the magnitude and pattern of neurological disorders in Bangladesh to facilitate planning and prioritizing health needs at the local, regional and national levels of health care delivery system with necessary human resources, development of infrastructure, to provide accessible and affordable medical care with allocation of requisite funds to fulfill these objectives.

Chronic liver disease occurs throughout the world irrespective of age, sex, region or race. Cirrhosis is an end result of a variety of liver diseases. Global prevalence of cirrhosis from autopsy studies ranges from 4.5% to 9.5% of the general population. In present study, hepatic disease included 94(4.63%) patients which is similar with above findings. Regarding cancer there are 13 to 15 lakh cancers patients in Bangladesh,25 with about two lakh patients newly diagnosed with cancer each year and this study found 49(2.42%) patients of different cancer diseases.

Inpatient mortality was 149(3.66%) in present study and major contributors were and cardiovascular and neurological. According to WHO, about 46% of global diseases and 59% of the mortality is because of chronic diseases and almost 35 million people in the world die of NCDs.26 Non-communicable diseases responsible for around 51% annual mortality in Bangladesh as a large number of people are suffering from hypertension, lung diseases, cancer and diabetes.

Our study has several limitations. Diagnostic resources were limited so many diagnoses were based on clinician's

judgment using available evidence. Primary diagnoses were considered but older patients may have multiple co-morbidities which were not captured by this approach. Analysis was restricted to first admissions and thus may have under estimated mortality which may be more common in readmitted patients. We were unable to prevalence of NCD risk factors.

Conclusion

The pattern of NCDs inpatients from this medical college hospital exhibited the condition and spectrum of NCDs in southern part of Bangladesh to a certain extent. The present assessment revealed that an increasing trend of NCDs over the study period and its emergence as a public health problems. Therefore, there is a population-based need for nation-wide increasing awareness among the population and also developing the medical facilities to address the increasing burden of these diseases.

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Original Article

Elbow Carrying Angle in Adults: A Radiographic Study

S A Islam[1], A Afroze[2], S Farjan[3], S Sharmin[4], M A Kabir[5], M Ferdous[6], M Hasanuzzaman[7], S Akter[8]

Introduction: The long axis of the fully extended ulna makes the carrying angle with the long axis of the humerus. This carrying angle helps keeping the forearm away from the body when something is carried. **Objective:** To evaluate the normal elbow carrying angle by radiographic examination in both sexes. **Materials and Methods:** This cross-sectional type of descriptive study was conducted in the department of Anatomy; Rajshahi Medical College from July 2012 to June 2013 which includes 50 respondents as sample purposively. Carrying angle was measured on the radiograph of both side of same individual with manual goniometer. **Results:** The carrying angle ranged from 157° to 173° with a mean of 163.93° ± 3.186°; 164.48° ± 3.469° in males and 163.38° ± 2.840° in the females; 163.76° ± 3.298° on right side and 164.10° ± 3.394° on left side; by radiological method. **Conclusion:** This study demonstrated that the mean carrying angle difference between the sexes and sides was not statistically significant ($p>0.05$). The study helps the orthopedic surgeons to manage elbow disorders, to evaluate elbow reconstruction and to correct cubitus varus & valgus deformity of the elbow.

Key Words: Carrying angle, elbow joint, radiographs and goniometer.

1. *Dr. Syed Amanul Islam, Assistant Professor (Anatomy), Satkhira Medical College*
2. *Prof. Dr. Akhtari Afroze, Head of Anatomy Department, Rajshahi Medical College*
3. *Dr. Sumaya Farjan, Assistant Professor (Anatomy), Khulna City Medical College*
4. *Dr. Shahin Sharmin, Lecturer (Anatomy), Rajshahi Medical College*
5. *Dr. Md. Ashraful Kabir, Lecturer (Anatomy), MAG Osmani Medical College, Sylhet*
6. *Dr. Mokerroma Ferdous, Lecturer (Biochemistry), Sir Salimullah Medical College, Mitford, Dhaka*
7. *Dr. Md. Hasanuzzaman, OSD-Study Attachment, Dhaka Medical College*
8. *Dr. Shamima Akter, Lecturer (Community Medicine), Satkhira Medical College*

Introduction

The long axis of the fully extended ulna makes the carrying angle with the long axis of the humerus [1]. This carrying angle helps keeping the forearm away from the body when something is carried, such as a pail of water. The carrying angle opens laterally and ranged from 155° to 180° [2,3]. Carrying angle is present only in the primate species of apes and humans. The evolution of carrying angle in human increases the manual precision of upper limb [4]. The Carrying angle may change with skeletal growth [5,6].

