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EDITORIAL

Fever: A Return to Basics!

KG Mostafa

Fever is a physiological response to infection which seems to have evolved and been preserved in humans over eons of time. It isa protective mechanism and, except for the rare circumstance of a central nervous system condition such as hypothalamic disease, the body will not allow lethal hyperpyrexia so long as (a) hydration remains adequate and (b) the body is provided an environment which allows for heat loss(1). As such, the primary question should actually be not how to best treat fever but whether to treat it at all!The main aim in treating fever, therefore, shifts from clinical and medical concern to one of patient comfort. Providing this comfort should be balanced against the potential negative sequel of fever treatment: dulling a physiologically positive response to infection, diverting parental and medical attention away from concentrating on the cause of the fever rather than the fever itself, and even the possibility of increased nosocomial infections and serious poisoning(2,3). Some authors maintain that febrile seizures actually occur with increased frequency in children who have been exposed to sponging(4), possibly due to intense vasoconstriction diverting blood centrally and leading to a sudden or marked rise in core temperature. Vigorous attempts at antipyresis have failed to prevent recurrence of febrile seizures.

This being said, the article by Thomas, et al.(5) in this month's Indian Pediatrics revisits the interesting question of how best to reduce fever. Utilization of axillary temperature as their primary endpoint reflects common practice, but it must be remembered that although a temperature gradient exists from axillary to oral to rectal temperature on a population basis; within an individual, patient correlation between axillary and core temperature is very poor(6). Thus their endpoint may not truly reflect changes in core temperature. Secondly, these authors used a dose of 10 mg/kg of paracetamol despite the fact that 15 mg/kg is the recommended antipyretic dose(7). Thirdly, the change of 0.4°F which they used for their power calculations is probably not of great clinical significance.

Thomas, et al. show that tepid sponging added nothing to the antipyretic effect of paracetamol after two hours; even though a more rapid initial fall in temperature was noted. Furthermore, they stress that tepid sponging was uncomfortable for patients. Their findings and conclusions support the idea that the aim of therapy in febrile children should be to concentrate on the investigation and treatment of the cause of the fever while ensuring adequate hydration, minimal loose clothing and patient comfort. At a more universal level, their findings could be used to try and counter the fever phobia which seems to be consuming not only parents but the medical community as well!

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Original Article

Table Salt Use in the Treatment of Umbilical Granuloma – Our Experience

KG Mostafa[1], SR Parvin[2], S Rahman[3], TK. Das [4], SN Saqueeb[5], MR Khatun[6], K. Fatema[7]

ABSTRACT

Background: *Umbilical granuloma is the most common umbilical problem in neonates and young infants. It is commonly noted by the parents owing to persistent drainage or moisture involving the umbilicus, after the cord has dried and separated. If umbilical granuloma remains untreated, it could ooze and present with persisting irritation for several months. Many treatment modalities are available for umbilical granuloma such as chemical cauterization with silver nitrate or copper sulphate, electrocauterization, cryocauterization, granuloma ligation, and surgical excision.* ***Objective:*** *To evaluate the therapeutic effect of common salt (table or cooking salt) on umbilical granuloma in neonates and infants.* ***Materials and Methods:*** *This prospective study was conducted on 55 infants with umbilical granuloma. Parents of these 55 infants were instructed on the treatment regimen and administration to their neonates and infant at their home. The treatment consisted of application of common salt on the lesion twice a day, washing 30 min later, and repeating the procedure for 7 days.* ***Result:*** *49 infants with umbilical granuloma showed complete resolution after the 7 day course of common salt treatment.* ***Conclusion:*** *The use of common salt in treating umbilical granuloma is simple, cost-effective,harmless ,pain less, curative, and safe. It is easily administered and can be performed by parents at home.*

KEY WORDS: Umbilical granuloma, common salt, infants

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Introduction:

Umbilical granuloma is the most common umbilical abnormality in neonates [1]. It is an overgrown tissue that develops during the healing process of the umbilicus, usually in reaction to a mild infection. It typically presents as a tiny segment of bright red, slightly wet flesh that remains in the umbilicus after cord separation, where normal healing should have happened [2]. Umbilical granulomas are often noted by the parents because of continuous drainage or moisture involving the umbilicus, after the cord has dried and

separated. It is not a congenital abnormality but represents continuous swelling of the granulation tissue that has not yet epithelialized [3]. The umbilical cord normally separates within 7–10 days postpartum [4]. Following cord separation. incomplete epithelialization may happen over the fibromuscular ring of the umbilicus, and an area of beefy red tissue or granulation tissue is seen. This normal granulation tissue of the resolving umbilical stump of a newborn should vanish by the second or third week of birth with correct hygiene. Granulation tissue can grow excessively at the umbilicus and lead to an umbilical granuloma. It contains no nerves and is devoid of sensation.[1] Persistence of the granuloma beyond this time will require therapeutic intervention [5]. Currently, the therapeutic alternatives for umbilical granuloma are the following: (1) chemical cauterization with silver nitrate or copper sulphate, (2) electric cauterization, (3) cryocauterization, (4) surgical excision, and (5) double-ligature technique. Chemical cauterization with 75% silver nitrate stick or solution and copper sulphate is the conventional method. This method is not entirely safe, and when appliedliberally, these solutions can cause minor burns in the periumbilical skin area. In 1972, Schmitt briefly described the contracting effect of common salt on umbilical granuloma. This observation has rarely made an appearance in subsequent medical literature. This study reports successful treatment of umbilical granuloma with common salt.

Materials and Methods: This prospective study was conducted at the Khulna sadar Hospital and Non Govt.Clinic in Khulna region. Data were collected between December 2013 and November 2015. A total of 55 neonates and infants (3–16 weeks), both boys and girls, with clinically evident umbilical granuloma who sought treatment at the Pediatric clinic of the institution were considered as the target group]. All infants with signs of infection at the umbilicus were excluded from the at the umbilicus were excluded from the study. The parents (mostly mothers) were asked to (1) clean the umbilical area with a cotton ball soaked in warm water, (2) apply a small pinch of table/cooking salt over the umbilical granuloma, (3) cover the area with adhesive tapes to keep the salt in place for 30 min, and (4) again, clean the area using a cotton ball soaked in warm water. This procedure was repeated twice a day for 7 consecutive days. All neonates and infants were reevaluated after 1 week and 3 weeks to see the effect of common salt on umbilical granuloma. The effects were graded as (a) excellent response (complete regression, no discharge, and healed with complete epithelialization) and (b) no response (no regression of umbilical granuloma, and persistent umbilical discharge). **Results:** A total of 55 neonates and infants were included in the study. The enrolled infants were aged 3–16 weeks [Table 1]. Twenty-eight infants were girls (56%), and 27 (49.09%) were boys .The effects of common salt were evaluated 1 week and 3 weeks following the last application. 52 neonates and infants demonstrated excellent results. No adverse effects of common salt were observed in this study. The most common observation described by parents was discharge of a reddish black secretion from the lesion on the first 2 days of treatment, following which shrinkage and gradual healing of the lesion was apparent within 3 weeks. The umbilicus returned to normal in 52 infants. 3 patient required other alternatives.

Discussion: Umbilical swelling and discharge is commonly found in general pediatric practice and may challenge the physician's diagnostic acumen. The umbilical granuloma is the most common umbilical problem in infants. If umbilical granuloma remains untreated, it could ooze and present with persisting irritation for several months [6]. Many treatment modalities are available for umbilical granuloma such as chemical

cauterization, electrocauterization, cryocauterization, granuloma ligation, and surgical excision. Although all treatment modalities show a curative effect, each method has certain advantages and disadvantages. Cauterization with silver nitrate may cause a minor burn on the periumbilical skin, which is painful [7] cryocautery is expensive and complex; electrocautery is associated with a foul discharge and higher failure rates [8]; and surgical removal needs general anesthesia and is rarely required [3]. The natural regression of the untreated umbilical granuloma has not been documented [5]. Further research is needed for an agent, which is not associated with any complications and has a curative effect. In this situation, common salt is a suitable agent for the treatment of umbilical granuloma. Common salt is potent and cost-effective, shows no adverse effects, and easily available. Encouraged by the other studies reported, [9–13] we used common salt on this study population. A total of 55 infants were selected for the study. Their ages ranged from 3 weeks to 16 weeks. In order to collect 55 infants with umbilical granuloma, this study was carried over 4 years duration, which was the main limitation of the study. In the literature, the incidence of umbilical granuloma was the same in boys and girls [14], which co-related in this study. All 55 infants enrolled in this study showed excellent results. Umbilical granuloma is a minor condition with no recognized associated anomalies and is effectively and easily managed by local application of common salt. However, other umbilical conditions may present in a similar manner and be difficult to distinguish clinically. They may have been associated with more severe anomalies and will not be cured with common salt. Therefore, logical assessing of the discharge and swelling of the umbilicus is important in order to minimize diagnostic errors and delays in the initiation of the correct treatment. The umbilical granuloma umbilical granuloma treated with common salt usually clears within 3–5 days. If not completely cured within this time, surgical advice should be obtained [14]. The curative mechanism of salt when used for treating umbilical granuloma is attributed to its desiccant effect and their biological properties. The high concentration of sodium ion in the area draws water.

Results

Table 1: Age group distribution

Sex distribution

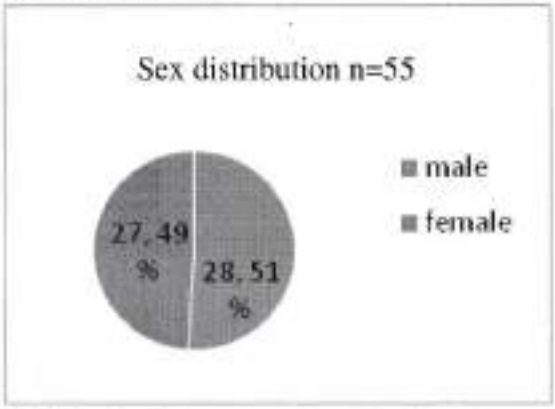
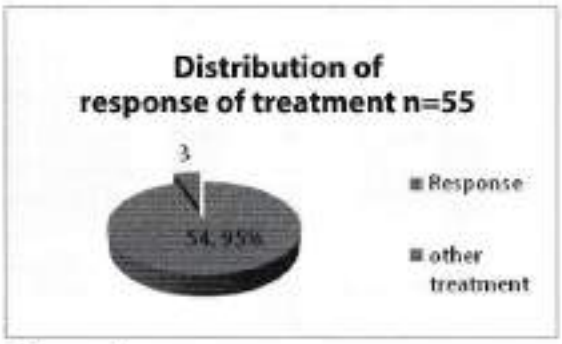


Table 3: Response to the treatment n=55



Discussion:

Effect of common salt on umbilical granuloma causes fluid out of the cells and results in shrinkage and necrosis of the wet granulation tissue. However, this effect is not so powerful as to cause damage to the normal surrounding tissue when applied for short treatment duration [10]. Unlike conventional treatment with 75% silver nitrate, which may cause periumbilical skin burns and cloth staining, needs several applications, and

and should be administered by a physician,[10] common salt does not have any complications and can be administered by parents. The procedure is not painful as the granuloma contains no nerves and develops no sensation. Common salt is not an irritant to tissues and does not burn normal tissues. The infant may cry because of being poked in the belly during the application of salt. This study demonstrates the successful treatment of umbilical granuloma with common salt (table or cooking salt), with no complications or relapse reported. This is a very important finding because many physicians lack the knowledge about the success use of common salt treatment for umbilical granuloma.

Conclusion: The application of common salt (table or cooking salt) to the umbilical granuloma is a simple, highly effective, and inexpensive form of treatment without any complications or relapse. Treatment can be performed by physicians, nurses, primary health-care staff in remote areas, and even by parents.

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Original Article

Clinicopathological Study of Urological Malignancies at Satkhira Medical College & Sadar Hospital—Our Experience

MRQuddus[1], MM Haque[2], HA Jahan[3]
AHMR Bari[4], K H Rahman[5], MA Islam[6], MB Uddin[7]

ABSTRACT

***Objective** : To identify the clinico-pathological profile of urological malignancies treated in a district level Medical College & Sadar Hospital & non government Hospital. **Materials and methods** :Data related to all newly diagnosed and histologicallyconfirmed malignancies Satkhira Medical College & Sadar Hospital were recorded prospectively over aperiod of four years from 1st of July 2012 to 30 June of December 2016. **Results:** There were prostate cancers20, bladder tumours 70, renal tumours 40, upper urinary tract carcinomas 5, penile cancer 2 & 7 testicular cancer . Gleason score of 8 or more prostate cancers were seen in 40% of patients. Metastases were present in 8 patients with prostate cancer. Muscle invasive urothelialcancers constituted 30% patients with bladder carcinoma. Primary carcinoma-in-situ of the bladder was seen in only onepatient. Average age at diagnosis of renal cell carcinoma was 45 years with a male to female ratio of 4.5:1 **Conclusion:** Renal cancers in Bangladesh occur at an earlier age than thedeveloped countries. They are diagnosed at an early stagesimilar to the developed world in contrast to the late diagnosis of prostate and bladder malignancies in Bangladesh . Most prostate cancers are high grade with a Gleason score of 8 or more. Primary carcinoma-in-situ of bladder is extremely rare in Bangladesh.*

Key word: urological malignancy, prostate cancer

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Introduction

Malignancies make a significant portion of the non-communicable diseases worldwide as well as in Bangladesh[1-3]. Different countries have populations of varying ethnicities with potentially different genetic makeup. In addition to genetic differences, the pattern of cancers differs accordingto different socio-cultural factors inherent to the index population. In the

a comprehensive national cancer registry, data maintained at individual units or at institutional level are useful to identify epidemiological and demographic patterns. Our aim of the study was to identify the clinico-pathological profile of urological malignancies treated in a district level Medical College & Sadar Hospital.

