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## Instructions to the Authors

The Journal of Patuakhali Medical College invites the submission of original articles based on health, medical science, case reports, review articles and letters to editors. The journal is the official organ of Patuakhali Medical College covering all the fields of medical science. The editorial board further reserves the right to edit and reject the papers.

### Instructions to authors

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- The statement of the problem with a short discussion of its importance and significance
- Review of literature related to the problem with pertinent reference
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Editorial

## Ear Care: Essential Component of Healthcare System

Md. Zahirul Isalm<sup>1</sup>, Md. Faizul Bashar<sup>2</sup>

Ear care is a crucial aspect of maintaining overall health and well-being. The human ear is a delicate and complex organ that plays a vital role in our ability to hear and balance. Failure to provide proper care of the ear can result in a range of problems, from temporary discomfort to permanent hearing loss.<sup>1</sup>

Ear infection is a prevalent issue affecting the ear. It arises when the Eustachian tube, responsible for connecting the middle ear to the back of the throat, becomes obstructed. This can cause fluid to build up in the middle ear, leading to pain, swelling, and decreased hearing. Children are particularly susceptible to ear infections, but adults can also be affected.<sup>2</sup> To reduce the risk of ear infections, it is important to practice good ear hygiene, such as keeping the ears clean and dry, and avoiding the use of cotton swabs or other objects in the ear canal.

Another common ear problem is swimmer's ear, which occurs when water gets trapped in the ear canal.<sup>3</sup> This can cause inflammation and infection, leading to pain, itching, and discharge. To prevent swimmer's ear, it is important to keep the ears dry, especially after swimming or showering. Wearing earplugs or using a hair dryer on the lowest setting to dry the ears can also help prevent this condition.

Noise-induced hearing loss is developed over a longer time period when exposure to loud sound is chronic, and transient threshold shift is observed when sudden exposure to very loud sound happened.

Individuals who are exposed to loud noises on a regular basis, such as construction workers, musicians, and military personnel are vulnerable to noise induced hearing loss. Exposure to loud noises can damage the delicate hair cells in the inner ear, leading to permanent hearing loss. In order to prevent hearing loss caused by excessive noise, it is crucial to utilize hearing protection when exposed to loud sounds and to minimize exposure to loud noises whenever feasible.<sup>4</sup> Tinnitus refers to the presence of abnormal sounds in the ear. The pathophysiology underlying this condition is complex. Living with tinnitus can be distressing which can disrupt one's quality of life. Tinnitus can be caused by a variety of factors, including exposure to loud noises, ear infections, and certain medications. While there is no cure for tinnitus, there are treatments that can help manage the symptoms, such as cognitive behavioral therapy, sound therapy, and medication.

In addition to these common ear problems, there are number of other conditions that can affect the ear, such as Meniere's disease, vestibular neuronitis, and otosclerosis. These conditions can lead to hearing loss, vertigo, and other symptoms, and it is important to seek medical treatment if you are experiencing any unusual symptoms in your ears.

To maintain good ear health, it is important to practice good ear hygiene and to seek medical treatment if you are experiencing any symptoms. Additionally, it is important

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to have regular hearing exams to detect any hearing problems early on, so that appropriate treatment can be started. Regular hearing exams can also help identify any changes in hearing over time, so that appropriate steps can be taken to prevent further hearing loss.

Ear care is an essential component of maintaining overall good health and well-being. Different types of diseases can affect the ear leading to hearing loss, vertigo, tinnitus, pain, and other symptoms. By practicing good ear hygiene, seeking medical treatment when necessary, and having regular hearing exams, one can help protect one's ears and maintain good ear health.

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Review Article

## Medical Education in Post-Covid Era: A New Dimension

Humyra Ashrafi<sup>1</sup>, Syed Muhammad Baqui Billah<sup>2</sup>, Mahmudul Hassan Banna<sup>3</sup>, Mostak Ahmed<sup>4</sup>,  
Umme Salma<sup>5</sup>, Abida Sultana<sup>6</sup>

### ABSTRACT

**Introduction:** COVID-19 modified the mode of medical education from face to face learning to distance learning (DL) based predominantly on online platforms. The post-COVID era demands an overview to assess the benefits and challenges of the modified methods comparing with the traditional methods.

**Methods:** This scoping review was conducted by searching in Research4life & PubMed with some keywords (Post COVID, Pandemic, Medical Education). We selected 4 articles for final review. We constructed a form consisting of the name of first author, publication year, study design, country, methods of teaching, methods of assessment, and recommendation from the authors. The findings are collated and assessed qualitatively in this review.

**Results:** The Korean study conducted by Kyong Jee Kim focused on blended learning, faculty development, technology integration & institutional collaboration. Study from Egypt showed that face to face learning is appreciated by students & teachers, but the doctor-patient relationship is compromised in DL. Researchers from UK emphasized on adaptation & assessment of different learning modalities, supervisor involvement and participation in community practice. A review from USA expressed that prerecorded lectures of non-clinical classes improve curriculum delivery though online learning negatively affect the mental health of students & teachers.

**Conclusion:** Our review indicates that though online systems are weak for developing clinical skills and doctor-patient relationships, it has some benefits to keep continuing the pace of teaching and learning during any health emergency. So we recommend to keep a blended education method, keeping the new one with the pre-COVID system, yet to assess the benefits and drawbacks of this new era of medical education.

**Keywords:** Medical education, COVID, Post-COVID, Distant learning, Traditional education

### INTRODUCTION

COVID-19 has brought tremendous changes in all aspects of life including global health system.<sup>1, 2</sup> One of the most affected areas is medical education. All of the educational institutions were temporarily closed during the pandemic for the safety of the students and teachers. Measures to continue education in such situation was felt by the educationists and policy makers, which in turn ignited the installment of online education system with innovative protocols to adapt to the virtual reality (at least 5 reference to add).<sup>3-6</sup> Gradually the medical

education had to adopt such system by installing simulation lab, virtual classes and exams, practical examination such as objective structured clinical examination (OSCE) with mock tests.<sup>5,7-10</sup>

The initial introduction faced various difficulties whereby the teachers as well as students found themselves unskilled with the use of the virtual classes, navigation through online windows and retrieve online materials from the designated web page.<sup>4, 10, 11</sup> To most of the teachers the online platform was very new where they were not exposed before the pandemic. Some of the students were in the