This valgus angulation is caused by the trochlea which extends farther distally

than the capitulum and the medial edge of the trochlea projects roughly 6 mm beyond its lateral edge and also caused by the superior articular surface of the coronoid process which is set obliquely to the long axis of the shaft of ulna [4]. Increasing this valgus angulation may be the cause of non-traumatic ulnar neuropathy due to decreased conduction of the nerve [7].

Materials & Methods:

This cross-sectional type of descriptive study was conducted in the department of Anatomy; Rajshahi Medical College from July 2012 to June 2013 which includes 50 respondents as sample purposively. Adults of both sexes, age ≥18 years were considered for the study. Individuals with history of fractures, tumours or surgery, sequela of traumatic injuries and presence of congenital deformity of the upper limb and unwilling to participate were excluded.

Antero-posterior radiographs of elbow joint of both sides were taken in a comfortable lying position where the elbow would be fully extended and the forearm and hand would be in supination. Radiograph with overlapping forearm bones, and overlapping of the radial head on the capitulum were also excluded.

Carrying angle was measured on radiographs of both sides using the method described by Beals [8]. On the radiograph, two mid points were marked on the distal humerus, one at distal metaphysis and the other in the distal third of the diaphysis. Line was drawn through the points passing along the mid-axis of the lower third of humerus. Two mid points were marked on ulna, one at the level of radial tuberosity and other at the most proximal ossification of the ulna. Line was drawn through the points of ulna.

The pivot of the goniometer was placed on the intersecting point of the two lines and the arms of the goniometer along the lines hence the device give the angle between the two lines (Fig. 1).

Observation and Results:

Among the 50 respondents male female ratio was 1:1. Mean age of the participants were 33.78 ± 8.96 years, ranged from 20-56 years.

Table:1 Radiographic measurement of carrying angle, Sex difference

Sex (N)	Side (N)	Mean ± SD	Paired T-Test	Ave. CA by Gender			Ave. CA on Radiograph
				Mean ± SD	T-Test (unpaired)	Range	Mean ± SD
Male (25)	Right (25)	164.28° ± 3.846°	[illegible]	164.48° ± [illegible]	[illegible]	[illegible]	[illegible]
	Left (25)	164.68° ± 3.338°	[illegible]				
Female (25)	Right (25)	163.24° ± 2.619°	[illegible]	[illegible]		[illegible]	
	Left (25)	163.52° ± 3.417°	[illegible]				

On radiograph the mean carrying angle in males on right side was 164.28° ± 3.846° and on left side was 164.68° ± 3.338° (Table:1); the difference between the sides was statistically not significant, (p>0.05). And the mean carrying angle in females on right side was 163.24° ± 2.619° and on left side was 163.52° ± 3.417° (Table:1); likewise the difference was statistically not significant between the sides by the radiographic method in the females, (p>0.05).

Table:2 Radiographic measurement of carrying angle, Side difference

Side (N)	Sex (N)	Mean ± SD	Unpaired T-Test	Ave. CA by Side		
				Mean ± SD	Z-Test	Range
Right (50)	Male (25)	164.28° ± 3.846°	[illegible]	163.76° ± 3.298°	[illegible]	[illegible]
	Female (25)	163.24° ± 2.619°				
Left (50)	Male (25)	164.68° ± 3.338°	[illegible]	[illegible]		[illegible]
	Female (25)	163.52° ± 3.417°				

The mean carrying angle on radiograph on right side in both sexes was 163.76° ± 3.298°, in the males was 164.28° ± 3.846° and in females was 163.24° ± 2.619° (Table:2). The difference between carrying angles of two sexes on right side was not

significant statistically (p>0.05).

The mean carrying angle on radiograph on left side in both sexes was 164.10° ± 3.394°, in the males was 164.68° ± 3.338° and in females was 163.52° ± 3.417° (Table:2). The difference between carrying angles of two sexes on left side was not significant statistically, (p>0.05).

In both sexes the mean carrying angle on radiograph on right side was 163.76° ± 3.298° and on left side was 164.10° ± 3.394° (p>0.05). So side difference of carrying angle on radiograph was not statistically significant. On the radiograph the carrying angle was ranged from 157° to 173°, on right side and 158° to 171°, on left side.

The mean carrying angle on radiograph in both sexes was 163.93° ± 3.186°. The sample data were distributed normally; most values were between 160° and 165°, with only a few >170°. The mean carrying angle in male was 164.48° ± 3.469° and in female was 163.38° ± 2.840° (Table:1). The difference between males and females carrying angle was statistically not significant, (p>0.05). On the radiograph the carrying angle was ranged from 157° to 173°, in male from 158° to 173°, in female from 157° to 169°.