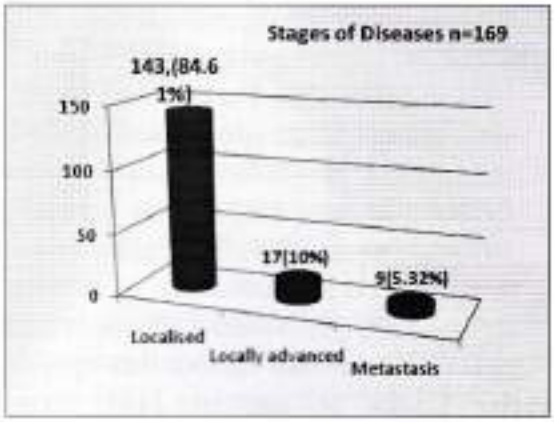
Materials and methods

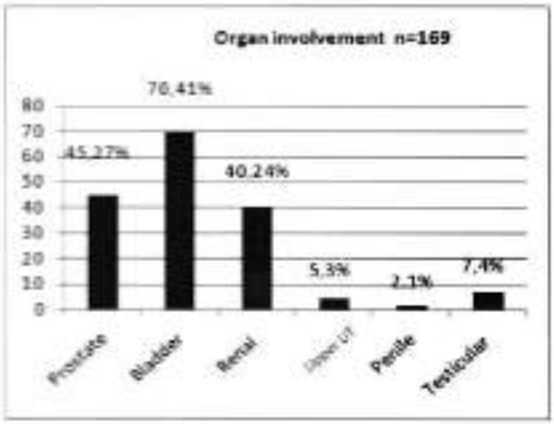
Data related to all newly diagnosed malignancies were recorded prospectively. The data were updated as the patients' follow up continued in the clinic. The data belonging to patients over a period of four years from 1st of July 2012 to 30 June of December 2016. Histopathologcal evaluation was done according to the World Health Organisation (WHO) and International Society ofUrological Pathology (ISUP) classification 2004 .Allpatients included in the study had their diagnosis confirmed by histopathological evaluation. Tumour staging was done using the TNM classification of the Union for International Cancer Control 2009. Data were analysed and presented using SPSS and Microsoft Excel.

Results:

There were prostate cancers 20, bladder tumours 60, renal tumours 30, upper urinary tract carcinomas 5, penile 2 & 7 testicular cancer .

cancers, Gleason score of 8 or more prostate cancers were seen in 40% patients. Metastases were present in 8 of patients with prostate cancer. Muscle invasive urothelial cancers constituted 30% patients with bladder carcinoma. Primary carcinoma-in-situ of the bladder was seen in only one patient. Average age at diagnosis of renal cell carcinoma was 45 years with a male to female ratio of 4.5:1.





Discussion

The commonest urological cancer treated in our study was bladder carcinoma. In Asia prostate carcinoma is the sixth most frequent cancer in men [6,7]. There is no screening programme for prostate cancer in Bangladesh . A large proportion 40% of patients with prostate cancer had a Gleason score of 8 or more. When compared with other Asian countries this pattern is similar to that found in China, Hong Kong and Taiwan [6]. Whether this is due to the late presentation or due toan unknown risk factor is debatable [8]. Only 17.6% were Gleason 6 cancers. Active surveillance is done very rarely due to technical problems like poor compliance and commitment to rigorous follow up histological diagnosis. There were prostate cancers 45 (27%), bladder tumours 70 (41%), renal tumours 40 (24%), upper urinary tract carcinomas 5 (3%), penile2

(1%) & 7 (4%) testicular cancer . Muscle invasive urothelial cancers constituted 30% patients with bladder carcinoma. In our study infiltrating urolhelial cell carcinoma is 10%, with squamous differentiation 5%, with glandular differentiation 80%. The proportion of squamous cell carcinoma in China is around 1.9% [9]. Whether this is related to environmental risk factors that operate in Sri Lanka is unclear [10]. Primary carcinoma-in-situ of the bladder is almost unheard of in Sri Lanka. This is so in other south Asian countries like India too [11,12]. However in China, carcinoma-in-situ of the bladder is seen in 2.4% of urothelial carcinomas [9].

That is similar to a study in Sri Lanaka. Although this is higher than the proportion in the western world, is much less than the 74.1% in China [9]. A higher incidence of squamous cell carcinoma (7.3%) compared to the western world and some other Asian countries is evident. Unlike prostate and bladder cancers, renal cancers of our study have been diagnosed at a relatively early stage similar to developed nations. This may be due to the widespread availability of abdominal ultrasonography facilities in the country. However the average age at diagnosis of renal cell carcinoma is much lower than in the developed countries of Asia and Europe. In Japan it is 63.9 years and in Sweden it is 67 years. The average age at diagnosis of renal cell carcinoma in our study is similar to that of neighbouring India Some postulate whether comparatively poor nutritional status of younger population. Even the average age at diagnosis (69.7 in our study and 70 years in Japan) and male to female ratio (76.9% and 72% men in our study and Japan respectively) of upper urinary tract urothelial carcinoma are similar to that of our study [21]. The small number of cases of testicular and penile malignancies in this study is due to the fact that such tumours are managed by general surgeons in the country. Hence referral of such patients to urology units is minimal. The main limitation of this study is that it is done in a district level drainage population which may not be representative of the whole population

Conclusion

Characteristics of urological cancers appear to vary among Asian countries. Urological malignancy occur at an earlier age than the developed countries. They are diagnosed at an early stage similar to the developed world in contrast to the late diagnosis of prostate and bladder malignancies. Most prostate cancers are high grade with a Gleason score of 8 or more. Primary carcinoma-in-situ of bladder is extremely rare in Bangladesh.

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Original Article

Pattern of Metastasis of Papillary and Follicular Carcinoma of Thyroid

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ABSTRACT

Background: *Papillary thyroid carcinoma has a propensity for lymphatic invasion and lymph node metastasis; while follicular carcinoma has a propensity for vascular invasion and distant metastasis.* ***Objectives:*** *To find out the patterns of metastasis of papillary and follicular type of differentiated thyroid carcinoma.* ***Materials and Methods:*** *This was a cross-sectional study conducted in the Department of Otolaryngology, Dhaka Medical College Hospital, Dhaka during the period from July 2010 to December 2011. Consecutive 120 patients [90 papillary carcinoma patients, 35.8 (SD ± 13.7) years; 59 (65.6%) female and 30 follicular carcinoma, 46.0 (SD ± 8.8) years; 19 (63.3%) female] with hispathologically proved papillary or follicular thyroid carcinoma with or without metastasis were selected.* ***Results:*** *Cervical lymph node metastasis was found in 44 (36.7%) patients and 16 (13.3%) patients distant metastasis was found. Cervical lymph node metastasis was significantly more common in papillary carcinoma [40 (44.4%) vs 4 (13.3%); OR=5.2; 95% of CI=1.677-16.126; p<0.01]; while distant metastasis was significantly more common in follicular carcinoma [12 (40.0%) vs 4 (4.4%); OR=14.333; 95% of CI=4.146-49.550; p<0.01)].* ***Conclusion:*** *There is significant difference in nodal and distant metastasis in papillary and follicular carcinoma.*

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Introduction

Thyroid cancer is a rare entity, which comprises approximately 1% of all malignancies (Gimm, 2001; Gulcelik et al., 2007). Papillary and follicular cancers, both of which are referred to as differentiated thyroid cancer (DTC), make up the majority of all thyroid cancers (Gulcelik et al., 2007). Differentiated thyroid carcinoma is the most common variety and accounts for approximately 90% of all thyroid malignancies (Hundahl et al., 1998; Cushing et al., 2004). Papillary thyroid carcinoma (PTC), the most common malignant thyroid neoplasm accounts for 80% of total thyroid malignancy (Scott-Brown,) characterized by a fine chromatin pattern associated with nuclear grooves, pseudonuclear inclusions or optically clear nuclei, and a propensity for lymphatic invasion and lymph node metastasis (Evans, 1984; Carcangiu et al., 1985; Gardner et al., 2000; Baloch and LiVolsi,

2000; Mai et al., 2002); follicular carcinoma (FC) less common than papillary carcinoma accounts for 10-20% of total thyroid malignancy (Scott-Brown) characterized by a coarse chromatin pattern and a propensity for capsular and vascular invasion (VI) and distant metastasis (Massin et al., 1984; Tubiana et al., 1985; Mueller-Gaertner et al., 1991);

The incidence of thyroid carcinoma varies in different series. The presence of a solitary thyroid nodule is a risk factor for malignancy. The incidence of malignancy within a solitary thyroid nodule is approximately 10-23% (Watkinson et al., 2000).

Metastasis of differentiated thyroid carcinoma occurs in two different ways lymphatic and haematogenous. Nodal metastasis occurs in 40% of papillary carcinoma and 4% of follicular carcinoma. On the other hand blood borne metastases are twice as common in follicular carcinoma than papillary group (Alauddin and Joarder, 2003). Young patients with differentiated thyroid carcinoma typically present with regional lymph node involvement. Distant metastasis and extremes of age has poor prognosis. Distant metastasis is an aggressive with lethal consequences. Distant metastases are the principle cause of death from papillary and follicular carcinoma (Alauddin and Joarder, 2003). The highest risk of cancer death (92% at 5 years) was found in the 14 patients (any age), who at the time of first diagnosis of metastasis had multiple organ involvement (Ruegemer et al., 1988). Lungs and bone are the commonest sites of distant metastasis in follicular carcinoma (Mishra et al., 2002). At the time of diagnosis of distant metastasis only lung 53%, bone 20% and multiple organ 16% were involved (Zohar et al., 1994).

Otolaryngology, Bangabandhu Sheikh Mujib Medical University, Dhaka, defined low and high risk in following order. Here, in papillary carcinoma a low risk patient means a case which has got, a) age between 15 to 40 years, b) intrathyroidal growth, c) tumor size less than 4 cm and d) no nodal or distant metastasis; and a high risk patient means a case having a) age below 15 years and over 40 years, b) extra thyroid growth, c) tumor size 4 cm or more and d) with nodal or distant metastasis. All follicular carcinoma are kept in high risk group irrespective of age of patient, extent & size of tumor and metastasis. The above criteria have a close similarity with NCCN (National comprehensive cancer network, USA) criteria in regard to papillary carcinoma but different to NCCNs low and high risk types, we categorize all follicular carcinoma as high risk ones (Alauddin and Joarder, 2003).

Prognostic importance of regional lymph node metastasis is controversial. In some study lymph node metastasis are not associated with worse prognosis (Christopher et al., 1988). But in others it is important especially in elderly patients. But there are many studies where recurrence of diseases is higher in cervical lymph node metastasis that may be a marker for more aggressive differentiated thyroid carcinoma.

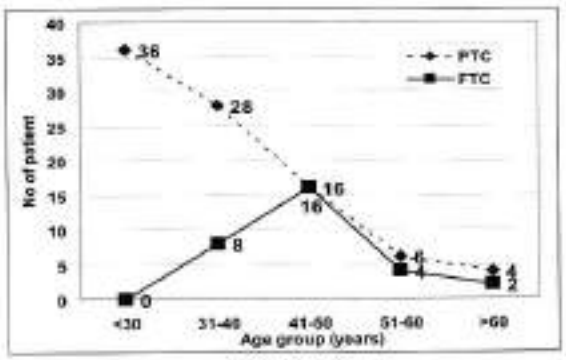
The associated cervical lymph node metastasis with an increase recurrence rate, a more aggressive differentiated thyroid carcinoma, low operative and radioiodine related morbidity support an aggressive approach for management of differentiated thyroid carcinoma with lymph node metastasis. In contrast to squamous cell carcinoma of head and neck, distant dissemination is not a death sentence for differentiated thyroid

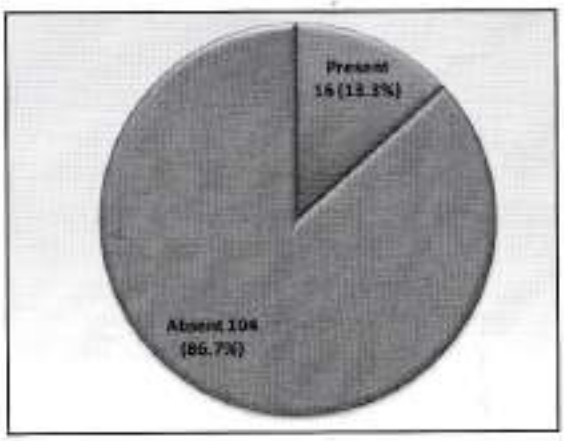
carcinoma. Long term survival of the patient with distant metastasis is quite satisfactory, in one study 43% overall survival compared with 80% survival in patient without distant metastasis (Christopher et al., 1994). Few cases were also reported to involve brain, mediastinum, skin, liver, eye, kidney and other organs (Shaha et al., 1997).

So, pattern of metastasis is important in over all management of differentiated thyroid carcinoma.

4. Results

In this cross sectional study among total 120 cases differentiated thyroid carcinoma patient 42 (35.0%) patients were male and 78 (65.0%) patients were female with female to male ratio of 1.9:1. The age ranged from 12 to 69 years with the mean age of 38.4 (SD ± 13.4) years. Among the types of differentiated thyroid carcinoma 90 (75.0%) cases were papillary carcinoma and 30 (25.0%) cases were follicular carcinoma. Regarding metastasis of the malignancy at the time of presentation, 44 (36.7%) patients had cervical lymph node metastasis and 16 (13.3%) patients presented with distant metastasis. Neck node metastasis was common in papillary thyroid carcinoma (90%) and involved in the level II-IV neck nodes. Regarding distant metastasis, bones (75%) and lungs (25%) were the common sites. Distant metastasis was common among follicular carcinoma (75%).





Discussion

Papillary and follicular thyroid cancers are considered to be differentiated thyroid cancers; together they make up 95% of thyroid cancer cases. Despite its well-differentiated characteristics, papillary carcinoma may be overtly or minimally invasive. In fact, these tumors may spread easily to other organs. Papillary tumors have a propensity to invade lymphatics but are less likely to invade blood vessels (Santacroce, 2011). On the other hand follicular thyroid cancer is slightly more aggressive than the more common papillary thyroid cancer. Follicular thyroid cancer has a propensity for vascular invasion and haematogenous metastases, most commonly to bone and lungs. However, they rarely spread to involve other organs such as liver, brain, kidneys, skin or even adrenals (Kumar et al., 2005).