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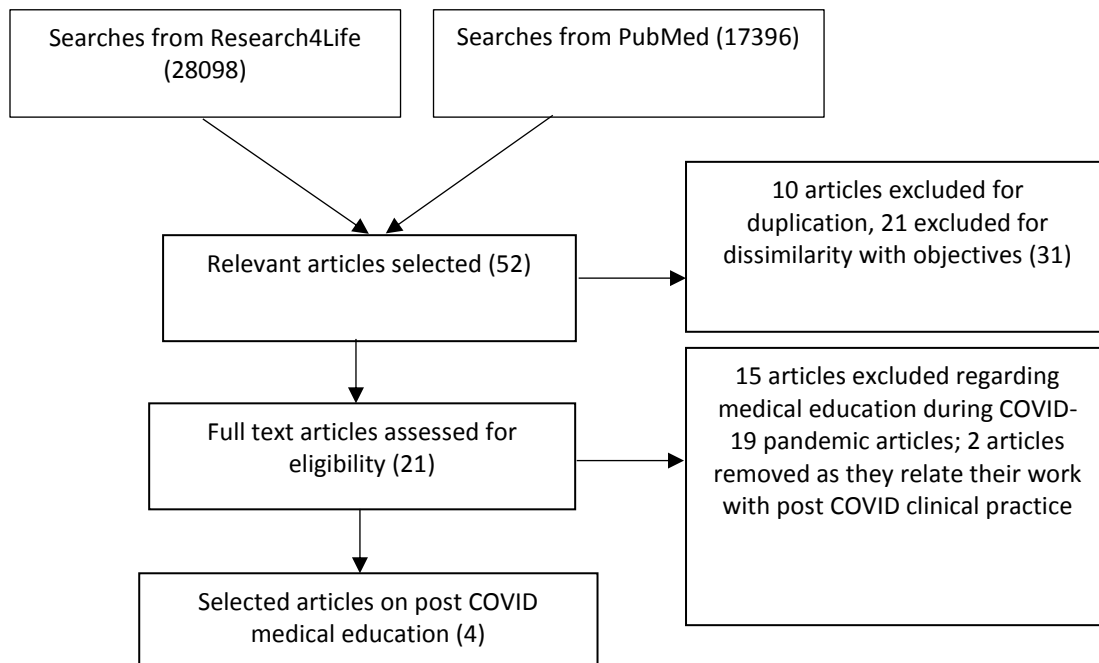
similar facet of dilemma of navigation through the browser.<sup>8</sup> Many students of the developing countries like Bangladesh didn't have the means to access the online education system because of not being familiar with appropriate device, net connectivity and monetary support for the system to be installed.<sup>12</sup> The affordability as well as fear and anxiety among students and staff on e-learning were also excavated by researchers.<sup>13</sup>

Now that the COVID havoc is nearly controlled, the post covid medical education needs to be evaluated. The question of continuing or modifying the medical education through the experience during the COVID pandemic awaits a malleable answer.

We conducted this review to assess the post COVID medical education system from the relevant literatures in this field.

### METHODS

We conducted this scoping review with a broad research question of medical education in post COVID situation. After deciding on the research question, we searched the scientific field for pertinent studies. After that we selected the studies which met with our objectives. We reviewed the selected studies to put the findings into a pre-defined matrix. And finally, we consulted among the team members to agree upon the summary findings.



**Figure 1:** Flow chart of article selection

We searched from Research4Life and PubMed to determine the answers to our question about the medical education after the COVID pandemic from the experience during the pandemic. Three authors conducted the initial search independently.

The search terms were “medical education AND COVID-19”, “medical education AND post COVID-19”, “medical teaching AND COVID pandemic” “medical teaching AND post COVID-19” and “medical education AND post COVID pandemic”.

The search yielded 28,098 results from Research4Life and 17,396 results from Pubmed, and these included articles, books chapters, online comments, conference minutes etc. We narrowed down our search objectively to select 52 articles from both the search engines for our study. Ten results were excluded because of duplication; 21 articles didn't meet our objectives when investigated thoroughly. Out of the rest 21 articles, we removed 15 as they were on medical education during COVID-19. Two articles talked about the clinical practice during the post COVID time, hence didn't meet the criteria for inclusion. Finally, 4 articles were left for review as they were related to post COVID medical education. We showed the flow chart of the article search in Figure 1.

Two reviewers compiled the data in the table following the necessary steps of this review in a master sheet for initial checking. They went through these 4 literatures thoroughly to collate the findings or recommendations for the post COVID time. Then we constructed a form consisting of the name of first author, publication year, study design, country, methods of teaching, methods of assessment, and recommendation from the authors. The finding out of this form was presented in Table 1 and the discussions followed according to the findings.

## RESULTS

The excerpt matrix of the results from the four articles are given in Table 1. The country wise description of the articles is given in the table.

### Korean study

Kim K. J. discussed that COVID-19 pandemic which encourages continual innovation in

medical education rather than passing trends as it represents a persistent threat, which resulted in bringing both opportunities and challenges for medical education.<sup>14</sup> They anticipated that COVID-19's online education experience could be utilized to further advance the reforms in medical education. The adoption of blended learning by addition of online with the traditional teaching bears a potential form of education system in the medical field. To incorporate the blended learning, curricula needs evaluation and modification. Though these shifts bear opportunities and challenges as well, faculty development through training of the instructors in online teaching techniques, developing and disseminating online resources, and efficiently designing and implementing online exams could gradually be adopted by the stakeholders and recipients. They recommended that medical schools should collaborate to create and exchange educational materials to uphold and sustain the neo education environments to their best so that any future health emergency can be dealt with ease.

### Egyptian study

Ahmed S. A. et al took an initiative to lay out post-COVID planning priorities for a better balance between online and in-person learning to create a distant learning (DL) model using The Polarity Approach for Continuity and Transformation (PACT)<sup>TM</sup>. Using a virtual mapping session with 79 academics from 19 different nations, the researchers found mixed interactions with students who appreciated that DL offers a good learning environment. But contrary to the advantage of DL, participants alleged that face-to-face learning offers a better opportunity for professionalism through

Table 1: Findings of the selected studies

Author	Country, year	Publication type	Finding 1	Finding 2	Finding 3	Finding 4
Kyong-Jee Kim	South Korea, 2022	Comment review	Need to incorporate blended learning to make more student centred environment	Faculty development is necessary for DL	Technology integration, creation and sharing learning resources	Institutional support & collaboration
Samar A. Ahmed	Egypt, 2020	Cross-sectional qualitative study	Face to face learning appreciated by students and teachers	DL offers less variety of logistics use	Clinical skill & cognitive communication are at risk	Doctor patient relationship is compromised in curriculum
Richard Darnton	UK, 2022	Qualitative evaluation	Adaptation of different models of learning strategies	Supervisor involvement in student consultations	Assessment of different learning modalities	Participation in the community practise
Matthew Z. Guo	USA, 2022	Perspective review	Pre-recorded lectures for non-clinical classes improve curriculum delivery.	Medical curricula should be updated to include content on telehealth & tools to address it as separate skill.	Resources to be invested on the curriculum structures to promote self-learning and enhance education on health disparities.	Online learning negatively affect the mental health of medical students and educators.

improved teamwork with regard to social issues. Participants concurred that DL logistics are significantly more challenging than face-to-face learning. The participants argued that face-to-face learning gives easiness to interact without coping with the difficulties that arises from using the online logistics. However, as seen by the

participation of 46 people, special needs pupils did not feel physically comfortable attending. The model faced an important challenge of clinical skill and communication with the real time patients when they looked at the curriculum, which indicated a weakness of the DL hence can compromise doctor patient relationship.<sup>15</sup>

#### UK study

Darnton, R. et al conducted a qualitative evaluation of final year undergraduate clerkship.<sup>16</sup> They showed that triage, e-consultations, remote consultations, online meetings, and reduced home visits to be utilized massively. So, they urged to reconsider the purpose and impact of online learning primary medical care. Out of different models for supervised student consultations, triaging systems appeared to boost the student-patient relationship. Remote consultations had become a necessity to provide an educational advantage and to make up the loss incurred during the pandemic.