Discussion:

A number of investigators have tried to provide information about the standard values of the carrying angle. They tried to distinguish it according to age, sex, sides of the body, anthropometric characteristics, and different measuring methods. Those investigations delivered considerably variable results most likely due to differences in the definition of the angle and the variations in the measuring methods [9]. In the present study complementary obtuse angle was used as carrying angle.

In the present study, the mean carrying angle was 163.93° ± 3.186° by radiological method; 164.48° ± 3.469° in males and 163.38° ± 2.840° in the females; 163.76° ± 3.298° on right side and 164.10° ± 3.394° on left side: there were no statistically significant difference between the mean carrying angle by sexes and sides (p>0.05).

This study revealed that there was no statistically significant difference in carrying angle between male and female sexes. This finding was in a general agreement with that of other studies that considered the same concepts [2,6,9,10,11,12]. A contrasting finding showing statistically significant difference in carrying angle between males and females was observed by different other researchers [3,7,13,14,15]. The sex difference was probably due to methodology used and sample size. Atkinson & Elftman [13] and Paraskevas et al. [3] used handmade wooden goniometer and Erdogan et al. [14] used improvised universal plastic goniometer, but they placed the goniometer along the medial border of the arm and forearm where soft tissue affects the reading of carrying angle. Since the soft tissues, especially fat, are more developed in the female; thus, those investigators found more acute carrying angles in the female. If they would have placed the goniometer on the volar aspect of the arm and forearm according to the bony land marks, the differences in carrying angle between the sexes would not be evident.

This study also revealed that there was no statistically significant side difference in carrying angle in both sexes together and separately. This finding was similar with some of other studies that considered the same assessment [2,5,9,11,14]. A dissimilar findings showing there were statistically significant differences in

carrying angle between the sides, right and left [3,6,16]. The side variation was probably due to difference in methods and number of cases. Paraskevas et al. [3] used handmade wooden goniometer and Tükenmez et al. [6] used improvised universal plastic goniometer, but they placed the goniometer along the medial border of the arm and forearm where soft tissue affected the reading of carrying angle. Since the muscles are more developed in the right arm due to over-use hypertrophy; thus, those investigators found more acute carrying angles in right side. If they would have placed the goniometer on the volar aspect of the arm and forearm according to the bony land marks, the differences in carrying angle between the sides would not be obvious.

Moreover, it was clear that the numerical value of the carrying angle of this study was similar to the most of the study conducted in the Asian region but dissimilar to the most of the study conducted in the Europe and American region. Perhaps, this difference is due to different height and races. According to Khare et al., [12] elbow angulation was inversely related to the height of a person. As the average height of the people of the Asian region is less than the average height of the people of the Europe and American region, the obliquity of the forearm is more marked in the eastern than the western region. The carrying angle values also differ quantitatively in different races that were also reported by other investigators [5,9].

Conclusion:

The aim of this study was to determine the carrying angle in adult population in Bangladesh by radiographic method. It aided to establish data on carrying angle, its sex and side difference in Bangladeshi population. The study revealed that there was no statistically significant difference of mean carrying angle between the sexes and sides. The findings of the study would be helpful for the orthopedic surgeons to manage pathologies around the elbows and manufacturers to prepare elbow replacement implant. The carrying angle values differ in different races. It also varies due to the variations in the measuring methods and anthropometric characteristics.

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Original Article

Infantile Hypertrophic Pyloric Stenosis: Demography, Pattern and Outcome of Surgical Management in a Peripheral District Town of Bangladesh

SA Sayeed[1], KH Rahman [2], SR Pervin [3], A Sattar[4], H Pervin[5], S Chatterjee[6]

ABSTRACT

This study aimed to describe the clinical characteristics of patients with infantile hypertrophic pyloric stenosis, management and its outcome in government and non-government hospitals in Satkhira, a peripheral district town of Bangladesh.A total of 25 patients were included from government and non government hospitals in Satkhira who were diagnosed as cases of IHPS by typical history, a palpable mass and confirmed by ultrasonogram.. The mean age at presentation was 4.9 ± 1.3 weeks, predominantly male with a male-to-female ratio of 4.03:1. The triad of vomiting, palpable mass and visible gastric peristalsis was present in only 8 (32%) of the participants. The diagnosis was confirmed with ultrasounds in all participants. Ramstedtpyloromyotomy was done in all patients and in the postoperative period the most common complications were vomiting (4, 16%) and sepsis (1, 4%). The mortality rate from the series is 4%.