In this study the patterns of metastasis of papillary and follicular type of differentiated thyroid carcinoma was evaluated. For this purpose 120 cases of thyroid carcinoma were selected according to inclusion criteria. The outcome of the study was discussed below:

In the current study papillary carcinoma was diagnosed in 90 (75.0%) cases and follicular carcinoma was diagnosed in 30 (25.0%) cases. This result was supported

by Lim et al., (2002); Clark et al., (2005) and Gulcelik et al., (2007). Clark et al., (2005) found that papillary carcinoma constituted 76.0% and follicular carcinoma constituted 24.0% of well differentiated thyroid carcinoma. In their study Lim et al., (2002) found that 80.5% of well differentiated thyroid carcinoma was papillary carcinoma and 19.5% was follicular carcinoma. Gulcelik et al., (2007) reported that 80.0% well differentiated thyroid carcinoma was papillary carcinoma and 20.0% was follicular carcinoma. Other studies also reported clearly the preponderance of papillary carcinoma over follicular carcinoma (Spriano et al., 2009; Elisei et al., 2010).

This study showed that the age of the patients ranged from 12 to 69 years with the mean age of 38.2 (SD ±13.4) years. The age of the patients with papillary carcinoma ranged from 12 to 67 years with the mean age of 35.8 (SD ± 13.7) years; while the age of the patients with follicular carcinoma ranged from 35 to 69 years with the mean age of 46.0 (SD ± 8.8) years. The mean age of the patients with follicular carcinoma was significantly higher than that of papillary carcinoma ($p<0.01$). This result was in agreement with Kafferman et al., (2004) that the age of the patients ranged from 15 to 74 years with the mean age of 39.1 years. Lim et al., (2002) reported that the mean age of the patients with papillary carcinoma was 42 (SD ± 13) years and that of follicular carcinoma 44 (SD ± 16) years.

This study also showed that maximum patients of papillary carcinoma [50 (55.5%)] and follicular carcinoma [16 (53.3%)] were in the age between 31 to 40 years and 41 to 50 years respectively. This result was supported by the study of Rao et al., (2002) that papillary carcinomas are more prevalent at a younger age and follicular carcinoma tends to occur in the elderly. Dorairajan et al., (2002) found papillary carcinoma was more frequent in 21 to 40 years (61.6%).

In this study, 42 (35.0%) patients were male and 78 (65.0%) patients were female with female to male ratio of 1.9:1. Out of 90 patients with papillary carcinoma, 31 (34.4%) were male and 59 (65.6%) were female; while out of 30 patients with follicular carcinoma, 11 (36.7%) were male and 19 (63.3%) were female. The occurrence of papillary carcinoma and follicular carcinoma did not vary with sex of the patients ($p>0.05$). This result was supported by Saha et al (1996) and Spriano et al., (2009). Shaha et al (1996) found that 32.0% of well differentiated thyroid carcinoma patients were male and 68.0% were female. Spriano et al., (2009) reported that 39.0% of well differentiated thyroid carcinoma patients were male and 68.0% were female. Other studies also reported the female preponderance (Lim et al., 2002; Kupferman et al., 2004; Wang et al., 2004; Gulcelik et al., 2007; Elisei et al., 2010).

The present study showed that 69 (76.7%) patients with papillary carcinoma were younger age group (≤ 45 years) and 21 (23.3%) patients were older age group (>45 years); while 13 (43.3%%) patients with follicular carcinoma were younger age group (≤ 45 years) and 17 (56.7%) were older age group (>45 years). The occurrence of papillary carcinoma and follicular carcinoma significantly differed with age of the patients when categorized in younger and older age group (? 2=11.533; $p<0.01$). In this regard Rao et al., (2002) found that papillary carcinomas are more prevalent at a younger age and follicular carcinoma tends to occur in the elderly. In papillary carcinoma 55.7% of

patient was aged ≤40 years and 44.3% of patients were above 40 years but in follicular carcinoma 39.4% of patient were aged ≤40 years and 60.6% of patients were above 40 years (Rao et al., (2002).

In this study there were 79 (65.8%) pure papillary, 11 (9.2%) were follicular variant of papillary carcinoma and 30 (25%) follicular carcinoma on histopathological examination of the resected specimen. In this regards Dorairajan et al., (2002) found that the classic variant of papillary carcinoma was the most common morphological type (83%) followed by the follicular variant (9%), tall-cell (6%), columnar-cell and diffuse-sclerosing variants (1%) each.

In the current study cervical lymph node metastasis at the time of presentation was found in 44 (36.7%) patients. Shaha et al., (1996) reported nodal metastasis in 47.5% of cases of their series.

In this study distant metastasis at the time of presentation was found in 16 (13.3%) patients. Shaha et al., (1996) was in agreement with this result that distant metastasis in patients with differentiated thyroid cancer was 13%. In this regards Gulcelik et al., (2007) found distant metastasis in 9.0% of cases of their series.

Cervical lymph node metastasis was found in 40 (44.4%) cases of papillary carcinoma; while cervical lymph node metastasis was found in 4 (13.3%) cases of follicular carcinoma. Cervical lymph node metastasis was significantly more common in papillary carcinoma than that of follicular carcinoma ($p<0.01$).

Lim et al., (2002) supported the result that pathologically confirmed neck nodes were documented in 6% of follicular carcinoma and 34% of papillary carcinoma. Shaha et al., (1996) found cervical metastasis in 56.0% of papillary carcinoma and 21.0% of follicular carcinoma at the time of initial presentation. There were 27.9% patients with papillary and 9.6% with follicular cancers metastasized to lymph node (Sarda et al., 2002). Rao et al., (2002) reported that 25.6% patients with papillary and 13.6% with follicular cancers metastasized to lymph node. Dorairajan et al., (2002) found 40.9% of patients with papillary carcinoma involved cervical lymph node among their series of papillary carcinoma. Carcangiu et al., (1985) found that cervical lymph node was involved in 54.9% of patients with papillary carcinoma.

Lymph node metastases generally occur in a stepwise fashion, to the ipsilateral central neck first and then move on to the ipsilateral lateral neck and subsequently to the contralateral neck although skip metastases do occur. The ipsilateral central neck (level VI) is the most common site of metastatic PTC (Qubain et al., 2002; Machens et al., 2004). The ipsilateral level VI lymph nodes are involved in up to 69% of patients and it is the only lymph node compartment involved in 26% (Gimm et al., 1998). The contralateral central neck is involved in approximately 10–20% and the ipsilateral lateral neck (node levels II–V) in 37–54% of patients (Gimm et al., 1998; Sivanandan et al., 2001; Grodski et al., 2007). In this regards the present study showed that level III cervical lymph node involvement was involved in 28 (63.6%) cases, level IV in 26 (59.1%) cases, level II in 11 (50.0%) cases and level V and Level VI each constituted 10 (22.7%) cases. Different studies supported this result (Yanir and Doweck, 2008; Spriano et al., (2009). In a study Yanir and Doweck (2008), found the predominant site for lymph node metastasis of WDTC was found in the central compartment (level VI), at the thyroid bed and the paratracheal area, in which 95% of the

specimens were found to have metastasis. The metastatic spread to the lateral neck was substantial and inverse to gravity. Most commonly involved in the lateral neck was level III, with 68% of ND specimen found to have metastasis. Level IV was positive for carcinoma in 57% of the patients, and level II had metastasis in 54% of the ND specimens. Although metastasis was predominant in level IIa (50%), there were a small number of patients (two patients) with metastatic nodes found above the nerve, in level IIb (7% or two patients); one of them had no metastasis in the level IIa. In the posterior neck, at level V, 20% of the patients were found to have metastasis. Of this subgroup, four patients had metastases to level IV as well. However, two patients had metastasis to level V with no evidence of metastasis to level IV. In another study Spriano et al. (2009), found the 4th level was involved most commonly (52%), followed by the 3rd, the 6th, the 2nd, the 5th and finally the 1st level, with rates corresponding, respectively, to 45%, 43%, 38%, 8% and 4%.

In this study distant metastasis was found in 12 (40.0%) cases of follicular carcinoma; while distant metastasis was found in 4 (4.4%) cases of papillary carcinoma. Distant metastasis was significantly more common in follicular carcinoma than that of papillary carcinoma (OR=14.333; 95% of CI=4.146-49.550; p<0.01). In this regard Saha et al., (1996) found the incidence of distant metastasis in follicular and papillary carcinoma was 22% and 10%, respectively. Lim et al., (2002) reported that distant metastasis at presentation was in two follicular carcinoma (6%) and four papillary carcinoma (3%) patients. Distant metastasis at presentation was found in 12.9% of papillary and 34.9% of follicular cancers (Sarda et al., 2002). Rao et al., (2002) reported that 5.9% of patients with papillary carcinoma and 26.3% of patients with follicular cancers had distant metastasis at presentation. Dorairajan et al. (2002), found that distant metastasis at presentation of patients with papillary carcinoma was 4.9% of papillary carcinoma.

In the current study distant metastasis at the time of presentation was found in 16 (13.3%) patients of which 4 (3.3%) were from papillary carcinoma and 12 (9.9%) from follicular carcinoma. Distant metastasis of papillary carcinoma was lung in all cases [4 (100.0%)]; whereas distant metastasis of follicular carcinoma was bone lung and both lungs 5 (41.7%), 4 (33.3%) and 3 (25.0) cases respectively. In this regards Sarda et al., (2002) found pulmonary involvement was found in 9.1% papillary and 19.3% follicular cancers. Skeletal metastases were usually associated with bony pain and/or pathological fracture and occurred in 3.8% papillary and 31.3% follicular cancers.

Conclusion

To find out the pattern of metastasis within a short period of time, 120 well differentiated thyroid carcinoma were enrolled in the study. It reveled that there is a different patterns of metastasis where nodal metastasis dominate in papillary thyroid carcinoma 44 (36.7%) and distant metastasis dominate in follicular thyroid carcinoma12 (40.0%). The cause of this different pattern may be the different patho physiology of that two malignant tumour .For appropriate treatment it is very important to know the pattern of metastasis. To achieve a more accurate result multicentric and large scale study is required.

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Original Article

Road Traffic Accident - A Mass Disaster in Each Life : A Study on Causes of Road Accidents at Satkhira To Shamnagar Highway

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Abstract

Background: *This study is aimed to investigate the causes of road accidents at Satkhira-Shamnagar highway which is one of the busiest highways in Bangladesh. This highway is one of the most important highways in Bangladesh as it connects two most important port of the country.* ***Methodology:*** *Investigation was based on field survey that includes photogram metric survey and questionnaire survey. Questionnaires were done on drivers and pedestrians. For this purpose 100 people were selected in each category.* ***Results:*** *Investigation revealed that, according to drivers the main reason for accident is overtaking and 37% agreed on this cause. 32% and 28% drivers think that main reason for accidents are unawareness and narrow roads respectively. Almost half of the driver (47%) blamed, engine vans and such pedestrians as the main responsible groups for accident. On the other hand 38% pedestrians think unawareness is the main cause of accident. 36% thinks overtaking is the main cause and 21% thinks untrained drivers in the road are the main reason for accident. 49% pedestrians blamed drivers as the main responsible group for an accident. Conclusion: Field survey shows lots portion of the highway has poor road surface and has narrow width. Reckless driving, over speed and overtaking tendency were found as common phenomenon.*

Keywords : Highway, Drivers, Pedestrians, Accidents, Overtaking, Mass Disaster.

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Introduction

Traffic accident has become a major concern for almost every country around the world. According to WHO 1.25 million people died and 20-50 million people got sustaining road injuries from road accidents in 2013 year alone [1]. Bangladesh is also suffering a great deal due to road accidents every year. With growth of population number of motorized vehicle is increasing every day.

But due to unplanned urbanization, poor road conditions and unawareness among the drivers and pedestrians the rate of accidents are also increasing every year [2]. Statistics from the Road Safety Cell (RSC) of the Bangladesh Road Transport Authority (BRTA) show the annual fatality rate in road accident in Bangladesh is 85.6 per 10,000 vehicles which compares to rates of below 3 per 10,000 vehicles in most developed countries [3]. According to another report 9642 people were killed and 29,855 were injured due to road accidents in Bangladesh in 2016. 2305 people become permanently disabled and 52 percent of the deceased were the lone breadwinners for their families. Pedestrians suffer the most in case of accidents[4]. A study shows that pedestrians accounted for 49% of all reported fatalities and for urban areas it is 62% [5].

Main mode of transportation in Bangladesh is road transport. 70% of travels are conducted on roads [6]. So road transport plays a vital role in country's economy and social welfare[7]. Highways are generally more affected by accident than the urban roads. Because heavy vehicles duel more in highways and study shows that trucks and buses are major contributors to road traffic accidents accounting for about 58% of vehicular involvement in accidents [8].

This study investigates some causes of road accidents in one of the major highways in Bangladesh namely Satkhira-Shamnagar Highway. Some objectives are listed below:

- To study the cause of accidents and suggest corrective measures at potential location.
- To investigate the causes of road accidents in Satkhira- Shamnagar Highway.
- To suggest some remedial measures for increasing the awareness between the pedestrian and drivers.

Materials and Methods:

Investigation was based on field survey that includes photogram metric survey and questionnaire survey. Questionnaires were done on drivers and pedestrians. For this purpose 100 people were selected in each category.

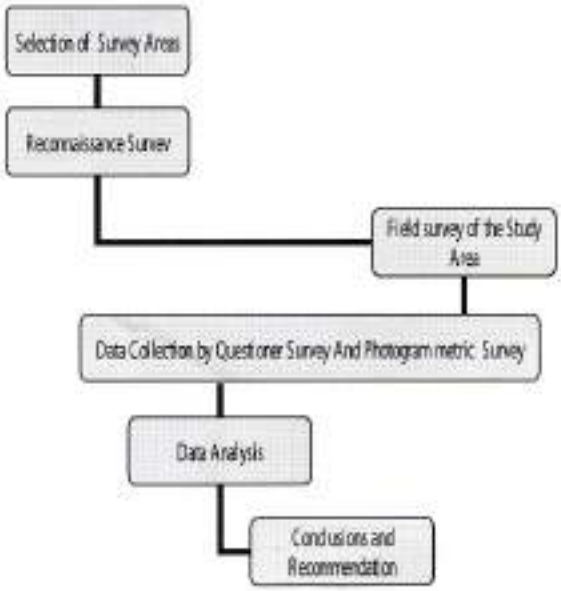

Figure1: A flow chart showing the process of study

Results and Data Analysis:

Data analysis is performed in three sections individually- questionnaires survey with drivers, questioner survey with pedestrians and photogram metric survey.