#### USA study

Guo M. Z. et al examined the asynchronous and virtual learning during pandemics, to reimagine undergraduate medical education in the post-pandemic period. They concluded to prepare and train the physicians by utilizing these two learning models. The researchers found that pre-recorded lectures for non-clinical classes meet up curriculum coverage. They also recommended for real time small group discussion among students, front-line medical professionals, patients from various communities, and policy activists, to improve the medical education system had any future epidemic engulfs our life. The authors recommended for updating medical school curricula that should cover telehealth. They chalked out the weakness of virtual education to have been impacting student isolation and detachment brought on by online learning.<sup>17</sup>

#### **DISCUSSION**

Emergence of COVID 19 created tremendous changes in all fields & medical education system was also affected by it. Medical

students faced a lot of difficulties in their learning process. Different institutions developed different strategies to ensure the firmness & integrity of medical education system including safe lecture delivery. The most popular method was distance learning through online platforms.<sup>1</sup> The researchers went on discussing the potential of using the modified education system during the COVID pandemic for continuation of DL or adopt a fusion of traditional and new methods of education and learning.<sup>3,15</sup>

Some researchers from Korea emphasized on the blended learning for making student centered environment including faculty development, technology integration, sharing learning resources and institutional collaboration. But when we looked at the study from Egypt, the authors focused on post COVID planning priorities for a better balance between online and offline learning to create a distant learning (DL) model using the Polarity Approach for Continuity and Transformation (PACT). In this cross-sectional qualitative study, face to face learning was appreciated by students and teachers arguing that DL offers less variety of logistic use. They found that clinical skill and cognitive communication are at risk and doctor patient relationship is compromised in this curriculum.

While the matter of utilization of the blended education system was still in debate, educationist urge for keeping the competency whatever the methods of choice an institute finalize for running the course.<sup>2</sup> Some researchers emphasized on the healthy living environment because it was affected most during the pandemic, especially the adolescents.<sup>18</sup> Though researchers urged that e-consultations, online meetings, and reduced home visits were utilized massively during the pandemic, the threat of social media

addiction should be kept in mind as it was already a concern even before the commencement of the pandemic.<sup>16,19</sup> So, adaptation of different models of learning strategies, supervisor involvement in student consultations, assessment of different learning modalities and participation in the community practice could mitigate the gap between the expected and the real time situation.<sup>11</sup>

Pre-recorded lectures for non-clinical classes enhance the delivery of the curriculum, according to a perspective evaluation conducted in the USA. The researchers found that in order to increase self-learning and improve instruction on health disparities, medical curricula should be revised to include telehealth content. Additionally, they discovered that educators and medical students' mental health are both significantly impacted by online learning.<sup>15</sup>

The studies which we reviewed mostly concluded with the weakness of online system over clinical skill and doctor patient relationship. Researchers from Japan found that clinical skill perception was low during the COVID, supporting the claim of researchers in our review.<sup>4</sup> On the contrary, researchers during COVID expressed their satisfaction on this modified online education system.<sup>20</sup> So we need to revisit the applications to evaluate the pros and cons of the new era of medical education.

We recommend a blending of the both education system by accepting the tools we have used to continue the teaching environment that we learned from the COVID pandemic, in order to sustain medical education. Moreover, we need to emphasize public health activities in field, address healthcare disparities, where we can mix virtual patient care integrating with face-to-face learning.<sup>3, 21</sup> Because medical students

of today will be the doctors of tomorrow, we need to create an acceptable teaching and learning environment for them preparing them for the untoward public health emergencies.

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Original Article

## Disease Profile of Admitted Children in Patuakhali Medical College Hospital: A Two Years Study

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### ABSTRACT

**Background:** Presentation of disease is key to make clinical decisions. This study is conducted to classify the disease patterns among the hospitalized children in Patuakhali Medical College Hospital.

**Methods:** This study was carried out in the department of Paediatrics, Patuakhali Medical College Hospital during January 2020 to December 2021. The study was conducted on 500 children between the ages of 0 and 6 who were admitted into hospital using questionnaire to the guardian of the children and analyzing hospital data.

**Results:** Two-third babies (74.4%) belonged to age 1-2 years. Male female ratio was about 6:4. About half of the babies (51.2%) had cesarean section. Respiratory tract infection was most prevalent (336 cases, 67.2%), followed by gastrointestinal infections like enteric fever (122 cases, 24.4%), diarrhoea (38 cases, 7.6%) and abdominal pain (27 cases, 5.4%). And septicemia (87 cases, 17.4%), allergies (61 cases, 12.2%).

**Conclusion:** Respiratory tract infections are prevalent followed by gastrointestinal diseases with male preponderance.

**Key words:** Disease pattern, Respiratory tract infection

### INTRODUCTION

Periodic reviews of morbidity and mortality at medical facilities can generate important information because it represents what is happening in a community.<sup>1</sup> Child health is a critical issue in the world. The Patuakhali Medical College Hospital (PkmCH) is a prominent tertiary care hospital in Patuakhali and Barguna districts of south Bangladesh, serving a large population that includes a considerable number of children. Despite progress in healthcare, child mortality rates remain high in Bangladesh, with preventable diseases accounting for a significant portion of deaths.<sup>2</sup>

Bangladesh has made progress in reducing child mortality in recent years, with the under-five mortality.<sup>3</sup> Despite this progress, the rate of child mortality in Bangladesh remains high, with preventable diseases

such as pneumonia, diarrhea accounting for a significant portion of deaths.<sup>4</sup> Children in Bangladesh face a significant burden of morbidity due to infectious and non-infectious diseases.<sup>5</sup>

Understanding the disease profile of children admitted to the PkmCH is essential for improving the quality of care provided to these patients. This study aims to provide a comprehensive disease profile of children admitted to the PkmCH over a two-year period. The objective is to identify the most prevalent diseases, their clinical presentations, and outcomes. This information can help healthcare providers develop targeted interventions to improve diagnosis, treatment, and management of diseases in children, ultimately contributing to improved health outcomes.

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## METHODS

The present descriptive observational study was carried out in the Department of paediatrics, Patuakhali Medical College Hospital during January' 2020 to December' 2021. Children between the ages of 0 and 6 years who had been admitted were included in the study. Data was collected using the questionnaire to the guardians of the children and hospital records reviewed and analyzed. Microsoft Excel was used to enter the data that had been collected, and the software Statistical Package for Social Sciences (SPSS) version 23.0 was used to analyze the results. Standard deviation, mean, and other descriptive statistical metrics were used.

## RESULTS

Out of the 500 sick children, two-thirds were under 2 years old, while the remainder were between the ages of 3 and 6. Male female ratio was about 3:2 and about half of them had cesarean section (Table 1).

Table 1: Demographic characteristics of the babies (n=500)

	Frequency	Percentage
Age (years)		
1-2	372	74.4
3-4	50	10.0
5-6	78	15.6
Sex		
Male	306	61.2
Female	194	38.8
Mode of delivery		
NVD	244	48.8
Cesarean section	256	51.2

Most of the children were in supplementary foods among them lactogen milk was common (42%) and mean duration of exclusive breast feeding was 3.9±2.5 months (Table 2).