1. *Dr. Shaik Abu Sayeed, Asst. Prof. Paediatrics Surgery, Satkhira Medical College*
2. *Prof. Dr. Kazi Habibur Rahman, Prof. Paediatrics Surgery, Satkhira Medical College*
3. *Dr Sayeda Ruksana Pervin, Asst. Prof. Paediatrics, Satkhira Medical College*
4. *Dr. Md. Abdus Sattar, Asst. Prof. Paediatrics Surger, Pabna Medical College*
5. *Dr. Hasina pervin , Asst. Prof. Anaesthesia , Uttara Womens Medical College, Dhaka*
6. *Dr. Sutapa Chatterjee, Assistant Professor, Radiology, Satkhira Medical College*

Introduction

Infantile hypertrophic pyloric stenosis(IHPS) is a common infantile disorder characterized by enlarged pyloric musculature due to hyperplasia of smooth muscle fibres of the pylorus leading to narrowing of the pyloric canal causing gastric outlet obstruction[1]. The incidence of IHPS varies amongst different ethnic groups and races around the world [2]. IHPS typically presents with progressive projectile non-bilious vomiting. This usually commences between second and eighth week of age.

IHPS occurs in about 1–4 per 1000 live births and it is more common among male infants with a male to female sex ratio estimated at 4–6:1 [3, 4, 5], and more frequent in preterm than term neonates [4, 6].

Male gender predominance and a family history of IHPS are consistently reported risk factors and suggest a genetic component to the aetiology [7].

The study aimed to describe the experience on the management of IHPS in the hospitals of Satkhira.

Materials and methods

This was a retrospective cross sectional descriptive study carried out in government and non government hospitals in Satkhira. over a period of 4 years from January 2014 to December 2018 to describe the experience in the management of patients admitted to these hospitals.

The study population included all infants who were admitted to the hospitals with the diagnosis of IHPS and underwent surgery during the study period. We excluded all patients that had an alternative intraoperative diagnosis. The diagnosis of IHPS was made clinically by the typical clinical presentation of non-bilious vomiting and palpable pyloric mass and by abdominal ultrasonogram. Data was collected using pre-established medical case report forms from the patient's medical record in the paediatric surgical units and theatre of all the hospitals. Over the 4 years period, 28 cases of IHPS were confirmed using abdominal ultrasound. We excluded three cases that had an alternative intraoperative diagnosis.

The data was collected using epi data version 3.1 then transferred to and analysed using SPSS version 20.0. Mean and standard deviations were determined for continuous variables whereas proportions and frequency tables were used to summarize categorical variables. The level of significance was considered as $p < 0.05$.

Ethical and administrative approval was obtained from the respective hospitals before commencement of the study. After assessing the medical files, patient's guardians were called for signed informed consent and this was done before information was collected from the medical files of all the participants.

Results

Baseline patient characteristics

Over the 4 years period, 28 cases of IHPS were confirmed using abdominal ultrasound. We excluded three cases that had an alternative intraoperative diagnosis. They were predominantly males with a male female ratio of 4.03:1. The mean age at presentation was 4.9 ± 1.3 weeks, with a range of 9 days to 10 weeks and most were neonates within 2–6 weeks (19, 76%) of life as shown on Table 1. About half (48%) were first born children and breast feeding was the dominant mode of feeding in 64% (Table 1).

Clinical presentation and diagnosis

The diagnosis was made clinically in patients who presented with a triad of non-bilious projectile vomiting (100%), visible gastric peristalsis (40%) and a palpable olive shaped epigastricmass (24%) as presented on Table 2. This triad was present in 8 (32%) of the participants. In all other patients, a suspicion was made after presenting with one or more of the above symptoms inclusive of weight loss (52.4%), dehydration (44%), and constipation (60%) (Table 2).This diagnosis was confirmed in all the patients using abdominal ultrasound.

Table 1

Clinical features of the study population at presentation:

Characteristic	Number	Percentage
Vomiting	25	100
Weight loss	15	52.4
Constipation	6	60
Dehydration	11	44
Visible gastric peristalsis	10	40
Palpable mass	6	24
Other symptoms	4	16

Of the serum electrolytes report, 17 patients (68%) had hypokalaemia, whereas 5 (20%) of the patients had normal serum electrolytes(Table 3).