Findings from the Questioner Survey with Drivers

For this questioner survey 100 drivers were selected. Among them 65% drive buses, 25% driver trucks, 18% drive motorcycles and 6% drives private cars and others .

Field visits were made in different section of Satkhira- Shamnagar highway to collect different kind of data for investigation. The locations of study points were Bakal, Alipur check post, Debhata moar, Kaligong moar and Shyamnagor moar.

To collect information questioner were developed for both drivers and pedestrians. The questioners were developed based on the factors like causes of road accident. In addition different data and information were collected from different sources like Satkhira district police, Bangladesh Roads & Highways, Accident Research Institute. Photogram metric survey was also conducted on different sections of the highway. The flow chart of the process of study is given below.

Drivers were mostly poorly educated and only 7% of them has finished their school. 80% stopped their education after finishing primary school and 13% began high school, however didn't complete it (Fig 1). Illegal driving is another major cause for road accidents, as 10% of the drivers admitted that they do not have any sort of license or permit for the driving .

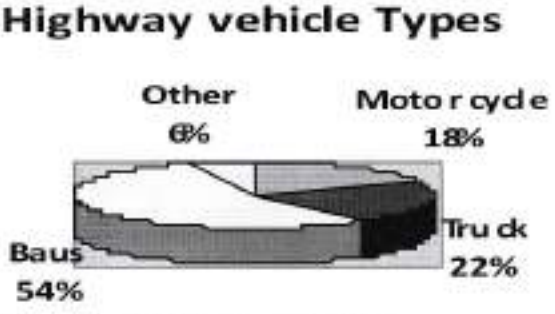

Figure 1: Vehicle types in highway

Accidents in this road are so severe that 53% of the drivers have faced at least a road accident in the last year. 37% of the drivers said the main reason for accidents is overtaking and 28% pointed out narrow road as the main reason of the accident. Another important cause of accidents pointed out by the 32% drivers is their unawareness about different traffic rules. Drivers blamed pedestrians as the main responsible group for accidents and 49% agreed this cause. Also 38% of them blamed themselves for the main reason for accident .

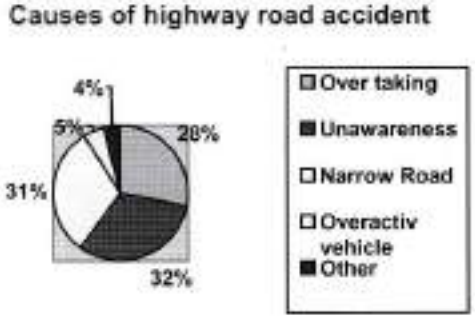

Figure 2: Causes of highway road accidents according to drivers.

This long highway is the travel route for thousands of people and for transporting goods between the two major cities of Bangladesh. As a result buses (56%) and trucks (23%) are the most common vehicles who suffer accidents regularly. Another important issue addressed by the drivers is the long driving hours with very few breaks as 42% of them has to drive more than 10 hours everyday. This long driving can easily causes fatigues and tiredness among the driver which hampers the concentration and tidiness and leads to an accident. Another important issue was noted in this survey is the driver errors during driving. 96% of the drivers do not wear seatbelts during and 39% of them use mobile phones during driving .

This is a very alarming indication and they need some training and awareness program from government and others about road accidents. Government has taken some steps for improving the condition for road accident in Bangladesh according to drivers. Drivers also have suggested different measures for remedying the current situation i.e. training for the drivers, awareness programs, improved traffic system etc.

Findings from the Questioner Survey with the Pedestrians

For this questioner survey 100 pedestrians were selected. Among them only 28% finished their graduation and 17% has completed HSC. This shows the lack of knowledge among the pedestrians which indicates the lack of awareness about traffic rules and regulations. According to 34% pedestrians the main reason for traffic accidents is the unawareness. 32% also indicated overtaking tendency of the drivers leads to traffic accident and 27% blamed the untrained drivers for traffic accident. Survey shows that night time for the most accident happening time in this highway. Also according to pedestrian buses, trucks and motorcycles are the most common vehicles who suffer accidents regularly.

In this survey pedestrians blamed driver most for a traffic accident. 47% pedestrians said the reckless driving of the driver is mainly responsible for an accident. Also 35% of pedestrians blamed themselves for an accident and 11% blamed narrow road for an accident. Errors from pedestrians also make a significant contribution for accidents. In survey it is found that 42% of pedestrians use phone while crossing the roads which needs to be reduced very quickly.

42% of the pedestrians said that the road is very risky and precautious steps needs to be taken very quickly. They have suggested many precautionary steps for reducing traffic accidents. Among them 54% agreed that awareness and bowered of Unauthorized vehicles engine van, electric vans, alam-shadhu etc on the high way building will reduce the number of accidents. While 24% thinks training to the driver and 29% thinks of widening of road will contribute in the reduction of traffic accidents. Another important thing pointed out by the drivers is the steps government should take in this matter. 45% of them think that regular road maintenance will reduce the accident rate significantly. Other suggests banning unfit vehicles, training programs for drivers and improved traffic system can play a great role in reducing highway accidents.

Discussion:

Field visit at the selected highway has revealed a lots important issues regarding road accident. Roads have many distraction elements which can hamper the concentration of a driver while driving. Poor road surface and distraction due to road repairing was found in multiple points of the highway. Reckless driving was also observed with the competition among the drivers is a very common scenario in this highway. This highlights a significant cause of accidents in this road. Also many vehicles were found not maintaining necessary lane discipline. Overtaking tendency was found among the most of the drivers. Most of the drivers avoid seat belts and helmets while driving which raise a question about their awareness level about the importance of using different safety measures while driving

All of this highlights an alarming issue about the current condition of the drivers who dwell this road frequently.

Road conditions of some portion of the highway were found very poor. Narrow width of the road has added more misery for the people who use this highway regularly[09]. It leads pedestrians to cross road whenever they want and wherever they want. Also there were view zebra crossings were found and drivers seems to pay less attention on dropping speed on this point. All of this made this road a dead trap for the pedestrians and precautionary steps needs to be taken immediately.

Conclusions:

Based on these findings some general conclusions are made. The general conclusion obtained from this study are summarized as follows:

• Based on the survey, it is found that according to drivers main reason for road accidents are over taking tendency, unawareness and narrow roads and unauthorized vehicle in the road.

• Also drivers blamed pedestrians and them selves for the main responsible group for causing an accident. They also think poor road surface and narrow roads can also cause accidents[10].

• On the other hand pedestrians thinks the main causes of accidents are overtaking tendency, unawareness among the people and untrained drivers[11].

• Electric Bike, Alam-Shadhu, Engine Vans and Such vehicles without any liscense from BRTA are the main cause of Road Traffic Accidents on the Satkhira Shamnagar High Way[12].

• Drivers have given their suggestions for reducing traffic accident. 48% voted increasing awareness, 35% voted reducing overtaking and 13% voted widening of road as a mitigation measures for road accident. About 55% common people suggest to bann all types of E-Bikes, alam-shadhu, engine vans, over this High Way.

• Pedestrians have also given their suggestions for reducing traffic accident. 52% voted for increasing awareness, 21% voted for increasing road width and 20% voted for training the drivers as a mitigation measures for road accident. Pedestrians also suggested steps for government for reducing accident percentage rates. 41% pedestrians voted road maintenance, 33% voted for training of drivers, 14% voted improving traffic system and 12% thinks banning outfit vehicles as necessary steps for government to mitigate traffic accidents.

• Photogrammetry survey shows that there are many portions of the highway having a very poor surface to drive and due to busy road there lots of distractions for drivers. There are sharp bents without proper signs. It also seen that drivers have less awareness while driving. Overtaking tendency is a very common scenario for the drivers. Also some unwanted behavior like not following traffic rules, over speed and competition among themselves, not using helmets or wearing seat belts are found among the drivers.

Based on the conclusion drawn above following observations can be made

• Mass awareness is needed among the people about traffic rules and regulations and traffic accidents.

• Government should impose traffic rules and regulations strictly.

• Government should train drivers about different traffic rules and regulations.

• There should be more highway police stations at close intervals in the highway.

• Government should ban unfit vehicles immediately.

• Separate lanes should be constructed for motorized and non-motorized vehicles.
• Seminars, campaign, rally etc. should be arranged regularly to build awareness among people.

This problem can be mitigated with the co-operation of everyone and thousands of innocent lives can be saved every day.

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Original Article

Etiologies of Acute Undifferentiated Fever in Satkhira Medical College Hospital

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Abstract

Scrub typhus usually presents as acute undifferentiated fever. This cross-sectional study included adult patients presenting with acute undifferentiated fever defined as any febrile illness for ≥ 7 days without evidence of localized infection. Scrub typhus cases were defined by an antibody titer of fourfold increase in paired sera, a ≥ 1:160titer in a single serum using indirect immunofluorescence assay, or a positive result of the immunochromatographic test. .Among 125 cases with known etiology of acute undifferentiated fever entericfever, malaria, hepatitis A and scrub typhus were major causes.

Keywords: Acute undifferentiated fever, Scrub typhus, Satkhira.

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Abbreviations: *OPD, Outpatient department; ALT, Alanine aminotransferase; ELISA; Enzymelinked Immunosorbent Assay; HIV, Human Immunodeficiency Virus; ICT, immunochromatographic test; IFA,indirect immunofluorescence assay.*

Introduction:

A variety of etiologies have been reported in patients presenting with acute undifferentiated fever in tropical areas..[1–3] Malaria, dengue fever, scrub typhus, leptospirosis, and enteric fever are common causes of acute undifferentiated fever, causing considerable morbidity, mortality, and economic burden. The incidence of scrub typhus, one of the potentially life threatening causes of acute undifferentiated fever, has continuously increased in our country. Delayed treatment in patients with scrub typhus might increase morbidity and mortality.[5–7] Therefore, early treatment

with doxycycline or azithromycin is warranted in patients who are suspected of having scrub typhus. However, clinical suspicion of scrub typhus is often difficult in patients presenting with acute undifferentiated fever in acute healthcare settings, leading to misdiagnosis or over diagnosis of scrub typhus.

Methods

Design. This cross-sectional study was conducted in Satkhira Medical College Hospital. 910 patients were treated either in ward or in OPD of this hospital from April2015 to September 2015. Of these patients, 150 had fever or history of fever.

Subjects. Information from all patients who presented with fever or history of a fever were collected from indoor and outdoor by using questionnaire and medical records. From these data, adult patients (≥18 years old) who were hospitalized with acute undifferentiated fever were included in this study. Acute undifferentiated fever was defined as any febrile illness (axillary temperature 38,4°C) with a duration of ≥7 days without evidence of localized infection by history, physical examination, complete blood count, chemistry profile, urinalysis, or chest radiography. Patients who were receiving cancer chemotherapy or immunosuppressive therapy, had Human Immunodeficiency Virus (HIV) infection or had incomplete medical records were excluded. This study was approved by the institutional review board of the hospital.

Measurements. Demographic data included gender, age, residence, and recent history (within the preceding 30 days) of fieldwork/outdoor activities, insect bite, and travel [12] Comorbidity included chronic pulmonary, hepatic or renal disorders, cardiovascular disorders, diabetes mellitus, or malignancy. Clinical features at the time of initial presentation included time of onset of illness, headache, myalgia, vomiting, abdominal pain, cough, dyspnoea, hypotension (systolic blood pressure < 90 mmHg), relative bradycardia, altered mental status, conjunctival infection, eschar, maculopapular rash, lymphadenopathy, hepatomegaly, and abdominal tenderness.[8,13] Relative bradycardia was defined as a heart rate of < 110 beats per minute (bpm) with temperature of ≥ 38.9°C, < 120 bpm with a temperature of ≥39.4°C, < 130 bpm with a temperature of ≥ 40.0°C, < 140 bpm with a temperature of≥40.6°C, or < 150 bpm with a temperature of ≥ 41.1°C.14 Laboratory data included the presence or absence of leukopenia (white blood cell count < 5,000 cells/mm^3), anaemia (hemoglobin < 12.0 g/dL), thrombocytopenia (platelet count < 150,000 cells/mm^3), prolonged prothrombin time (international normalized ratio > 1.2), hypoalbuminemia (albumin < 3.5 g/dL), hyperbilirubinemia (total bilirubin > 1.2 mg/dL), elevated transaminase (aspartate transaminase or alanine transaminase > 50 U/L), or azotemia (blood urea nitrogen > 20 mg/dL or serum creatinine> 1.3 mg/dL) within 24 hours before or after admission.[15,16] To evaluate the etiology of acute undifferentiated fever, IFA for; microscopic agglutination test for Leptospira species; immunochro matographic test for O. tsutsugamushi or Leptospira species; peripheral blood smear or antigen test for malaria; ; blood culture , serology for hepatitis A, B, or C; (ELISA) for HIV antibody, and other testing have been performed according to the clinical judgment of the physicians caring for the patients. Consequently, final diagnosis of cases with acute undifferentiated fever was estimated, based on the etiologic evaluation. Patients who showed IFA antibody titer with a ≥ four fold increase in paired sera were defined as having definite scrub typhus. Patients who showed either an IFA antibody titer of ≥ were defined as possibly having scrub

typhus.[16,17] Cases that showed serological cross-reactivity between O. Tsutsugamushi and other pathogens were assigned to unknown etiology of acute undifferentiated fever. After excluding cases with unknown etiology of acute undifferentiated fever, patients having either definite or possible scrub typhus were assigned to the scrub typhus group, whereas those having other causes of acute undifferentiated fever were assigned to the non-scrub typhus group. To eliminate information bias, all data were collected without the knowledge of final diagnosis.

Analyses: In univariate analysis, baseline characteristics of the scrub typhus group were compared with those of the non scrub typhus group. Pearson's Chi^2 test was used for categorical variables. Student's t test was used for continuous variables, and the results were represented as means ± SDs. Thereafter, all variables of $P < 0.20$ identified in univariate analysis were included in a multiple logistic regression model using forward conditional stepwise selection. Level of significance of $P < 0.10$ was used for inclusion, and $P > 0.05$ was used for exclusion.