Table 2: Feeding status of the babies (n=500)

	Mean	±SD
Duration of exclusive breast feeding (months)	3.9	±2.5
Range (min-max)	0.1	-18.0
Supplementary food Frequency Percentage		
Lactogen milk	210	42.0
Cow milk	144	28.8
Packet milk	39	7.8

Most (67.2%) of the admitted children has suffered from respiratory tract infections (RTI) followed by gastrointestinal infections like enteric fever 24.4%, diarrhoea 7.6%, abdominal pain 5.4% (Table 3).

Table 3: Disease of the babies (n=500)

Disease	Frequency	Percentage
Respiratory Tract Infection	336	67.2
Enteric fever	122	24.4
Septicemia	87	17.4
Allergy	61	12.2
Diarrhea	38	7.6
Anaemia	28	5.6
Abdominal pain	27	5.4
Febrile convulsion	26	5.2
Meningitis	11	2.2
Nephrotic syndrome	10	2.0
Urinary tract infection	7	1.4
Neonatal jaundice	6	1.2
Miscellaneous	5	1.0
Poisoning	1	0.2
Skin infection	1	0.2

## DISCUSSION

In this present study, 306 children (61.2%) were male, and the age group of 1-2 years

accounted for 372 children (74.4%). Rahman et al. reported a male to female admission ratio of 1.5:1 over one year, with 73% of patients being under 5 years old.<sup>6</sup> In a study of children under 2 years old, Stewart et al. found a male proportion of 50%, while Browne et al. reported 58% male participants.<sup>7,8</sup> Hasan et al. reported an average male to female ratio of 1.5:1 upon admission.<sup>1</sup>

In this study mean duration of exclusive breast feeding was 3.9 months ( $\pm 2.5$ ) which is shorter than the standard duration of six months.<sup>9</sup> This is a cause of high infection in this study as breastfeeding reduces the risk of infectious diseases in childhood and infants.<sup>10</sup>

As per the findings of the present study, respiratory tract infections were the most prevalent type of infection, accounting for 336 cases (67.2%). Rahman et al. also reported acute respiratory infection (ARI) as common type of infection (25%).<sup>6</sup> In a study conducted in Korea, pneumonia was found to be the most prevalent condition requiring hospitalization (17%).<sup>9</sup> Other studies have also reported pneumonia as a common reason for admission, such as Muluneh et al., who found pneumonia as a reason for admission in 38.6% of total admissions in their study.<sup>10-12</sup> Similarly, in India, Nagaraj et al. found acute bronchiolitis (33%), bronchopneumonia (25.3%), and asthma (16.3%) to be common respiratory illnesses.<sup>13</sup>

Moghaddam et al. reported that respiratory tract and gastrointestinal illnesses had the highest rates of 40.1% and 37.2%, respectively.<sup>14</sup> Among respiratory tract illnesses, bacterial pneumonia was the most common (30.1%). It is worth noting that acute respiratory tract infection (ARI) is the primary cause of morbidity and mortality in both developing and developed countries.<sup>15</sup>

In 2010, WHO identified respiratory disorders as the second leading cause of death in children under the age of five, with pneumonia being one of the top three causes of neonatal mortality.<sup>16</sup>

Gastrointestinal problems including diarrhoea, abdominal pain, enteric fever were the second commonest causes of hospital admission.

The high frequency of respiratory tract infections among hospitalized children is concerning. Identifying the types of infections that are most prevalent in a region is important to conduct studies that investigate the disease profile among hospitalized children in different settings.

## CONCLUSION

Respiratory tract infections are prevalent followed by gastrointestinal diseases with male preponderance.

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Original Article

**Assessment of Low Vision and Blindness in Children with Multiple Handicaps**

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**ABSTRACT**

**Background:** Difficulties in ophthalmologic evaluation in children with multiple handicaps makes it challenging to identify the causes among the disabled children.

**Methods:** This cross-sectional study was conducted at the department of Ophthalmology of Sher-E-Bangla Medical College & Hospital, Barishal between July 2019 and June 2021. Eleven hundred and twenty-nine children with visual impairment were examined. History, physical examination and ophthalmologic evaluation like visual acuity, slit lamp evaluation and fundoscopic examination was performed. Data was collected in data collection sheet and analyzed with Microsoft excel.

**Results:** About half of the children 567 (48.9%) presented with single or multiple handicaps along with the visual impairment. Different causes of visual impairment were identified. Among them about one third (37%) were optic nerve atrophy, about one fifth (22%) were cortical visual impairment. Other causes were retinopathy of prematurity, toxoplasmic macular retinochoroiditis, ocular development abnormalities, congenital cataracts. Handicaps were physical disability 68%, cognitive difficulty 25.2%, hearing impairment 4.5% and global developmental delay 2.3%.

**Conclusion:** About half of visual impairments are due to optic nerve atrophy and cortical visual impairment. Optic atrophy occurs mainly at perinatal periods. Physical disability is commonest form of multiple disability.

**Keywords:** Blindness in children, Blindness in handicapped children, Low vision in children

**INTRODUCTION**

Early onset visual impairment can hinder experiences and access to information, which can interfere with the motor, cognitive, and emotional development of children.<sup>1</sup> The factors that contribute to the condition, such as the age of onset, presence of other disabilities, environmental factors, and their interactions, can determine the extent of developmental difficulties and delays in affected children.<sup>2</sup>

The prevalence and causes of childhood visual impairment can be related with geographical region, research timeline, socioeconomic status.<sup>3-5</sup> According to Gilbert and Foster, the prevalence of blindness in early life ranges between 0.3/1000 and 1.0/1000 below the age of five.<sup>5,6</sup> The prevalence of multiple disabilities

(MD), which is the presence of two or more disabilities in the same individual, is higher in developing countries and more common among populations with visual impairment. However, its prevalence varies across studies.<sup>4</sup>

To enable global comparison of childhood visual impairment data, Gilbert, Foster, and Negrel proposed a standardized record format.<sup>7</sup> In Latin America, data on the prevalence and causes of blindness are limited due to a lack of population studies and case records.<sup>8</sup>

The present study focuses on a proportion of children with visual impairment associated with one or more disabilities, who were evaluated at the Ophthalmology Department of Sher-E-Bangla Medical College & Hospital, Barishal.

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**METHODS**

It was a cross sectional study of 1129 paediatric patients age between 0 and 15 years, having difficulty in vision at Sher-E-Bangla Medical College and Hospital, Barishal between July 2019 and June 2021. Clinical data included were visual acuity, slit lamp evaluation, fundoscopic examination and different disabilities. A proforma was prepared with patients name, age, sex, address, chief complaints, history of present, past ocular and systemic illness, family history, treatment history. These data were collected in the prescribed proforma and was recorded accordingly. Analysis was done with Microsoft Excel.

**RESULTS**

About half of children (567, 48.9%) presented with single or multiple handicaps along with the visual impairment. Among them 50.1% had only visual impairment and 49.9% had multiple disabilities along with visual impairment (Figure 1). About three-fourth of the children (78.2%) were from Barishal, 19.3% were from other towns.