Table 2

Serum electrolytes report of the study population at presentation:

Type of electrolyte imbalance	Number	Percentage
Hypokalaemia	17	68
Hyponatremia	12	48
Hypochloraemia	12	48
Normal electrolyte	5	20

Management and outcome

After resuscitation all the patients were surgically managed by Ramstedt pyloromyotomy. During this preoperative period, fluid and electrolyte abnormalities and dehydration were corrected prior to surgery. Fluid and electrolytes were corrected using ¼ th strength and ½ strength saline and DNS. The median preoperative hospital stay was 4.3 ± 1.2 days with a range of 3–11 days.

All patients were operated under general anaesthesia. The operation were done through supra-umbilical transverse incision. Post-operatively, test feeds were started within 12 h of surgery in 17 (68%) of the infants and within 12–24 h in 6 (24%) participants. Two (8%) participants were kept nil per os for more than 24 because after test feeding patient developed excessive vomiting. 5 patients developed complications which included post-operative vomiting in 6 (20%) patients, 2 (8%) sepsis, paralytic ileus (2, 8%). One case of death were registered in the series given a case fatality rate of 4%. The cause of death was severe sepsis in the postoperative period. The median preoperative hospital stay was 4.3 ± 1.2 days with a range of 3–11 days.

Discussion

Infantile hypertrophic pyloric stenosis (IHPS) was first described by Harald Hirschsprung in 1888 [8]. It is the most common cause of gastric outlet obstruction in infancy and the most common surgical emergency in a new born [9]. In this cross sectional descriptive study, the authors described their experience of the presentation and management of infantile hypertrophic pyloric stenosis in various government and non government hospital in Satkhira, a southern district town of Bangladesh. Males were predominantly affected with a male female sex ratio of 4.03:1 which is compatible to the global male female sex ratio of 4–6:1 [3]. This male predominance is equally similar to results gotten from other recent studies [7, 10]. There disorder was more common among first born infants at a rate of 48% compared to higher orders children. This is similar to a study done in Ethiopia in 2014 by Tadesse and Gadisa where 56.4% occurred in first born infants [7]. The mean age of presentation of 4.9 weeks is consistent with findings in global literature [2, 11], and in findings from recent studies in Ethiopia and Tanzania [7, 10].

Most common cause of gastric outlet obstruction in infants is hypertrophic pyloric stenosis which usually presents with non-bilious vomiting [2]. This was the most predominant symptom here in all the participants. This is equally similar to recent series described elsewhere in Africa where all the participants presented with vomiting [7, 10]. The classic presentation of an olive mass in the epigastric region on palpation was established only in 24% of the cases. This means that in about two-third of the cases of IHPS the olive is not palpable. This reduces the clinical diagnostic probability of IHPS. This low rate of palpable olive shape mass in the

rate of palpable olive shape mass in the epigastrium was probably due to non co-operation of the baby patients to be examined, though it is similar to 23–26% obtained in studies in Ethiopia and Tanzania [7, 10]. Pre-operatively, IHPS is usually complicated by dehydration, weight loss and a characteristic hypochloraemic hypokalaemic metabolic alkalosis [12-14]. All these complications were observed in the series described with the most common electrolyte abnormality hypochloraemia and hypokalaemia. Similar electrolyte abnormalities were observed in a study in 2015 in Tanzania [10].

The gold standard in the management of IHPS remains surgery described in 1912 by Ramstedt now known as Fredet-Ramstedt extra-mucosal pyloromyotomy [1, 15]. This can be done both by traditional laparotomy or laparoscopy [16]. All our patients benefited from pyloromyotomy by laparotomy. Mucosal perforation is a rare intraoperative complication of Ramstedt's pyloromyotomy. In our series, no intraoperative duodenal perforations were reported whereas 1–2% reported in literature [17, 18]. We think the 0% rate of perforation was due to meticulous care in performing Ramstedt's pyloromyotomy to prevent mucosal perforation, especially at the lower end of the incision (pyloric–duodenal junction).

Mortality after pyloromyotomy is less than 1% in most centres and when it occurs, it is usually from fluid and electrolyte depletion in infants presenting late, and inadequately corrected electrolyte problems before surgery [12]. We observed very high mortality rate of 4% in our series. This mortality rate is lower than that of studies described elsewhere in Africa [7, 10]. The low mortality rate can be attributed to the low rate of intraoperative complication and postoperative infections with proper correction of fluid and electrolyte deficit before surgery.

Conclusion

The series has demonstrated that infantile pyloric stenosis is 4 times more common in males compared to females and is more common among first born neonates compared to higher order neonates. The most frequent clinical presentation is non-bilious projectile vomiting. The management of choice still practiced in our setting is Ramstedtpyloromyotomy. The mortality rate is higher in this region at 4%.