Results

145 cases met the definition of acute undifferentiated fever at the time of initial presentation, of which 20 cases were excluded because of cancer chemotherapy or immunosuppressive therapy or incomplete medical records. Therefore, in total, 125patients were included in this study, with etiology of acute undifferentiated fever. Of 125 cases with known etiology, enteric fever was the most common cause of acute undifferentiated fever followed by acute hepatitis A, scrub typhus, primarybacteraemia, and vivaxmalaria (Table 1). Comparison of baseline characteristics of the scrub typhus and non-scrub typhus groups are summarized in Table 2. Demographically, the mean age (mean ± SD; 50.2 ± 10.5 years) of the scrub typhus group was significantly higher than that (45.7 ± 22.2 years) of the non-scrub typhus group ($P < 0.001$). In addition, male gender or recent history of fieldwork/outdoor activities or insect bite was more common in the scrub typhus group than in the non-scrub typhus group ($P < 0.05$). Of clinical features, myalgia was more frequent.

Table 1
Etiology of acute undifferentiated febrile illness (N = 125)

Name of diseases	No of cases (%)
Infectious etiologies	
Enteric fever	35(28)
Acute hepatitis A	31(24.8)
Scrub typhus	21(16.8)
Primary bacteremia	11(8)
Vivax malaria	9(7.2)
Infective endocarditis	1(0.8)
Dengue fever	3(2.4)
Non-infectious etiologies	
Drug fever or eruption	2(1.6)
Systemic lupus erythematosus	5(4)
Adult-onset Still disease	1(0.8)
Acute leukemia	2(1.6)
Non-Hodgkin lymphoma	2(1.6)
Thyrotoxicosis	2(1.6)

Table 2
Comparison of baseline characteristics between the scrub typhus and the non-scrub typhus groups (N = 125)

	No (%) of cases		
Baseline characteristics	Scrub typhus group (N=21)	Non scrub typhus group N=104	p value
Demography			
Male	11(52.38)	55(52.88)	0.010
Female gender	9 (42.85)	50 (48.07)	0.010
Age 65 years old	10 (47.61)	38(36.53)	< 0.001
Residence in a village	15 (71.42)	50 (48.07)	0.514
Recent history of fieldwork/ outdoor activities	16(76.19)	17 (16.50)	< 0.001
Recent history of insect bite	2 (9.52)	2(1.4)	0.015
Recent history of overseas travel		50 (48.07)	1.000

Comorbid conditions			
Cardiovascular diseases	4 (19)	30 (28.84)	0.141
Chronic pulmonary diseases	1 (4.7)	12(11.53)	0.091
Chronic liver diseases	0	5 (4.8)	0.375
Chronic renal diseases	0	3 (2.88)	0.593
Diabetes mellitus	4 (19.04)	15 (14.42)	0.481
Malignancy	1 (4.76)	3 (2.88)	1.000
Clinical features			
Headache	9 (42.85)	27 (25.96)	0.057
Myalgia	13 (61.90)	38(36.53)	0.001
Vomiting	5 (23.80)	11(11.53)	0.833
Abdominal pain	2 (9.52)	16 (15.38)	0.470
Cough	7(33.33)	38 (36.53)	0.860
Dyspnea	6 (28.57)	23 (22.11)	0.317
Systolic blood pressure < 90 mmHg	4 (19.04)	3 (2.88)	0.003

Baseline characteristics	No (%) of cases		
	Scrub typhus group (N=21)	Non scrub typhus group N=104	p value
Relative bradycardia	4 (19.04)	38 (36..53)	0.046
Altered mental status	5 (23.80)	13 (12.50)	0.032
Conjunctival injection	2 (9.52)	2 (1.92)	0.127
Eschar	11 (52.38)	2(1.92)	< 0.001
Maculopapular rash	4 (19.04)	9 (8.65)	0.158
Lymphadenopathy	2 (9.52)	2(1.92)	0.089
Hepatomegaly	0	20(19.23)	0.603
Spleenomegaly	0	25 (24.03)	< 0.001
Abdominal tenderness	3(14.28)	15(14.42)	1.000
Laboratory findings			
WBC < 5,000 cells/mm^3	3(14.28)	39(37.5)	0.001
Hemoglobin < 12.0 g/dL	4(19.04)	11(10.57)	0.006
Platelet < 150,000 cells/mm^3	15(71.42)	62(59.61)	0.077
Prothrombin time (INR) > 1.2	1(4.76)	22(21.15)	0.028
Albumin < 3.5 g/dL	14 (66.66)	42(40.38)	< 0.001
Total bilirubin > 1.2 mg/dL	4 (19.04)	51 (49.03)	0.001
AST or ALT > 50 U/L	19 (90.47)	59 (56.73)	< 0.001
serumcreatinine> 1.3 mg/dL	10(47.61)	28 (26.92)	0.009

Hypotension, altered mental status, and eschar were more frequent in the scrub typhus group ($P < 0.05$), whereas headache, myalgia, hepatomegaly, splenomegaly and relative bradycardia were more common in the non-scrub typhus group ($P = 0.046$). In the scrub typhus group, eschar was observed in 11 (52.3%) of 21 cases. In laboratory findings, anemia, hypoalbuminaemia, elevated transaminase, and azotemia were more frequent in the scrub typhus group ($P < 0.05$), whereas leukopenia, prolonged prothrombin time, and hyperbilirubinemia were more common in the non-scrub typhus group ($P < 0.05$).

DISCUSSION

Our data showed that the etiologic spectrum of acute undifferentiated fever was widely distributed in Satkhira. Scrub typhus was the major cause of acute undifferentiated fever next to enteric fever and acute hepatitis A. Acute undifferentiated fever has been used to characterize many febrile illnesses without any evidence of localized infection, enteric fever, scrub typhus,, leptospirosis, vivax malaria and dengue fever [1–3]. In our country we are not aware of Rickettsial fever which is causing significant morbidity. So, in this study we made a comparison between scrub typhus group and non typhus group.Scrub typhus commonly presents with fever along with myalgia, headache, cough, nausea and vomiting. It is difficult to differentiate scrub typhus from other causes of co-endemic disease like malaria, dengue and leptospirosis.[15] Therefore, a high index of clinical suspicion, exploring the history of environment exposure, and vigilant search for eschar are crucial for diagnosis.

CONCLUSION

In summary, the etiologic spectrum of acute undifferentiated fever is highly diverse in our region, and scrub typhus is one of its leading causes. Further studies are need for clinical prediction of typhus fever.

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Original Article

GAMMA GLUTAMYL TRANSFERASE AND HIGH SENSITIVITY C-REACTIVE PROTEIN IN CAROTID ATHEROSCLEROSIS

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Abstract

Introduction: *Atherosclerosis and its consequences is a major cause of morbidity and mortality worldwide. According to the health bulletin 2014, death caused by diseases of circulatory system (33.2%) was highest among all causes of death in Bangladesh. Risk factors have been identified for the development of atherosclerosis. As traditional risk factors sometimes fall short in identifying individuals at high risk for atherosclerosis, this study was carried out to find out any association of γGT and hsCRP with carotid atherosclerosis (atherosclerosis in carotid vessels).*

Materials and methods: *This cross sectional study was done in the department of Biochemistry, BSMMU. The blood sample of the study subjects were collected from the department of Radiology & Imaging, BSMMU and NINMAS, BSMMU campus who came there for carotid doppler scanning. 111 patients were enrolled and grouped into 3 groups according to the result of carotid doppler.*

Results: *The median values of γGT were 16, 20 and 17 U/L in group I, II and III respectively which were not statistically significant (p=0.717). The median values of hsCRP were 0.18, 0.24 and 1.03 mg/dl in group I, II and III respectively. These values were statistically significant (p=0.003). To find out the exact level of significance Mann-Whitney test was done which showed that the statistically significance level is between group I and group III (p=<0.001).*

Conclusion: *Conclusion was drowned that high level of γGT is not associated with carotid atherosclerosis but increased level of hsCRP is associated with carotid atherosclerosis. As these biochemical markers are simple and available throughout the country, they can add diagnostic and prognostic value of carotid atherosclerosis.*

Key words: Carotid atherosclerosis, γGT, hsCRP.

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Introduction

Atherosclerosis underlies the pathogenesis of coronary, cerebral and peripheral vascular disease, and causes more morbidity and mortality (roughly half of all deaths) in the Western world than any other disorder[1]. The South Asian countries like India, Pakistan, Bangladesh, Sri Lanka and Nepal contribute the highest proportion of the burden of cardiovascular diseases compared to any other region globally[2-3]. According to the health bulletin 2014, published by ministry of health and family welfare, Bangladesh, death caused by diseases of circulatory system (33.2%) was highest among all causes of death.

Atherosclerosis is a condition in which deposits of yellowish plaques containing cholesterol, lipoid material, and macrophage foam cells are formed within the intima and inner media of large and medium sized arteries[4]. As a result there is progressive hardening and narrowing of the arteries. Atherosclerotic events begin in childhood and remain clinically silent until they become large enough to impair tissue perfusion, or until ulceration and disruption of the lesion result in thrombotic occlusion or distal embolisation of the vessel[5]. There are some well known non-modifiable and modifiable risk factors of atherosclerosis. But traditional risk factors fall short in indentifying individuals at high risk for atherosclerosis[6]. So there is continuous search of biomarkers which are easy to measure and standardize and independent from established risk factors[7].

An atheromatous plaque consists of a grumous core of lipid (mainly cholesterol and cholesterol esters) covered by a white fibrous cap[1]. For many years physicians only look for dyslipidemia in their patients with atherosclerosis. In a study of 27,939 healthy American women, 77% of first cardiovascular events occurred in those with only moderately elevated low-density lipoprotein cholesterol (LDL-C) and 46% occurred among those with normal levels of LDL-C. Moreover, as many as 50% of first cardiovascular events occur in individuals with neither elevated cholesterol nor any other traditional risk factors[8].

Gamma Glutamyl Transferase (γGT) catalyzes the transfer glutamyl groups from gamma-glutamyl peptides to other peptides and amino acids[4]. The enzyme is present in the cytoplasm of proximal convoluted tubule, liver, pancreas and intestine. The exact relationship between γGT levels and atherosclerosis has not been fully elucidated. Chronic inflammation, oxidative stress and lipid metabolism abnormalities may contribute to the mechanism[9]. The mechanism of atherosclerosis involves the accumulation of lipoprotein mainly LDL-C and its oxidized forms[1]. γGT catalyzes the LDL-C oxidation in atherosclerotic plaques and may contribute to plaque evolution and instability. It is well recognized that oxidative stress is associated with atherosclerosis. Oxidative stress can be evaluated by the measurement of reduced glutathione (GSH) which is decreased in oxidative stress. But GSH requires special sample preparation at the time of serum collection. Serum γGT is considered in vivo biomarker of GSH demand because it recycles GSH precursors in nearly all tissues, including the hepatic recycling of reduced GSH to support glutathione-S-transferase-mediated conjugation of GSH to lipid peroxides for detoxification[10].

C-reactive protein (CRP) is an acute-phase reactant that was initially developed to evaluate patients with infection. It is one of the modifiable risk factor of atherosclerosis[1]. Concentrations of hsCRP below those seen in infection (10 mg/dl) but above healthy values (>0.5 mg/dl) (as measured by so-called high-sensitivity C-reactive protein, or hsCRP assays) can be a marker of the atherosclerotic process, because both chronic and acute

atherosclerotic processes involve an inflammatory component[4]. In 2003, in their guidelines the American heart association and the centers for disease control and prevention (AHA/CDC) has put the cut points of hsCRP in atherosclerosis. According to them, hsCRP level between >0.5 mg/dl to <10 mg/dl is considered to be a risk marker for developing atherosclerosis. hsCRP level 10 mg/dl and above is considered to be due to infection or inflammation. Through stratification or multivariable statistical adjustment, hsCRP retains an independent association with incident coronary events after adjusting for age, total cholesterol, HDL cholesterol, smoking, body mass index, diabetes, history of hypertension, exercise level, and family history of coronary disease[8]. Current evidence supports the use of hsCRP as the analyte of choice, after considering various analytes[7].

Large elastic arteries (e.g., aorta, carotid, and iliac arteries) and large and medium-sized muscular arteries (e.g., coronary and popliteal arteries) are the major targets of atherosclerosis[1]. Various techniques are used to obtain images of extracranial and intracranial blood vessels. The least invasive is ultrasound (Doppler or duplex scanning), which is used to image the carotid and the vertebral arteries in the neck. In skilled hands, reliable information can be provided about the degree of arterial stenosis and the presence of ulcerated plaques[5]. Carotid duplex scanning provides the degree of stenosis according to the Strandness criteria[11]. But the procedure requires skilled operator.

Biochemical markers add diagnostic and prognostic value of atherosclerotic disorders. Patients with carotid atherosclerosis detected by carotid duplex scanning can be investigated for the proposed biomarkers which may add diagnostic and prognostic value and add confidence of the operator on identifying operator dependent errors of carotid duplex scanning.

Materials and methods

This cross sectional study was done in the department of Biochemistry, BSMMU. The blood sample of the study subjects were collected from the department of Radiology & Imaging, BSMMU and NINMAS, BSMMU who came there for carotid doppler scanning. We enrolled 111 patients who were of >30 years of age and of both sexes. Among them 37 were normal (group I), 39 had stenosis up to 50% (group II) and 35 had >50% stenosis (group III) diagnosed by carotid doppler. We excluded subjects with liver disease, chronic alcoholism, infection, acute and chronic inflammation, pregnancy, BMI >35 and patients with malignant hypertension. Purpose and procedure of the study was explained in details and informed written consent was taken from each study subject. Initial evaluation of the patients by history and clinical examination was performed and were recorded in the preformed data collection sheet. Demographic profile and pulse, BP, height, weight etc. were measured. Then blood samples were collected to estimate the γGT and hsCRP. Association of ?GT and hsCRP was investigated with carotid atherosclerosis.