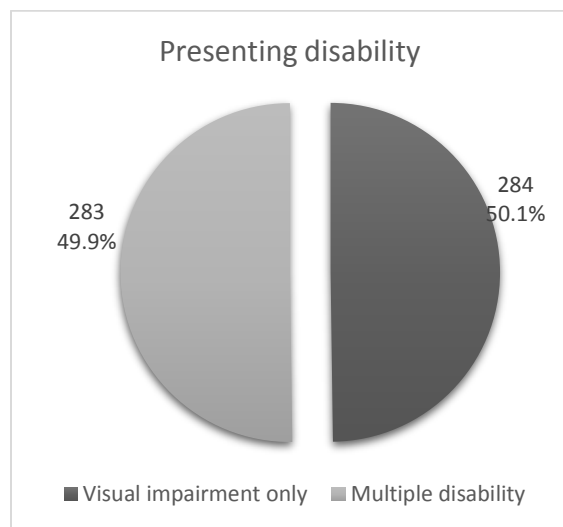


Figure 1: Pie chart showing presenting disabilities

Different causes of visual impairment were identified. Among them about one third (37%) were optic nerve atrophy, about one fifth (22%) were cortical visual impairment. Other causes were retinopathy of prematurity, toxoplasmic macular retinochoroiditis, ocular development abnormalities, congenital cataracts (Table 1).

Table-1: Causes of Visual impairment in multiple disability (n=567)

Causes	No of patients	%
Optic atrophy	210	37%
Cortical visual impairment	125	22%
Congenital toxoplasmosis	48	8.4%
Retinopathy of prematurity	41	7.3%
Ocular malformations	38	6.7%
Congenital cataracts	34	6%
Hereditary diseases of retina and macula	24	4.3%
Others	47	8.3%
<b>Total</b>	<b>567</b>	<b>100%</b>

About half (51.1%) of optic atrophy were due to perinatal factors, intrauterine factors were 21.2% where postnatal factors were 16%, rest were hereditary factors and unknown (Table 2).

Table -2: Aetiology of optic atrophy

Causes	Percentage	Total
Hereditary factors	3.6%	41
Intrauterine factors	21.2%	239
Perinatal factors	51.1%	577
Postnatal factors	16%	181
Unknown	8.1%	91

Physical disability observed in 68% cases, cognitive difficulty in 25.2%, hearing impairment making up 4.5% of the cases, and global developmental delay: in 13 patients (Table 3).

Table-3: Associated disabilities

Disabilities	Number of patients	Percentage
Physical disability	386	68%
Cognitive difficulty	142	25.2%
Hearing impairment	26	4.5%
Global developmental delay	13	2.3%
	567	100%

## DISCUSSION

About half of the children (48.9%) were multiple handicaps. Studies with multiple handicaps are relatively infrequent.<sup>9,10</sup> It is difficult to conduct study with children having multiple disabilities. As because these children have difficulties in social interaction and communication. These make it challenging to examine and interpret the findings of ophthalmological evaluations.<sup>2</sup>

About one fourth of the children in the study of Blohmé and Tornqvist had mental disability with optic atrophy and about 40% had cortical visual impairment.<sup>11</sup> In our study we found about 37% optic atrophy with cognitive difficulties and about 22% cortical visual impairment.

The retinopathy of prematurity was observed in 7.3%. At present time extreme premature baby has an increasing survival rate that is associated frequent cases of retinopathy of prematurity. In this study we found 7.3% cases of retinopathy of prematurity. We had congenital cataract about 6% in our study. That is very similar to the literature data showing 5 to 20%.<sup>5,13</sup>

We found that about half of our optic nerve atrophy was due to perinatal causes. And these are alarming in the developed countries.<sup>5,9</sup>

In the study of Armitage, it was found that about 34.9% of the study children with visual impairment had sensorineural deafness.<sup>12</sup> In our study, we observe 4.5% children with multiple disability had hearing impairment along with visual impairment.

## CONCLUSION

About half of visual impairments are due to optic nerve atrophy and cortical visual impairment. Optic atrophy occurs mainly at perinatal periods. Physical disability is commonest form of multiple disability.

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Original Article

## Intrathecal Fentanyl Versus Fentanyl with Levobupivacaine For Combined Spinal Epidural Analgesia in Labour

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### ABSTRACT

**Background:** The combined-spinal epidural analgesia (CSEA) technique, which involves administering a low dose of local anesthetic drug with an opioid via intrathecal route. Currently, this method of labor analgesia is commonly and routinely utilized. Levobupivacaine, a local anesthetic, is widely recognized for its safety profile, while fentanyl, an opioid, is renowned for its ability to induce rapid and long-lasting profound analgesia. It can also be done with intrathecal fentanyl alone. This study compared the effect of intrathecal two drug regimen (Levobupivacaine with fentanyl and fentanyl alone) in CSEA in labour.

**Methods:** This randomized controlled trial was conducted at labour room of Department of Obstetrics and Gynaecology, Institute of Child and Mother Health (ICMH). A total of 50 parturients admitted of 18-35 years old, American Society of Anaesthesiologists- ASA status I and II, full-term, primiparous women admitted for labour analgesia were selected according to eligible criteria. Those who gave consent for the procedure were underwent a thorough pre-anaesthetic checkup and were randomized into two groups, group A (LF group) and B (F group) according to the intrathecal drug delivery in combined-spinal epidural analgesia technique. Pain was measured using a 0-10 mm visual analogue scale. Adverse effects such as hypotension, bradycardia, pruritus, urinary retention, nausea and vomiting were noted.

**Results:** Onset of analgesia was significantly faster in group A (mean= 1.85 minutes, SD= 0.49) than group B (mean= 5.57minutes, SD= 0.34) ( $p < 0.001$ ) and pain intensity was less in group A than group B for first 30 mins. Parturients of group A developed some lower limb weakness but that was resolved later and there was no such weakness in group B. Maternal hypotension occurred significantly in group A with no such in group B. Seven out of 25 parturients in group A had instrumental delivery which was significantly higher than group B (no instrumental delivery) ( $p=0.001$ ). More parturients in group A were satisfied of good quality of pain relief than group B ( $p=0.003$ ).

**Conclusion:** Intrathecal Levobupivacaine with Fentanyl produces adequate analgesia than Fentanyl only for CSEA in labour with more maternal satisfaction and with some non-significant maternal side effects like lower limb motor block and hypotension.