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Original Article

Use of Prophylactic Dexamethasone to Prevent Perianesthetic Shivering During Transurethral Resection of Prostate Under Spinal Anesthesia

MS Hossain[1], MAW Khan [2], M Saifullah [3], J Sarkar [4], I Alam[5]

ABSTRACT

Background: This study was conducted to investigate the efficacy of prophylactic dexamethasone 0.1mg/kg intravenously to prevent perioperative shivering in patients undergoing transurethral resection of prostate (TURP) under spinal anesthesia. Geriatric patients who undergo transurethral resection of prostate are prone to perioperative shivering during spinal anesthesia. Use of prophylactic intravenous dexamethasone, which is known to reduce shivering, could lead to decrease in the morbidity and mortality of such patients.

Materials and methods: In this prospective double blinded placebo-controlled study, 80 patients scheduled for transurethral resection of prostate surgery under spinal anesthesia were randomized into two groups. Group I (Dexamethasone Group) (n=40) received intravenous dexamethasone 0.1 mg/kg body weight diluted in 10 ml saline, while Group II (Placebo Group) (n=40) received 10 ml saline intravenously as placebo, just before spinal anesthesia. After achieving subarachnoid block, the incidence, severity and duration of shivering was recorded and compared in both the groups. The body temperature and hemodynamic parameters were recorded at regular intervals.

Results: Incidence of shivering was significantly less in patients who were given prophylactic intravenous dexamethasone when compared with that of the placebo group (15% vs. 55% respectively (P value of <0.05). Dexamethasone did not lead to any clinically significant side effects.

Conclusion: It can be concluded that as a prophylactic intravenous dexamethasone 0.1 mg/kg is effective in reducing the incidence, severity and duration of perioperative shivering in patients undergoing transurethral resection of prostatesurgery under spinal anesthesia.

Key words : Dexamethasone, perioperative shivering, spinal anesthesia, transurethral resection of prostate (TURP) surgery.

1. *Dr. Muhammad Sazzad Hossain, Associate Professor and HOD, Anesthesiology, NI ENT. Tejgaon, Dhaka.*
2. *Dr. Mehtab Al-Wadud Khan, Professor, Anesthesiology, Dr. Sirajul Islam Medical College and Hospital, Dhaka.*
3. *Dr. Md. Saifullah, Asstt. Prof. Anesthesiology, Satkhira Medical College.*
4. *Dr. Jayanta Sarkar, MO, CS, Satkhira.*
5. *Dr. Iskandar Alam, Medical Officer, Anesthesiology, Sadar Hospital, Satkhira.*

Introduction

Shivering is a frequent complication of anesthesia; it has been reported to range from 20 to 70% in general anesthesia[1]. Shivering is believed to increase oxygen consumption and increase the risk of hypoxemia; it might also increase postoperative complications. Shiveringis usually triggered by hypothermia. However, it occurs even in normothermic patients during the perioperative period. The etiology of perioperative shivering is not understood sufficiently[2]. In addition to the fact that shivering is poorly understood, the gold standard for the treatment and prevention has not been defined yet. Shivering, a syndrome involving involuntary oscillatory contractions of skeletal muscles, is a common and challenging side effect of anesthesia and targeted temperature modulation[3]. Shivering is a physiologic response to cold exposure and the body's next step in heat preservation after peripheral vasoconstriction[4]. Perioperative shivering is an involuntary, oscillatory muscular activity during operation and early recovery after anesthesia. Shivering is defined as the fasciculation of the face, jaw, or head or muscle hyperactivity lasting longer than 15 seconds[5]. This phenomenon is a common occurrence observed in the post-anesthesia care unit.

Both neuraxial (epidural and spinal anesthesia) and general anesthesia are associated with a significant incidence of shivering and the incidence is 40%–60% in regional anesthetic patients and up to 60% in general anesthetic ones[6]. Shivering differs from general anesthesia to neuraxial anesthesia. General anesthesia could impair the central thermoregulation, but spinal anesthesia affects central and peripheral thermoregulation, by enlarging the inter-threshold range via raising the sweating threshold and decreasing the vasoconstriction and shivering thresholds. The core temperature decrease will be in a plateau after 3–4 h in general anesthesia but in the neuraxial anesthesia there is no plateau, because in neuroaxial anesthesia the vasoconstriction will not be evoked when the core temperatureтriggers the reset vasoconstriction threshold, in contrast with general anesthesia. Thus, more heat will be lost, and more incidences will occur in neuraxial anesthesia. For instance, the primary mechanism of perioperative hypothermia during TURP operation under spinal anesthesia is because of redistribution of the intravascular volume from the core to peripheral compartment below the level of sympathectomy, predisposing the body to radiant heat loss[7]. Beside this, spinal anesthesia itself slightly decreases the threshold-for triggering vasoconstriction and shivering above the level of the block[8].