Results

This study was a cross sectional study. The study subjects were them who came for carotid doppler scanning. After getting the reports of the doppler study the study subjects were categorized into groups according the reports. The study subjects who had normal sonographic findings were grouped into group I (n=37), the study subjects who had up to 50% stenosis were grouped into group II (n=39) and the study subjects who had >50% stenosis were grouped into group III (n=35) (Table 1).

Comparison of γGT and hsCRP among different groups of the study subjects were shown in table 2. As the values of γGT

and hsCRP were non-parametric so median and IQR is shown. The median and IQR of γGT in the 3 groups were 16 U/L & 10.5-27 U/L, 20 U/L & 12-30 U/L and 17 U/L & 12-28 U/L respectively. After doing Kruskal-Wallis test these data were not statistically significant. The median and IQR of hsCRP in the 3 groups were 0.18 mg/dl & 0.09-0.50 mg/dl, 0.24 mg/dl & 0.10-0.56 mg/dl and 1.03 mg/dl & 0.18-3.01 mg/dl respectively which were statistically significant (p=0.003). To find out the exact level of significance Mann-Whitney test was done which showed that the statistically significance level is between group III and group I (p=<0.001).

Figure 1 shows no correlation between γGT and severity of atherosclerosis. Figure 2 shows the correlation of hsCRP with severity of atherosclerosis. Spearman's rank correlation coefficient r= 0.312 and p=0.001. Figure 2 shows that there is positive correlation between hsCRP and severity of atherosclerosis.

Table 1 Grouping of study subjects on the basis of ultrasonographic findings

Ultrasonographic findings	No. of patients (n)	Percentage (%)
Normal sonographic finding, Group I	37	33.33
Stenosis up to 50%, Group II	39	35.13
Stenosis >50%, Group III	35	31.53
Total	**111**	**100**

Table 2 Comparison of γGT and hsCRP among different groups of the study subjects

Parameter		Group I (n=37)	Group II (n=39)	Group III (n=35)	*p* value
? GT (U/L)	Median IQR	16 10.5-27	20 12-30	17 12-28	0.717
hsCRP (mg/dl)	Median IQR	0.18 0.09-0.50	0.24 0.10-0.56	1.03* 0.18-3.01	0.003

Kruskal–Wallis test is done to find out the level of significance.

* p=<0.001 between group III and group I which was revealed by Mann-Whitney test.

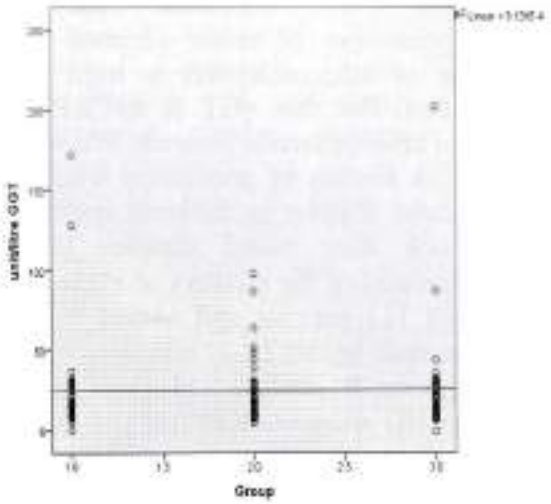

Fig 1: Correlation of ?GT with severity of atherosclerosis.

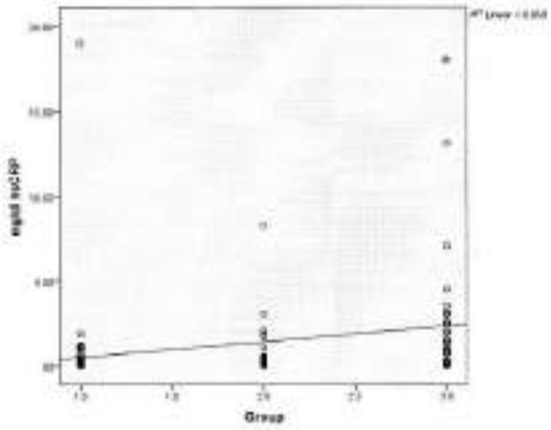

Fig 2: Correlation of hsCRP with severity of atherosclerosis.

Discussion

Atherosclerosis and its complications are the leading cause of death worldwide including Bangladesh. It is a progressive disorder starting from childhood. Early detection to prevent its progression remains the aim all over the world and risk factors have been identified for this purpose. For many years physicians only look for dyslipidemia in their patients with atherosclerosis. But traditional risk factors sometimes fall short in identifying high risk

older adults. So, there is continuous search for biomarkers for developing atherosclerosis beyond traditional risk factors.

In this cross sectional study the appropriateness of some claimed novel marker of atherosclerosis is tried to be evaluated. For this γGT & hsCRP were done in atherosclerotic patients. We went to the cross section of population who came for carotid doppler in different institutions and took their blood samples for the measurement of the markers of interest. We enrolled 111 patients and among them 37 were normal (group I), 39 had stenosis up to 50% (group II) and 35 had >50% stenosis (group III) diagnosed by carotid doppler (Table I).

Mean age in the 3 groups were not statistically significant (p=0.373) which reflects homogeneity of the groups in terms of age (Table 2). Though the number of female patients (n=25) were less than male patients (n=86) it was not statistically significant (p=0.291) after allocating them in groups.

In our study we compared the baseline characteristics of the study subjects grouped into 3 groups in terms of weight (Kg), height (m), BMI (Kg/m^2), WHR, heart rate (b/min) and blood pressure (mmHg) and none of them were statistically significant after doing one way ANOVA. Similar findings were reported by Celik et al. in 2014. We also compared the baseline laboratory findings of the study subjects in terms of FBS (mmol/l), creatinine (mg/dl), eGFR ($ml/min/1.72m^2$), ALT (U/L) and lipid profile. None of them were statistically significant. The possibility of enrolment of CKD patients is excluded by these findings as the mean creatinine levels were not significant among groups. The possibility of liver disease in enrolled patients was also excluded by this table as the mean ALT levels were not significant among groups. The mean LDL-C values of the 3 groups were not high (<100mg/dl) which supports the observation of Ridker et al. al. (2002) that only dyslipidemia is not enough in sorting the risk of atherosclerosis in people.

We have not found any association of γGT with different groups which represents that γGT is not associated with severity of atherosclerosis (p=0.717). Our finding is similar to the finding of Lee et al. (2014) who did a study in a large cohort of 9120 subjects and found no association of GT concentration with carotid intima media thickness (IMT) or plaques. Pucci et al. (2014) in their study stated that four γGT fractions have been identified in plasma and only one of them (b-γGT) in atherosclerotic plaques, but the possible role of γGT in plaque pathophysiology has not been assessed yet. This statement also supports our findings because we did not investigate for b-?GT. Celik et al. (2014) demonstrated significant relationship between serum ?GT levels and the total number of plaques and plaque structure and we did not searched for the number of atherosclerotic plaque rather we tried to evaluate the association of γGT with overall atherosclerosis. Bradley et al. (2014) in their study showed that serum γGT activity mirror graded increase in oxidative stress which was evaluated by prospective study. If we could do a prospective study, we might find such kind of positive association.

In our study we have found strong association of hsCRP with severity of atherosclerosis (p=0.003). This result is consistent with that of Yeh (2005) and Prahl et al. (2010). hsCRP is potentially proatherogenic and AHA/CDC in their guidelines has put the cut points of hsCRP in atherosclerosis. According to them hsCRP level less than 10 mg/dl but <1.0 mg/dl, 1.0 to 3.0 mg/dl, and >3.0 mg/dl are considered as low risk, intermediate risk and high risk of atherosclerosis respectively. However, in our study we found the median value of hsCRP 0.18, 0.24 and 1.03 in the 3 groups respectively. Though the values fall in the intermediate risk group, in their guidelines, the

AHA/CDC also advised that hsCRP readings should be performed twice (ideally 2 weeks apart) and averaged which could not be done by us.

Atherosclerosis is a progressive disorder the progression of which can be halted or delayed by early diagnosis and taking appropriate measures. Many markers associated with atherosclerosis have been identified in the last 50 years. Some of them act as factors and others are mere indicators. Among the novel markers, many are strictly connected with inflammation or coagulation. These markers, resulting from different mechanisms underlying atherosclerosis, might have incremental value when used in combination with traditional risk factors in identifying high-risk older adults. It remains unclear which risk markers should be further examined to improve atherosclerosis risk prediction in clinical practice. With this view we have investigated some of the markers and found positive association of hsCRP with severity of atherosclerosis. But γGT failed to be positively associated with atherosclerosis.

Conclusion

In conclusion, the findings of the present study suggest that, atherosclerosis is associated with increased levels of hsCRP.

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Original Article

Comparative study of Manual Vacuum Aspiration and electric vacuum aspiration for the management of early pregnancy failure

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Abstract

Background: *Early pregnancy failure is the commonest medical complication across the world. This is particularly important for the woman of Bangladesh. Objective: The aim of our study was to compare manual vacuum aspiration (MVA) and electrical vacuum aspiration (EVA) as the method for first trimester MTP in terms of efficacy, blood loss, duration, acceptability suitability and complication.* ***Methods:*** *This was a prospective randomized study done in Obstetrics & Gynaecology department of Khulna medical college & Jessore medical college. Over a period of 18 months from January 2015 to June 2016, a total of four hundred women presented with spontaneous miscarriage with gestational age < 12 weeks with no sign of septic abortion and no history of pregnancy with fibroid uterus were included in the study.* ***Results:*** *Four hundred patients underwent random selection either MVA group (n = 200) or EVA group (n= 200). Cases were compared with respect to age, parity, gestational age, risk, blood loss, time taken for the procedure & complications. The distribution of age, parity, gestational age and indication of procedure were similar in both groups. The mean duration of procedure was not significant (P>0.86) in EVA group compared to MVA group. Product of conception obtained from uterine cavity was significantly higher (P<0.002) in EVA group compared to MVA group. Similarly the duration of hospital stay was significantly lower (P<0.01) in MVA group compared to EVA group.*

Conclusion: *MVA is simple safe, effective procedure. Its portability and low cost make it a technique best suited for the infra structure in rural area. MVA is a promising method compared to EVA which can be practiced widely in rural area where the access to medical facilities are limited, high-tech equipment are not available, and also power supply are not available.*

Key words: Manual vacuum aspiration, Electric vacuum aspiration, Early pregnancy failure. Medical termination of pregnancy.

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Introduction:

The miscarriage of an early pregnancy is the commonest medical complication, effecting 10-20% of clinically recognized pregnancies [1,2,3]. In 2010, an estimated 653000 menstrual regulation (MR) procedures were performed in Bangladesh. In addition, there were 647,000 induced abortions, the large majority was unsafe. Approximately 231,000 women were treated in facilities for complications of induced abortion[4]. Unsafe abortions are a serious public health problem in Bangladesh and also a leading cause of maternal death. Even it persists in Bangladesh as an important cause of morbidity among women. Though the role of unsafe abortion as a cause of maternal deaths appears to have declined greatly over the recent decade[5]. It can be serious health, economic and social consequences for woman and for society in short term and some extent in long term as well[4].

The World Health Organization (WHO) estimates that 46 million pregnancies end in abortion each year and nearly 20 million of those are thought to be unsafe. An estimated 67,000 women die each year from unsafe abortion and hundreds of thousands more women suffer serious injuries and disabilities. About 13% of maternal deaths are due to unsafe abortion[6]. Unsafe abortions are a serious public health problem in Bangladesh and also a leading cause of maternal death. Even it persists in Bangladesh as an important cause of morbidity among women[7].

Manual vacuum aspiration as a means of removing uterine contents was pioneered in1958 by Yuantai and Xianzhem in China that ultimately lead to the technique becoming a common and safe obstetric procedure[8,9]. Harvey Karmann in United States defined the technique in the early 1970s with the development of Karmann cannula, a safe, flexible that replaced the previously used hard metal cannula which reduced the risk of perforation[10].

Out of all the recognized procedure of first trimester MTP, electric vacuum aspiration has been used since years. Vacuum aspiration has become standard surgical procedure for safe early pregnancy termination. Manual vacuum aspiration (MVA) is an alternative that is well suited for use as a clinical procedure which could have advantages both for the patient and health care system. The present study was conducted to compare MVA and EVA as the method for first trimester MTP in terms of efficacy, blood loss, duration, acceptability, suitability and complication. It also to evaluate MVA that can be practiced in rural area where the access to the medical facilities are limited.

Material & Method: This prospective randomized study was done in obstetrics & gynaecology department, Khulna medical college hospital and Jessore medical college hospital over a period of 18 months from 1st January 2015 to 30th June 2016. During this period, four hundred women presenting with spontaneous miscarriage (blighted ovum, incomplete or missed abortion) with gestational age <12 weeks and no evidence of septic abortion (fever >37.7 c, purulent vaginal discharge, tachycardia or abdominal pain) were included in the study. Patient with septic abortion, ectopic pregnancy, molar pregnancy, pregnancy with fibroid uterus and unwilling patients were excluded from the study. Among 4 hundred patients, 2 (two) hundred patients underwent MVA and EVA were done in remaining 2 (two) hundred. The patient was selected randomly. Pre procedure investigations done were haemoglobin estimation, blood grouping & Rh typing, random blood sugar. Written informed consent was taken. The procedure and its probable complication were explained to the patients.

Both MVA & EVA were done in examination room under local (para cervical block) anesthesia with injection Diazepam 10 gm given intramuscular at the beginning of the procedure. The patients in each group with missed abortion and closed cervical os were given 200 µgm of misoprostol per

misoprostol per vaginally 3 hours before the procedure. 400 mg of ibuprufen was given to the patient orally an hour before MVA & EVA. 10 unit oxytocin was given to every patient during the procedure. All the procedures were conducted by consultants & senior registrars.

In MVA vacuum was created in 60 ml double valve MVA syringe ie the syringe was charged. The uterus was re-evaluated by bi-manual examination. In EVA various parts of aspiration apparatus were connected in a way that they form a continuous system ie one plastic pipe was connected form flask to the electric pump and another was connected form flask to the aspiration cannula. The electric pump was set in action and the negative pressure was set in the range of 0.4-0.8 kg/m^2. The evacuated material was inspected for chorionic villi and also the amount of blood loss and total time taken were estimated in both of the procedure.