**Keyword:** Combined-spinal epidural analgesia, Labour analgesia, VAS, Levobupivacaine, Fentanyl.

### INTRODUCTION

Labour pain is a unique pain for parturient. The pain triggers a stress response in the mother, which is detrimental both to the fetus and the mother.<sup>1</sup> Evidence is suggestive that labour disorders including maternal hypertension, dystocia, meconium staining, and foetal distress are stress

related. Therefore, providing pain relief to the mother during childbirth not only benefits her but also has a positive impact on her newborn.<sup>2</sup>

The Combined-Spinal Epidural Analgesia (CSEA) technique offers the benefits of both subarachnoid analgesia, such as rapid onset and reliable block, and the flexibility of

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extended analgesia through the presence of an epidural catheter. This approach effectively avoids the drawbacks associated with each technique individually. Several different drugs and combinations have been described for combined spinal-epidural analgesia in labour. The analgesia in the intrathecal component can be provided by opioid only or local anaesthetic only or a combination of local anaesthetic and opioid.<sup>3</sup>

Due to its rapid and dependable onset of analgesia, lower anaesthetic dosage requirement, minimal motor blockade, and the ability to extend the duration of pain relief according to the length of labor, the CSEA technique is increasingly being favored as an alternative to traditional epidural analgesia. As a result, it is gaining popularity among healthcare professionals and patients alike.<sup>4</sup>

Using Intrathecal levobupivacaine with fentanyl is an established and reliable technique of labour analgesia. Yvonne Lim et al described that the addition of 25 µg intrathecal fentanyl to 2.5 mg levobupivacaine as part of CSEA for labour analgesia decreased the incidence of labour breakthrough pain and resulted in a longer duration of labour pain relief.<sup>5</sup> As a result, there is a potential reduction in the requirement for additional pain relief during labor and a potential decrease in the workload of anesthesiologists in the delivery suite.

Fentanyl is used extensively now a days as an intrathecal agent for labour analgesia in CSEA technique. Advantages of using fentanyl intrathecally include the ease of use, low cost, rapid onset and longer duration of profound analgesia.<sup>6</sup> But there are some drawback also as nausea, vomiting, pruritus, fetal bradycardia and maternal respiratory depression. But using a low dose

of fentanyl the incidence of such side effects are not so high.

The utilization of newer local anesthetics, such as levobupivacaine, in neuraxial labor analgesia has gained significant popularity due to its enhanced safety profile and reduced motor blockade. Levobupivacaine is considered a favorable option for labor analgesia as it serves as an alternative to racemic bupivacaine. This preference is attributed to the fact that the S(-) enantiomer in levobupivacaine exhibits lower affinity for sodium channels, resulting in fewer depressive effects on the cardiovascular and central nervous systems compared to the R(+) enantiomer.<sup>7</sup>

The CSEA technique involves administering a low dose of local anesthetics with opioids to the parturient via intrathecal route, is commonly and routinely utilized for labor analgesia.<sup>8</sup> Incorporating lipophilic opioids with local anesthetics for neuraxial analgesia extends the duration of sensory block; however, there is still a possibility of experiencing motor block and maternal hypotension.

In this study is we compared intrathecal use of fentanyl with levobupivacaine and fentanyl alone in CSEA in terms of rapid onset of analgesia, duration of analgesia, incidence of motor blocked and frequency of the adverse foetomaternal outcome.

## **METHODS**

This randomized controlled trial was conducted at labour suit of Institute of Child and Mother Health (ICMH). After receiving the approval from Institutional Review Board (IRB) of BSMMU and obtaining informed written consent from each individual patient was enrolled in this study. Demographic and clinical data including age, weight, height, gestational age and cervical dilatation were recorded for all parturients.

A total of 50 parturients were enrolled for this study. Those who gave consent for the procedure were underwent a thorough pre-anaesthetic checkup and were randomized into two groups, group A (LF group) and B (F group) according to the intrathecal drug delivery in combined-spinal epidural analgesia technique. The randomization was performed by an independent staff. The staff used fifty (50) opaque sealed envelopes inside which there was a token contains group name (A or B) and a code number of the patients (01 to 25). Each group has 25 tokens. When parturients admitted at labour ward for vaginal delivery and gave consent for study, they were asked to pick up an envelope by lottery. And in each group had 25 parturients. Group A were received 2.5mg (0.5ml) isobaric levobupivacaine with 25 $\mu$ g (0.5ml) fentanyl (total 1.0ml) intrathecally (also named as LF group) and group B were received only 25 $\mu$ g (0.5ml) fentanyl with 0.5 ml of distilled water (total 1ml) intrathecally (also named as F group). Both groups received epidural infusion of 0.0625% levobupivacaine and 2 $\mu$ g /ml fentanyl at a rate of (10-15) ml/hr as infusion.

#### **Study Procedure:**

All parturients had the standard monitoring including noninvasive blood pressure, pulse oximetry and cardiotocography for foetal monitoring. Intravenous (IV) access with 18G cannula connected with a Hartmann's solution was established on the upper limb. Before performing the CSEA procedure, baseline measurement of pain intensity was made using a visual analog scale VAS (0= no pain, 10= worst imaginable pain) at the peak of uterine contraction, baseline arterial pressure (BP), heart rate (HR) and foetal heart rate (FHR) were measured. After IV preload with Hartmann's solution at the rate

of 10-15ml/kg, CSE was performed at the L3-4 or L4-5 intervertebral space with the patient in sitting position. Then the epidural catheter was inserted 3-5 cm into epidural space and was secured without a test dose. The parturient was then positioned supine with left lateral displacement and the head end of the bed was elevated to 15-20 degree. After 20 minutes of intrathecal dose, the level of sensory blockade was checked to ensure the sensory level at least reached at the level of T10. Then continuous epidural infusion of 0.0625% levobupivacaine with fentanyl 2 $\mu$ gm/ml @ 10ml/hr through epidural catheter was started via syringe pump and continued till the delivery of the baby. With the time noted 'zero' all the patients received intrathecal injection according to the lottery and asked to indicate pain intensity using the VAS scale.

Progress of labour, cervical dilatation and foetal monitoring of all parturients were followed up until delivery on a partograph by an obstetrician along with assessment of pain, sensory and motor block, hemodynamic parameters and foetal monitoring.

Degrees of analgesia, motor block, foetal heart rate and blood pressure were assessed at 5, 15 and 30 minutes after the intrathecal dose and then hourly interval of throughout the labour. Intensity of pain was assessed by VAS score (0= no pain, 10= worst imaginable pain). After 30 minutes of intrathecal dose, if VAS is less than or equal to 3, then it was considered as adequate analgesia, If VAS is >3 then the parturient was excluded from study. Any breakthrough pain was managed by 5ml bolus epidural infusion of 0.0625% levobupivacaine with fentanyl 2 $\mu$ gm/ml. Motor block was bilaterally evaluated according to Bromage scale. Cephalad level of the sensory block was determined by perceived temperature difference to alcohol

swab. Parturients' haemodynamic parameters including arterial blood pressure and heart rate were monitored at regular intervals throughout the labour. Maternal hypotension was defined as systolic blood pressure < 90 mm of Hg or > 20% decrease from baseline. It was treated by turning parturients to the left lateral position, and administration of maternal oxygen, intravenous fluid infusion, or vasopressor (ephedrine 5mg bolus) as indicated. Maternal bradycardia (heart rate less than 50 beats / min) was treated with atropine 0.6 mg increments. Mode of delivery was assessed as normal vaginal delivery, instrumental delivery-ventouse or forcep delivery and caesarean section delivery.

Assessment of neonate was done by APGAR score in 1<sup>st</sup> and 5<sup>th</sup> minute after delivery as more or less than seven<sup>1</sup>. If APGAR score was below 7 and initial management failed, then the neonates were transferred to the neonatal intensive care unit.

The parturients were asked a question which was formulated as – “how would you describe the quality of your pain relief since the epidural bolus was given?” The answers were graded as excellent, good, fair and poor.