Shivering is elicited when the pre-optic region of the hypothalamus is cooled. Efferent signals mediating shivering descend in the medial forebrain bundle. Spinalalpha motor neurons and their axons are the final common path-way for both coordinated movement and shivering[9].

Highly effective anti-shivering medication classes are centrally acting analgesics (tramadol), opioid receptor agonists (pethidine, fentanyl), cholinesterase inhibitors (physostigmine), and N-methyl-D-aspartate receptor antagonists (ketamine, magnesium sulfate). Meanwhile, ?2-central agonists (clonidine, dexmedetomidina) and anti-serotonergic (ondansetron) and anti-inflammatory drugs (dexamethasone) are increasingly used. This data support that medications which interfere at different levels of the thermoregulatory loop have more efficacy

(opioid agonist, NMDA antagonist) than those with only one function (?2-receptor agonist, antiserotonergic agents) or only at the peripheral level (nonsteroidal antiinflammatory agents)[10].

The mechanism of action of dexamethasone may be attributed to its central inhibitory effect on the thermoregulatory center and inhibition of release of cytokines and inflammatory mediators, which affect the thermoregulatory center[11].

The present trial was conducted to study the effect of a prophylactic dose of dexamethasone on shivering compared with placebo in patients undergoing TURP under spinal anesthesia.

Materials and methods

This was a randomized double blind study conducted at Dr. Sirajul Islam Medical College and Hospital and other different private hospitals in Dhaka city, during the period of January 2017 to July 2017. After having obtained written informed consent from all 80 patients, aged between 50 and 70 years, belonging to American Society of Anesthesiologists (ASA) physical status class I and II, undergoing elective transurethral resection of prostate (TURP) surgery likely to last between 40 and 70 minutes under spinal anesthesia (SA), were included in this study. Pre-anesthetic investigations and evaluation were done in all patients. The patients enrolled were randomly assigned into two equal groups of 40 patients each. The anesthesiologist conducting the case and recording the data was unaware of the preparation administered. Patients were randomly assigned into two groups, each receiving intravenous formulation just before spinal anesthesia was induced. Group I (Dexamethasone Group) (n=40) received Dexamethasone 0.1 mg/kg intravenously diluted in 10 ml saline, while the Group II ((Placebo Group) (n=40) received 10 ml saline intravenously as placebo.

Subarachnoid blockade up to T9-10 dermatome level was achieved with heavy Bupivacaine (0.5%) 12.5 mg at L3-4 or L4-5 interspace using 25 G Quincke spinal needle under aseptic condition. The operation theater was maintained at a constant humidity and an ambient temperature of around 24°C. Pre warmed up to the body temperature of 37°C, intravenous and irrigating fluids were used perioperatively.

Heart rate, noninvasive blood pressure, respiratory rate, SpO2, body temperature were recorded every 5 minutes from the baseline (when SA was given) for 1 hour and thereafter every 15 minutes for the rest of the observation period. In all the cases, shivering was recorded by the same attending anesthesiologist at a period of 0, 1, 5, 10, 15, 30, 45, 60 and 90 minute from the baseline as per grades given by Wrench et al12.

Perioperatively if shivering occurred, it was treated in the same manner in both groups -with reassurance, warming blanket or pethidine. In cases with grade 3-4 shivering for more than 4 minutes duration, the prophylaxis was considered ineffective and intravenous pethidine 25 mg was administered. Associated conditions like bradycardia and hypotension were recorded. Bradycardia and hypotension were appropriately treated.

Statistical analysis:According to the type of data it was represented as mean± standard deviation or percentages.Comparisons of the two studied groups were performed using either unpaired t-test or Chi-Square test as appropriate. In all tests results were considered statistically significant if p value was less than 0.05.

Grading status of shivering as per Wrench

et al12:

Grade 0 No shivering observed.

Grade 1 One or more piloerection: peripheral cyanosis without other cause, but without visible muscular activity.

Grade 2 Visible muscle activity confined to one muscle group.

Grade 3 Visible muscle activity in more than one muscle group.

Grade 4 Gross muscular activity involving the entire body.