After the procedure patients were transferred to the recovery room. Most of the patients were discharged from there within 4-6 hours when stable. Antibiotic & pain killer ware given in all cases for 5 days. Patients were followed up after one week to see any sign of infection including pain in lower abdomen, fever, vaginal discharge. Bimanual examination was done to assess the size of uterus and vaginal bleeding. In any complication management was done accordingly.

The data of the patients were collected on a structured questionnaire and analyzed by using spss-17. Chi-square test was used to compare the percentage. The p<= 0.05 was taken as significant.

Result: Between January 2015 to June 2016, 400 (four hundred) patients with first trimester spontaneous abortion were included in this study and half underwent MVA group (n=200) or EVA group (n=200) l. Table-I obtained the six variables age, parity, gestational age, indication of procedure, risk factor and previous history of abortion. The demographic and obstetric variable of both groups were similar, no statistically significant difference .The age of the women range from 18-40 years. The mean age of the women was 26.9 years in MVA group and 25.3 years in EVA group. The parity ranged from 0-4 and gestational age ranged from 5-12 weeks. The mean gestational age in MVA group was 9.4 weeks and EVA group was 9.6 weeks. Majority patients of both group, procedure was performed under para cervical block with sedative (Injection–Diazepam 10mg). Only 2 (1%) of the MVA cases and 4 (2%) of the EVA cases required additional administration of general anesthesia due to intolerability of pain inspite of para cervical & systemic analgesia.

The complications of the procedure which includes blood loss >100ml, cervical trauma, perforation, post operative pain & incomplete evacuation. Overall, the complications was significantly higher (P<0.001) in EVA group 28 (14%) compared to 20 (10%) in MVA group (Table-II). There were no statistically significant difference in complete evacuation rate- 98.5 % for EVA group and 99 % for MVA group (p=0.99).

There was no mortality. Only two patients needed blood transfusion and five patients in both groups had incomplete evacuation and underwent standard curettage in operation room. There was no uterine perforation in both groups.

Product of conceptions obtained from uterine cavity which was significantly higher in EVA group (24.4gm) compared to (18.8gm) in MVA group (p<0.002). The mean duration of hospital stay was significantly higher (p<0.01) in EVA group (5.5 hrs) compared to (4.5 hrs) in MVA group. But there was no statistically significantly difference in duration of the procedure in both group (P=0.86).

Table1: Baseline variables of the study population

	MVA (n=200)	EVA (n=200)	P value
• Age	26.9	25.3	0.72
• Parity (%)			
Primigravida	71	77	0.20
Multigravida	129	123	0.67
• Gestational age (weeks)	9.4	9.6	0.40
• Indication of procedure (%)	21	38	0.00001
Blighted ovum	132	116	0.89
Incomplete abortion	47	46	0.57
Missed abortion			
• Risk Factors (%)			
DM	26	17	0.99
HTN	3	2	0.99
Previous LSCS	5	7	0.0001
Previous history of abortion	42	48	0.08

Table 2: Complications in both groups

Complication	MVA (n=200)	EVA (n=200)	P value
(I) During procedure			
Blood loss>100ml	0	1	
Cervical trauma	0	0	
Uterine Perforation	0	0	
(II) During follow-up			
Pain abdomen	10	17	0.0001
Execs bleeding	8	7	0.89
Incomplete evacuation	2	3	0.99
Total	20	28	0.001

Table3: Out come of the procedure in both groups

Outcome of procedure	MVA (n=200)	EVA (n=200)	P Value
Product of conception from uterine cavity (gm)	18.8	24.4	0.002
Duration of procedure (min)	8.5	7.6	0.86
Duration of Hospital stay (hrs)	4.5	5.5	0.01

Discussion: Vacuum devices, first described in medical literature in 1800s, allowed the development of suction aspiration methods of abortion. The invention of the Karman cannula, a flexible plastic cannula which replaced earlier metal models in the 1970s, reduced the occurrence of perforation and made suction aspiration methods possible under local anesthesia [11]. Manual vacuum aspiration is a method of uterine evacuation that enables women with early pregnancy loss to be treated safely in the office or emergency department rather than the operating room[12]. Use of MVA includes endometrial biopsy, uterine evacuation in case of pregnancy failure and pregnancy termination. Today women are diagnosed by ultrasound prior to haemorrhage or infection and can be safely managed by office based manual vacuum aspiration (MVA). The instrument set includes the 1pas aspirator used for an office based MVA is reusable after appropriate processing[13].

In our study, maximum number of gestational age ranged from 8 to 11 weeks, median gestational age being 9.4 weeks and 9.5 weeks for each procedure. In retro spective Cohort analysis of Goldberg et.al the women undergoing either MVA or EVA were up to 10 weeks gestational age and West fall studied MVA up to 10 weeks gestation which are compatible with this study [11, 14].

In the present study, the mean procedure time was 8.5 min for MVA group and 7.6 min for EVA group. So, the mean duration of the procedure was not significant, p (>0.86) in EVA compared to MVA, Thus implying that there is no advantage of MVA over EVA in time taken for performing either procedure. The average hospital stay was 4.5 hrs for MVA groups, 5.5 hrs for EVA group. So the duration of hospital stay was significantly lower ($p<0.001$) in MVA group. These results were agreed with Tune alp O et. al study, Koontz SL et al and kulier R et al study [15, 16, 17].

The blood loss was more in EVA group. Yet the P value is 0.99 which was not statistically significant. Similar observations

were Goldberg et.al who found that blood loss was apparently lower with MVA group. The lower abdominal pain, the common complaint noted is both procedure followed by excess bleeding were found more in association with those who had Cu-T insertion which is compatible with kamel Helen et all [11].

Over all complication (P<0.01) was more in EVA group compared to MVA group. in the present study. But most of these were minor complication and were managed easily. Two patients in MVA group and three patients in EVA group had needed re- evacuation of the uterus due to retained product of conception which was confirmed by ultrasonography. Data from a major retrospective study of 1677 MVA procedure for elective abortion showed 99.5% effectiveness and minimal complication: (0.5% repeat aspiration, 0.7% infection & 0.6% uterine perforation[14]. Several studies done else –where showed the same result for MVA. Paul et al 2002 showed 98% efficacy for MVA, Hemlin & Moller 2001 showed it to be 98%, Goldberg et al found MVA to be effective in 97.8%. Westfall also found MVA to be effective in 99.6% [14, 18-20]

In our study manual vacuum aspiration was associated with a low rate of complication but no maternal death. A few factors may be associated with its low complication rate. Cervix primed with misoprostol, prior cervical dilatation with small cervical dilator decreases the chance of cervical injury and / or uterine perforation. The surgeon in this study was quite efficient, experienced in MVA and very comfortable with intrauterine procedure.

Conclusion: MVA is simple safe, effective procedure. Its portability and low cost make it a technique best suited for the infra structure in rural area. MVA is a promising method compared to EVA which can be practiced widely in rural area where the access to medical facilities are limited, high-tech equipment are not available, power supply erratic and maintenance of instruments not up to the mark.

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Original Article

Treatment Outcome of Open Reduction and Internal Fixation of Supracondylar Fracture of Humerus in Children with Lateral Approach

MMA Siddiqui[1], AHSM Kamruzzaman[2], AK Sikder[3], A Kader[4], PK Das[5], E Hafiz[6], F Alam[7]

Abstract

Background: *Injury is the leading cause of death and disability after infancy of children. Supracondylar fracture of humerus comprises 17% of all pediatric fractures & are second in frequency of fore arm fracture. Operative procedure is an effective and safe method of primary procedure and has an effective out come. Lateral approach is suitable for this operative procedure. This study revealed the advantage and draw back of the approach. Functional out come was also assessed.* ***Methods:*** *The study was conducted at Ortho surgery department of Sadar hospital, Satkhira. This survey was done among 35 patients with closed supracondylar fracture of humerus in children under 14 years of both male and female. Open reduction and internal fixation were done among all children with lateral approach under general anesthesia. Maximum patients were discharged on 3rd post operative day. These patients were advised to attend at 2, 4, 6, 12 and 24 weeks. K wires were removed at 4 weeks. 1st radiograph of operated elbow done on 1st post operative day and the final radiograph of both elbows done on final visit. Patients were assessed both clinically and radio logically for carrying angle & range of movement of elbow. Evaluation done after 6 months according to Lagrange-Rigault's range of motion scale.* ***Results:*** *In this study 35 patients included, among them 26 (74.29%) were male while 9 (25.71%) were female. Mean age was 7 years ranging from 4-14 years. Right elbow was involved in 19 (54.29%) where left elbow was involved in 16 (45.71%). These factures were occurred mainly due to fall. 4 cases were drop out from our follow up among 35 cases. Out of 31 cases 25 (80.65%) has excellent results, 4 (12.09%) had good results, 2 (6.45%) patients had poor results. While none had bad results according to Lagrange Rigault's range of motion scale.* ***Conclusion:*** *Though lateral approach is little bit difficult on operative procedure for Supracondylar fracture humerus, but it is preferable due to easy perform and less time consuming. The out come is better so we recommend this approach while operative procedure is done.*

Key wards: Supracondylar fracture, Open reduction and internal fixation.

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Introduction

Injuries during childhood is one of the common cause of death and disability for children after infancy in developed and developing countries [1]. In Bangladesh childhood injuries contribute significant mortality and morbidity [2]. Boys are more often Injury than girls. Supracondylar fracture of humerus is one of the most common fracture among the pediatric population. Pediatric elbow fractures (86%) has a common history of fall. Supracondylar fracture of humerus are one of the common fracture of elbow in children [3]. Two varieties of supracondylar fracture of humerus in children E.G extension type 97%, felxion type (3%) [4]. This facture is classified according to Lagrange and Rigault's classification of supracondylar fracture of humerus. This fractures has 4 types- Stage 1: undisplaced fracture, the anterior cortex is broken, stage 2 anterior & posterior cortex is fractured with no or minimal displacement, stage 3: fracture with substantial displacement, stage 4: substantial displacement fractures with no contact between bone fragments [5]. Treatment modalities differ according to type of fracture. They are close reduction and casting, open reduction and internal fixation (ORIF) and percutaneous pinning (PCP) [6.] Anatomical reduction is the main treatment aim in supracondylar fracture of humerus. When anatomical reduction can't achieve by close reduction, open reduction is indicated. Open reduction can be done without increase risk of complications [7]. Operative procedure is effective and safe method of primary treatment and the out come is satisfactory. Open reduction is recommended is these grievous injuries [8]. Though the functional & cosmetic out come is controversial but many surgical approach are postulated. The ultimate decision depends on anatomical structures involved, types of fracture and the experience of surgeon. The main aim of the study was find out the advantages and draw backs of lateral approach as well as functional outcome of

Materials & Method:

This study was done at Ortho Surgery department of Satkhira Sadar Hospital, which is 100 baded. Total 35 cases were included in this study. In the study all patients were under 14 years with history of closed supracondylar fracture of humerus, with no neurovascular deficit. After giving general anesthesia, proper scrubbing and draping was done and close reduction was attempted on all patients. When this procedure failed, operative procedure was conducted. Lateral approach was the choice for exposing the facture site. After cleaning, washing the fractured fragments were reduced and fixed by two K wires with proper diameter placed form lateral side both. During operative procedure it was revealed that failure of close reduction due to inter position of brachialis muscle in between two fragments. Subcutaneous were sutured interruptedly by vicryl and the skin closed with proline. Ends of K wire were left out side the skin for easy removal. Long arm back slab was given. After checking the wound and taking post operative radiograph, the patients were discharged on 3rd post operative day. The patients were advised to attend at 2, 4, 6, 12 & 24 weeks. Sutures were removed on second week visit and the Radiograph was taken. On 4th week visit the K Wires were also removed without anesthesia at out patients door. Exercise for range of motion began. For assessment the patient were advised to attend at out patient door on 6, 12, 24 weeks. On this assessment time radiograph of both elbows was taken. Patients were re-evaluated clinically and radio logically for carrying angle and range of motion. Final evaluation was done after six months according to Lagrange-Rigault's range of motion scale. Excellent result=normal elbow, good result=slight deformity in mobility <10 degree in flexion and extension and 20 degrees in all, poor result=mobility deficient more than 20 degrees and bad result= mobility deficiency> 50 degree.

Results: In this study 35 patients were included. Male patients were 26 (74.29%) and female were 9 (25.71%). Which is shown table-1. Mean age was 7 years ranging from 4-14 years. Right sight was involved in 19 (54.29%), and left side was 16 (45.71%) shown in table-2. Fall was the main cause. 4 (11.42%) cases were drop out from our follow up out of 35 cases. In this drop out cases 02 came to us for removing pin. But did not come for the further follow up, Other 2 were completely missing form our observation. We analyzed that 25 (80.65%) had excellent results 4 (12.09%) had good results and 2 patients (6.45%) had poor result. None had bad results according to Lagrange Rigaults range of motion scale shown in table-3. None of the patient had major post operative complications like neurovascular injury, compartment syndrome, deep wound infection. Only 2 cases (5.71%) developed pin site infection and all of them controlled after proper oral antibiotic administration and completely resolved after removal of pin on 4th week.

Discussion: Supracondylar Humerus fracture is one of the commonest fracture in children and Orthopedic Surgeon faces this challenge frequently. Treatment goal for this fracture should be to achieve both functional and cosmetically acceptable to all and having the full range of movement. Definitive procedure 10 should be followed for this purpose. There are many option for treating the supracondylar fracture. E.G close reduction, percutaneous pinning, open reduction and internal fixation and external fixation. So it is clear that, only single option is not suitable for treating this fracture perfectly. In this study we assessed out come of lateral approach used for open reduction and internal fixation when necessary for this fracture. Total 35 patients in our study, though we had taken careful follow up procedure but 4 (11.43%) cases were dropped out, where as according to study of PGM, Lady Redding Hospital, Peshwar, where missing follow up was (18.06%) 11. In our study to 5.71% cases developed pin site infection, all of them responded oral antibiotics and completely resolved after removal of pins on 4th week. The report rate of pin tract infection associated with supracondylar humerus fracture ranges from <01% to 6.6%> 12. According to Gupta et al, on pin tract infection in a series of 150 fractures which resolved with oral antibiotic and pin removal [13]. Another study conducted by Bayisenga J there were 52% male where 48% female. That difference was reported because boys behaviour in matter of their players and hazardous activities 14. In this study we followed Lagrange and Rigault's classification of supracondylar fracture of humerus while Gurkman V et al classified this fractures according to gartland's classification [15]. In our survey we assessed result according to Lagrange-Rigault's range of motion scale which was also used by Ensaf Daran et al in their study [16]. In our country patients come late to proper center. due to 1st visit to bone setters, which was revealed in our study. Bayisenga J et al in their study pointed out that the referral system in there country was main reason for let presentation of patients [14].