#### **Statistical Analysis:**

Statistical analyses were carried out by using the Statistical Package for Social Sciences version 20.0 for Windows (SPSS Inc., Chicago, Illinois, USA). Qualitative variables of this study are expressed as percentage.

Quantitative variables are expressed as mean ± standard deviation. Fisher exact test is used to analyze the categorical variables, Student t-test is used for continuous variables. P values <0.05 is considered as statistically significant.

#### **RESULTS**

There was significant differences in pain intensity measured by VAS score among group A and group B at 5, 10, 20, 30 and 60 minutes (Figure-1). Motor blockade was more in group A compared to group B in first half hour (Table- 1). Analgesic action of these drugs starts three times faster in levobupivacaine with fentanyl group than the fentanyl only group (p<0.001). Number of patients need to treat in case of levobupivacaine with fentanyl group is 1 and fentanyl only group is 8, that is statistically significant (p= 0.04). (Table 2). No differences of fetal heart rate are observed among groups except 5 and 60 minutes (Table- 3). Normal vaginal delivery rate was higher in group B than group A. No caesarean section delivery was required in any group. In group A instrumental delivery rate is higher than group B. (Figure- 2). There is no differences in APGAR score in between the groups in 1<sup>st</sup> and 5<sup>th</sup> minute. (Table- 4). There is no significant maternal side effects observed between the groups except hypotension, which was higher in group A (12%) (p=0.031) (Table-5). Higher maternal satisfaction was achieved in group A than group B (Table-6).

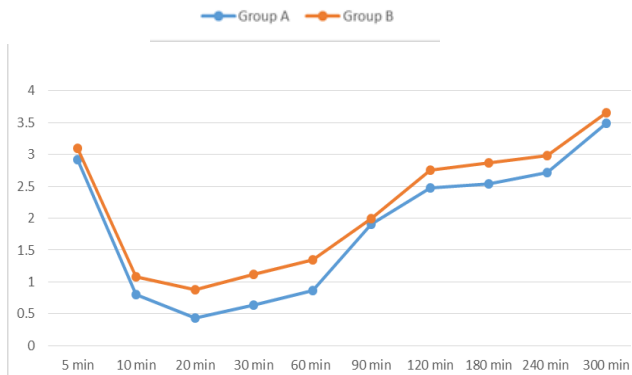


Figure 1: Visual analogue scale between two groups.

Table 1: Motor block assessed by Bromage scale between two groups after CSE

Bromage scale	Group A (n = 25)	Group B (n = 25)	p value
5 min	2.92 ± 0.82	4.00 ± 0.00	<0.001
15 min	3.23 ± 0.43	4.00 ± 0.00	<0.002
30 min	3.55 ± 0.50	4.00 ± 0.00	<0.001
60 min	4.00 ± 0.00	4.00 ± 0.00	-
120 min	4.00 ± 0.00	4.00 ± 0.00	-
180 min	4.00 ± 0.00	4.00 ± 0.00	-
240 min	4.00 ± 0.00	4.00 ± 0.00	-
300 min	4.00 ± 0.00	4.00 ± 0.00	-

Table 2: Parturient analgesic quality

Analgesic quality	Group A (n = 25)	Group B (n = 25)	p value
Onset of analgesia (in minutes)	1.75±0.33	5.57±0.34	<0.001
Time to reach highest dermatome (in minutes)	10.40±1.07	19.54±1.43	<0.001
Duration of first stage of labour after CSE (in minutes)	209.36±3.05	207.92±2.08	0.06
Duration of second stage of labour (in minutes)	58.24±1.50	57.36±1.16	0.04
Spinal to delivery interval (in minutes)	231±35.38	215±37.03	0.09
Number of patients that required epidural top up (%)	1(4%)	8(32%)	0.04

Table 3: Comparison of mean foetal heart rate between two groups at different time intervals.

Foetal heart rate	Group A (n = 25)	Group B (n = 25)	p value
5 min	139.58 ± 4.78	143.27 ± 4.95	0.002
15 min	139.17 ± 6.35	140.80 ± 5.59	0.414
30 min	140.00 ± 4.34	141.18 ± 3.75	0.221
60 min	139.79 ± 4.90	141.97 ± 3.66	0.037
120 min	141.05 ± 5.03	141.51 ± 4.33	0.684
180 min	140.87 ± 3.12	141.18 ± 4.89	0.756
240min	145.43±4.56	142.56±4.67	0.342
300min	137.43±4.76	139.53±3.43	0.231

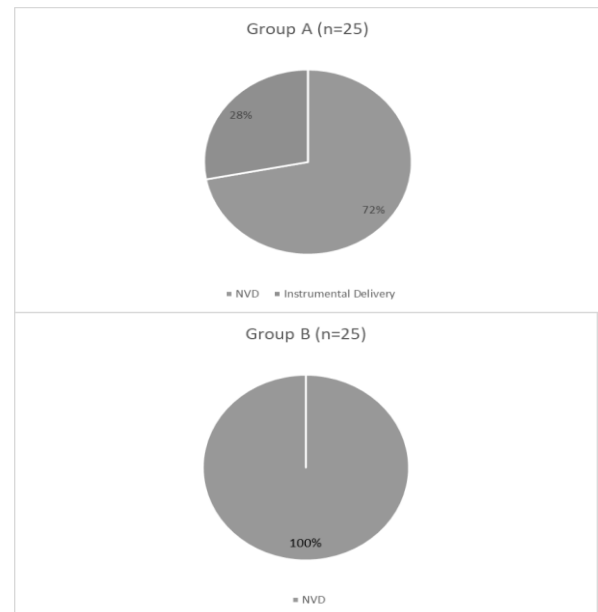


Figure 2: Distribution of mode of delivery in two groups.

Table 4: Distribution of APGAR score of newborns between two groups

APGAR score		Group A (n = 25)	Group B (n = 25)	p value
At 1 min	≤7	1 (4%)	2 (8%)	1.00
	>7	24(96%)	23 (92%)	
At 5 min	≤7	0 (00)	1(4%)	1.00
	>7	25 (100%)	24 (96%)	

Table 5: Maternal side effects between two groups

	Group A (n = 25)(%)	Group B (n = 25)(%)	p value
Hypotension	6(12)	0	0.03
Pruritus	7(28)	12(48)	0.36
Nausea\vomiting	5(20)	4(16)	1.00
Respiratory depression	0	0	N/A
Shivering	7(28)	4(16)	0.548
Headache	0	0	N/A
Urinary retention	0	0	N/A

Table 6: Maternal satisfaction regarding pain relieve between two groups

Maternal satisfaction	Group A (n = 25)	Group B (n = 25)	p value
Excellent	18(56%)	7 (36%)	0.003
Very good	4(24%)	3 (12%)	
Good	2(16%)	10(32%)	
Poor	1 (4%)	5 (20%)	

## DISCUSSION

The overall satisfaction of a parturient under labour analgesia depends on whether the onset of analgesia is rapid or not, whether she can move freely or not, whether duration of analgesia is long-lasting or not, whether she has any side effects or not and whether the condition of the baby is good or not. In our study the mean onset of analgesia of patients in group A was more rapid than that of group B. Veena Chatrath et al in their study also showed that levobupivacaine and fentanyl combination causes rapid onset of analgesia.<sup>9</sup> Time needed to reach highest dermatome was also short in group A than only group B which was also similar to Veena Chatrath et al. study. No significant difference was seen in terms of total duration of analgesia. But more parturients in F group (8/25) needed epidural top up doses than LF group (1/25). As every parturients of each group was given continuous epidural infusion of 0.0625% levobupivacaine with fentanyl 2µg/ml @ 10ml/hr through epidural catheter immediately after spinal injections and continued till the delivery of the baby it was difficult to evaluate duration of spinal analgesia itself.