Results

In this study, 80 patients (ASA I and II) were randomized in two groups, 40 in Group I (Dexamethasone group) and 40 in Group II (Placebo Group) . Demographic characteristics and operative details of the studied population in the two study groups are presented in Table I.

Table-I: Demographic and operative details of patients between Dexamethasone and Placebo group.Demographic details	Group I (Dexamethasone group) n=40	Group II (Placebo group) n=40
Age (Years)	64.74±7.32	65.21±7.84
Weight (Kg)	71.87±6.83	72.76±7.94
ASA physical status I/II	32/2	30/10
Mean basal heart rate (bpm)	82.8±7.6	81.9±8.3
Mean basal systolic BP (mm Hg)	138.73±9.12	136.76±9.73
Mean basal diastolic BP (mm Hg)	78.84±7.83	79.86±8.63
Mean duration of surgery (min)	54.6±5.8	56.7±7.2
Mean body temperatures during surgery (oC)	36.23±0.48	36.32±0.38
Mean body temperature in recovery room (oC)	36.53±0.38	36.62±0.32

Perioperative shivering was seen in 6 patients (15%) in the Dexamethasone group and 22 patients (55%) in the Placebo group (P<0.05). Incidence and severity of different grades of shivering in the two study groups is presented in Table -II. The prevalence of grade 3 and 4 shivering which needed treatment with pethidine (ineffective prophylaxis) was 2.5% (1/40) and 22.5% (9/40) in Dexamethasone and placebo groups respectively (p<0.05). No complication was seen in any of the patients.

Table II: Incidence and severity of shivering	Parameters	Group I (Dexamethasone) % n-40	Group II (Placebo) % n=40	P value
Shivering Incidences	Yes	6 (15%)	22 (55%)	P<0.05
No	34 (85%)	18 (45%)		P<0.05
Severity	Grade 0	34 (85%)	18 (45%)	P<0.05
Grade 1	3 (7.5%)	7 (17.5%)		P<0.05
Grade 2	2 (5%)	6 (15%)		P<0.05
Grade 3	1 (2.5%)	5 (12.5%)		P<0.05
Grade 4	0	4 (10%)		P<0.05

Discussion

In this study, the effect of prophylactic Dexamethasone in preventing perianesthetic shivering during (TURP)operation under spinal anesthesia was compared with that of placebo and perioperative shivering was found in 6 patients (15%) in the Dexamethasone group and 22 patients (55%) in the Placebo group (P<0.05).The mechanism of action of dexamethasone may be attributed to its central inhibitory effect on the thermoregulatory center and inhibition of release of cytokines and inflammatory mediators, which affect the thermoregulatory center11.

In a study by Yared etal13, it was concluded that administering 0.6 mg/kg dexamethasone before induction of anesthesia can significantly reduce the incidence of shivering (13.1% compared with 33.3% of control group). In a study by Essam E et al14, performed on patients undergoing heart valve replacement surgery, it became clear that pretreatment with 100 mg of dexamethasone would lead to the reduction of postoperative shivering

incidence.

In a double-blind clinical trial study conducted by Farzi15on 250 patients aged 20 to 60years old both men and women in ASA class I and II, before elective surgery, the patients were randomly assigned to two groups: the dexamethasone group received 0.25 mg/kg dexamethasone before induction of anesthesia and placebo group. Compared with placebo, dexamethasone reduced the incidence of postoperative shivering (40 % compared with 16.7 %) (P < 0.05). In our study it was founded that compared with placebo, dexamethasone reduced the incidence of postoperative shivering (55 % compared with 15 %) (P <0.05) which is nearly similar.

Norouznia et al16study, a double-blind clinical trial, 100 patients with physical status of I and II in the age range of 20-50 years old, who were candidates for cholecystectomy surgery under general anesthesia, before induction of anesthesia were randomly divided into two study groups, intravenous dexamethasone 0.15 mg/kg and control group . The incidence of shivering was significantly lower in the dexamethasone group than the placebo group. (18.7% vs. 36% and p< 0.05).

There are a few limitations to this investigation, the optimal dose of dexamethasone required to prevention of postoperative shivering has not been established. A dose of 0.1 mg/kg was selected for the current investigation based on data that this is the optimal effective dose in the prevention of postoperative shivering17. Future dose-response studies will be required to establish the most appropriate dosing regimen of dexamethasone for optimal prevention of postoperative shivering.

Conclusion

From the results of the present study, it can be concluded that prophylactic dexamethasone is effective in reducing the incidence and severity of shivering in TURP patients under spinal anesthesia.

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