On this study we found that 25 (80.65%) had excellent result, 04 (42.09%) had good result, 02 (06.45%) had poor results, while none had bad results according to Lagrange-Rigault's scale range of motion. This result was comparable to both local and international study. In our study excellent and good result (93.05%) are comparable to earlier study of Philip (82%), Kumar (84%) and Umer (100%) [17, 18, 19].

In our study no ulnar nerve injury was observed. Ulnar nerve injury occurs rarely in supracondylar fracture, but this nerve most commonly is injured after percutaneous pinning [20].

Conclusion: In our country the rate of occurrence of supracondylar fracture of humerus is very high. So, this fracture should need proper management. After failing of close reduction, open reduction and internal fixation should be done. If open

reduction and internal fixation is planned, lateral approach is the treatment of choice though exposure in this approach is little bit difficult but easy to perform and less time consuming. Treatment outcome is better for this reason we recommend this approach for open reduction and internal fixation.

Table-1: Gender distribution

	No. of patients (percentage)
Males	26 (74.29%)
Female	9 (25.71%)
Total	35 (100%)

Table-2: Limbs involved in our study:

	No. of patients (percentage)
Right Side	19 (54.29%)
Left Side	16 (45.71%)
Total	35 (100%)

Table-3: Results according to Lagrange-Rigault's range of motion scale

	No. of patients (percentage)
Excellent	25 (80.65%)
Good	04 (12.09%)
Poor	02 (06.45%)
Total	31 (100%)

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Original Article

Comparative Study of Combination of Propofol-Fentanyl with Ketamine-Diazepam in Dilatation & Curettage

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Abstract

Background : *Dilatation and Curettage (D&C) is a most common operative procedure in obstretics and gynaecology. For D&C an anesthesiologist usually administer sedation, analgesia and anesthesia to patient.* ***Methodology :*** *This prospective randomized study was carried out to compare the safety, efficacy, tolerability and cost effectiveness of Propofol Fentanyl combination to Ketamin diazepum for sedation analgesia during D&C. Total 75 patient age between 12 to 50 years. ASA physical status I and II scheduled to under go D&C were included in this study. Patient were randomly allocated into two group. Group-A (no.35) Sedation and analgesia with Propofol 1.5mg/kg body weight and Fentanyl 1μg/kg body weight intravenously and intravenous Propofol maintain at 1/3rd of previous dose. Group-B (no.40) sedation and analgesia with Ketamin 2mg/kg body weight and diazepam 5-10mg intravenously through out procedure.* ***Results :*** *Both group showed satisfactory sedation and analgesia for D&C. Incidence of hypertension and Tachycardia were more in group-B then group-A. Agitation and hallucination were found in patients in group-B. Recovery time was more in group-B then group-A. Sedation and analgesia of group-A found 7 time more costly then group-B. Both regimens found safe, effective and tolerable for D&C. How ever recovery time in more Ketamin Diazepam but more cost effective then Propofol Fentanyl. This is a concern in developing country like Bangladesh.*

Key word: Dilatation & Curettage, Ketamin, Diazepum, Propofol, Fentanyl.

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Introduction:

D&C used to removal of product in uterine cavity and also diagnosis purpose. Surgical treatment is limited along with risky outcome such as bleeding, infection or improper post operative pain control. There are two basic choices of anesthesia available for completion of the procedure sedation analgesia and general anesthesia. Sedation and analgesia is commonly administered in order to carryout the procedure successful. General anesthesia is usually provided heart disease and when other complications occur. It is important that more than to drugs are to be avoided because of unpredictability of drug

interaction, increase incidence of side effect. Combination of short acting drug like Propofol and Fentanyl is useful procedural sedation and analgesia regimen. Propofol produces sedation and amnesia and fentanyl produces analgesia and sedation and this combination is useful for D&C.

Ketamin is Phencyclidine derivative it is a safe and effective sedative agent. Ketamin produces a dissociative state combination of analgesia, amnesia and sedation at sub anesthetic dose with minimal effect on the airway and vital reflex. It is best if combined with an ant cholinergic for control of secretion and with a benzodiazepine to prevent agitation and hallucination.

Material & Methods:

We performed a prospective randomized study on 75 patient in female sex, age between 12 to 50 years ASA physical status I and II scheduled to undergo D&C at RMCH in one calendar years from January 2013 to January 2014. Patient with anatomical airway abnormalities, severe cardiovascular and respiratory disease and severe psychological problem were excluded from the study. During preprocedural assessment every patient undergo throughout physical examination with ASA classification. Total procedure was explained to every patient and informed consent was taken. A base line pulse, blood pressure, respiratory rate, ECG and SpO_2 were recorded.

Patients were randomly allocated into two groups. Group-A contained 35 patients received propofol 1.5mg/kg body weight intravenously over 60 second then fentanyl 1µg/kg body weight intravenously. Injection Propofol was maintained 1/3rd of previous dose and group-B contained 40 patients received atropine 0.4mg intravenously to prevent excess secretion. Then a loading dose of Ketamine 2mg/kg body weight was given intravenously over 60 second and Diazepum 5 to 10mg given intravenously throughout procedure. Anesthesiologist was constantly available to observe and record patients heart rate, blood pressure, respiratory rate, SpO_2 and continuous ECG in Lead II. If initial sedation was inadequate repeated dose as necessary to accomplish the procedure, additional increment dose of Ketamine 0.5mg/kg/ body weight was given intravenously to patient in group-B and injection Propofol was increase up to 1/3rd of previous dose in patient group-A. Additional O_2 was given with face musk in SpO_2 found 92% or less. After completion of D&C the patient was brought to recovery room and nursed in left lateral position. Patients level of consciousness, heart rate, blood pressure, SpO_2 and ECG were monitored until recovery of the patients.

A full set of resuscitation equipment including suction apparatus, O_2, a ambubag, resuscitation drugs and defibrillator were available through out sedation analgesia and recovery to combat any adverse event. Side effect during sedation and recovery like SpO_2 less than 92%, systolic blood pressure more than 30% of the base line record or systolic blood pressure less than 80mm of Hg, arrhythmia, vomiting, agitation and hallucination were observed, recorded and managed in both group. The cost of sedation analgesia in both groups also calculated and recorded.

Result:

Table-1: Indication of D&C procedure.

Indication	Group-A N=35	Group-B N=40	Total
Removal of uterine product (placenta)	13(54.16%)	11(45.83%)	24
Incomplete abortion	19 (46.34%)	22(53.65%)	41
Diagnosis	5 (62.5%)	3(37.5%)	8
Others	1(50%)	1(50%)	2

Table-2: Anesthetic complication during procedure and recovery.

Complication	Group-A N=35	Group-B N=40	Result
Inadequate sedation	6	5	Non significant
De saturation	3	6	Significant
Hypertension	1	7	Significant
Hypotension	3	0	Significant
Tacchycardia	1	6	Significant
Bradycardia	2	0	Significant
Vomiting	2	3	Non significant
Hallucination	0	6	Significant
Total	18 (51.41%)	33(82.5%)	

Table-3: Comparison of mean procedure time and mean recovery time between two groups.

Group	Mean procedure time in minute	Mean recovery time in minurte
Group-A n=35	18.5±5.5	58.2±6.2
Group-B n=40	15.7±6.5	92.4±8.3

There was no serious adverse event reported in any patients of the both group anesthetic complication during procedure and recovery were observed and recorded Table-1. 5(12.84%) patients in group-A 6(15%) patients in group-B required additional dose of sedative drugs during procedure. De-saturation was noted in 3(8.57%) patients in group-A and 6(15%) patients in group-B. Hypertension was observed in 1(2.85%) patients group-A and 7(17.5%) patients in group-B. Hypotension was recorded in 3(8.57%) patient in group-A and no occurrence of hypotension in group-B. Tachycardia observed in 1(2.85%) patient in group-A and 6(15%) patients in group-B. Bradicardia observed in 2(5.71%) patients in group-A and no occurrence of bradicardia in group-B. Vomiting was observed in 2(5.71%) patients in group-A and 3(9.75%) patients in group-B. Agitation and hallucination were reported in 6(15%) patients in group-B and no occurrence of agitation and hallucination were reported in group-A. Mean procedure time and mean recovery time was calculated in both group. Mean procedure time was 15.7±6.5 minute in group-B and 18.5±5.5 minute in group-A. Mean recovery time was 58.2±6.2 minute in group-A and 92.4±8.3 minute in group-B. Cost status of sedation and analgesia regimen in both groups was calculated. It was Taka 350 in group-A and Taka 50 in group-B. Statistics showed that it was 7time more costly in group-A than group-B.

Discussion:

D&C is an effective treatment of retained product in uterus. The two basic choice of anesthetic technique sedation and general anesthesia which have advantages and disadvantages. Sedation is usually preferred for D&C unless otherwise general anesthesia is indicated for complications such as perforation of uterus, profuse bleeding. We tried to compare the effectiveness of sedation in patient during D&C between Propofol fentanyl combinations with Ketamine diazepum combination. D&C was done successfully in patients of both groups. There were few incidence of inadequate sedation in both groups which required additional dose of sedative drugs. SpO_2 fall was noted in 3(8.57%) patients in group-A and 6(15%) patients in group-B and the difference between two groups was statistically significant. Transient hypoxia can occur occasionally but are usually recognized and managed appropriately and incidence in less common with supine position. Hypertension was observed in 1(2.85%) patients in group-A and 7(17.5%) patients in group-B and difference between two groups was statistically significant. Tachycardia observed in 1(2.85%) patients in group-A and 6(15%) patients in group-B and difference between two was statistically significant. Hypotension and bradycardia observed in few patients

Propofol Fentanyl in group-A. No occurrence of hypotension and bradycardia observed in group-B with Ketamine and Diazepum. These few incidence hypotension and bradycardia were transient and minor in convenience. In this study no signs of cardiac ischemia recorded in ECG tracing in both group during D&C. Risk factor for cardio pulmonary complication includes known or unsuspected pre-morbid condition and can be avoid with careful patients selection preparation and adequate monitoring. Vomiting was observed in few patients in group-B not in group-A. Though Diazepum was given but agitation and hallucination reported in 6(15%) with Ketamine. Over all this agitation and hallucination were transient and managed with additional dose of diazepum. Mean recovery time was more with ketamine diazepum then with propofol fentanyl and difference between two group was high significant. Ketamine is a safe useful procedural sedation agent but it delays recovery when used with long acting Benzodiazepine like Diazepum. A low doses full general anesthesia is not achieved rather a dissociative state in which air way and respiratory tone are maintain. Dangers of air way compromise and cardio respiratory instability are suggested to be less with Ketamine. Propofol provide safe and effective sedation during D&C, as well as improve recovery and in the study with shorter acting opioid fentanyl also result rapid recovery. D&C in low ASA grading (III-V). Patients should be provided with O_2 therapy and cardiovascular monitoring. These involvement of an anesthesiologist in administration of intravenous sedation and air way management should be actively consider. In developing country like Bangladesh cost of drugs is a matter of consideration during sedation procedure. Both sedation regiment proved effective for D&C but cost is very much higher 7 time in group-A with propofol fentanyl then in group-B ketamine diazepum.

Conclusion:

D&C is a procedure for diagnosis and treatment, anesthesiologist to observe and take care of the patient. Procedure usually done by different sedation regiment, unless general anesthesia is indicated.

Result from this study we can conclude D&C can be successfully done administering both sedation regiment complication like hypertension, tacchycardia, agitation, hallucination were more with Ketamine, Diazepum but easily correctable and manageable. Recovery time was also more with ketamine, however regarding the cost of sedation regiment Ketamine Diazepum found more cost effective then Propofol, Fentanyl which is a considerable matter in developing country like Bangladesh.

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EDITORIAL POLICY

Information to Authors
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Three copies of the article and the manuscripts on a CD should be submitted to the editor. Manuscripts should be typed in English on one side of white good quality paper with margins of at least 25 mm and using double space through out. Each component of the manuscript should begin on a new page in the sequence of:

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Panday AK. Rationalization of regimens of treatment of Kala-azar with sodium stibogluconate in India: a randomized study. Br Med J 1988; 196: 1556-60.

2) Personal author(s) in a book:

Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response. 5th ed. New York. Harper and Row, 1974; 406.

3) Editor, complier as number in a book: Robbins SL, Cortan RS, Kumar V, eds. Pathological Basis of Disease. 3rd ed. Philadelphia: WB Saunders, 1984: 236 - 48.

4) Chapter in a book:

Weinstein L, Swartz MN, Pathologic properties of invading microorganisms. In: Sodeman Jr, Sodeman WA, ed. Pathologic physiology: mecganism of disease. Philadelphia: WB Saunders, 1974: 457 - 72.

5) Dissertation or Thesis:

Uddin MM, Study of Hypoglycemic Effect of Fenugreek (Methy) in Type 2 Diabetic Patients (Thesis). Bangladesh: Rajshahi Medical College under Rajshahi University, 2005.

Tables

Each table should be typed on separate sheet. Table should have brief title for each, should be numbered consecutively using roman numerals (I, II, V, X) and be cited in the text in consecutive order. Internal horizontal and vertical rules should not be used.

Illustrations

All drawings should be made with black Indian ink on white paper. Letters, numbers and symbols should be large and thick enough to be visible if and when the figure is reduced for publication. Photographs and photomicrographs should be supplied as glossy black and white prints un-mounted. Figure number, an indication of the top edge and name of first author should be marked lightly on the back of each figure with soft pencil. Legend for each illustration should be referred to as figures numbered consecutively in the text in Arabic numerals (1, 2, 6, 9).