Parturients of each group experienced some degree of side effects and was managed accordingly. Hypotension was significantly higher in LF group than F group. Shivering occurred more in LF group than F group but was not significant. Pruritus occurred more in F group than LF group but was not significant. Nausea/vomiting occurred more in LF group than F group but was not significant.

Mode of delivery is an important determinant of the success of labour analgesia. In our study it was found that parturients of LF group had some degree of

motor block at initial stage but it was not so troublesome and was completely wear off after (30-60) minutes and no motor block was occurred in F group . In the present study a significantly increased rate of instrumental vaginal delivery was observed in the LF group than the F group. In the LF group 7 parturients had NVD (72%) and 25 parturients had NVD in the F group (100%). Intensity of motor block and instrumental delivery rate depends on the concentration of local anaesthetics and intrinsic motor blocking capacity of local anaesthetic. In this study as in F group only intrathecal fentanyl was used, no motor block was occurred initially but in LF group as 0.5% levobupivacaine was used in combination with fentanyl some degree of motor weakness was noted but it was wearied off quickly.

Pain perception is a subjective complex phenomenon which is undoubtedly influenced by physiological, psychological and cultural factors. Quantification of pain on a visual analogue scale is considered as the gold standard for assessment of pain.<sup>6</sup> In the context of our country, where people believe that labour pain is an eternal thing to bear, labour analgesia itself is a great challenge to accept as treatment modality. So, interpretation of maternal satisfaction in this regard is difficult. Rather from the experience of the current study, many parturients confuse increased pressure sensation during the second stage of labour as pain perception. In the present study, the quality of pain relief was compared after intrathecal injections and overall, after delivery. Quality of pain relieved was not similar in between two groups. More parturients in LF Group were satisfied regarding pain relief than those of F group.

In the present study, combination of levobupivacaine with fentanyl as intrathecal injection on the background of continuous epidural infusion seems to give satisfactory results. Giving fentanyl as a sole agent in intrathecal component however does not bring out any better result.

### CONCLUSION

Intrathecal Levobupivacaine with Fentanyl for Combined Spinal-Epidural Analgesia in labour is the better option with more maternal satisfaction and with some nonsignificant maternal side effects (lower limb motor block and hypotension). In combined spinal epidural labour analgesia, intrathecal levobupivacaine (2.5mg) with fentanyl (25 microgram) can be safely practiced for pain free labour.

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Original Article

## Sociodemographic Profile of Centenarians in Southern Bangladesh

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### ABSTRACT

**Background:** There have been few studies conducted in Bangladesh on the sociodemographic status of individuals who live beyond the age of 100 years. The aim of this study was to assess the sociodemographic status of people who live for more than 100 years.

**Methods:** This prospective observational study was conducted in the Department of Medicine Shree-E-Bangla Medical College and Hospital (SBMCH), Barisal, Bangladesh during the period from February 2022 to October 2022. In total 50 people who live for more than 100 years were included as the study subjects for this study. Data regarding age, gender, dress, residence, source of water, sanitation, education, occupation, religion, and economic status of the participants were recorded. All data were collected, processed, and analyzed by using MS Office and SPSS version 23 programs as per need.

**Results:** In this study the male-female ratio was 2.8:1. Minimum and maximum age was 102 and 113 years and their mean ( $\pm$ SD) age was  $104.18 \pm 5.49$  years. About three-fourth of the participants lived in 'tin-shaded' houses, about two-third used 'Paka' latrines, almost all (94%) used tube-well water in their regular uses. Sixty four percent were educated up to the primary level, 58% were from lower-middle-class families, and 94% were Muslim. Agriculture was the most common occupation which was found among 74% of participants.

**Conclusion:** Youngest person in this study was 102 years and oldest is 113 years old. Most of them were Muslim and farmer in occupation.

**Key Words:** Sociodemographic profile, Live for more than 100 years, Immortality, Long life.

### INTRODUCTION

Centenarians are the senior citizens of the society who have a living experience of more 100 years. In Bangladesh, very limited studies regarding the sociodemographic status of the people who live long even for more than 100 years had conducted. Many individuals desire to have a long life and this wish is likely to become the reality for increasing numbers of people.<sup>1</sup> A continuous rise in life expectancy has been detected in

most industrialized countries over the past decades, with its main cause being lower mortality rates in the very old.<sup>2</sup> In fact, every second child born after the year 2000 can expect to reach his or her 100th birthday.<sup>3</sup> In Japan, the country with the highest life expectancy in the world, the number of individuals aged 100 years or older were reported to be 40,399 in 2009.<sup>4</sup> The CENSUS 2010 documented 53,364 individuals aged 100.<sup>5</sup> In Portugal, 1,526 centenarians were

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recorded in 2011 Instituto Nacional de Estadística (INE).<sup>6</sup> Between the years 1996 and 2006, the number of centenarians has multiplied by four in Japan, doubled in Italy and Spain, and increased by 1.5 in Eastern and Nordic European countries like Norway or Bulgaria.<sup>4</sup> In addition, the United Nations (2009) has projected an increase in the centenarian population up to about 4 million by 2050.<sup>1</sup> Increased longevity is due to several developments, like the reduction of late-life mortality and medical advances in treating and preventing many common diseases, as well as the improvements in living conditions and lifestyles.<sup>2,3,7</sup> Death seems to be delayed as individuals reach old age in better health.<sup>8</sup> Centenarians are generally investigated in the context of genetic, demographic, or medical research, in order to examine discipline-specific questions such as the development of the population of centenarians and/or supercentenarians in particular countries.<sup>3,4,9,10</sup> The aim of this study was to assess the sociodemographic status of people who live for more than 100 years.

## **METHODS**

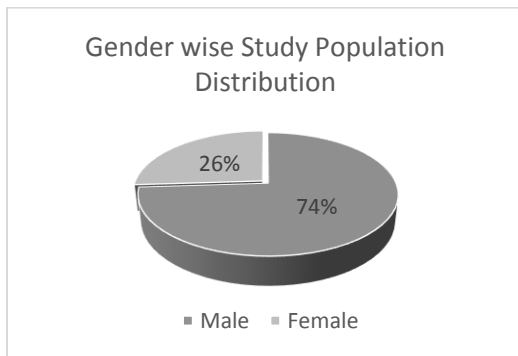
This cross-sectional study was conducted in the Department of Medicine Shree-E-Bangla Medical College and Hospital (SBMCH), Barisal, Bangladesh during the period from February 2022 to October 2022. In total 50 people who live for more than 100 years were included as the study subjects for this study. Data regarding age, gender, dress, residence, source of water, sanitation, education, occupation, religion, and

economic status of the participants were recorded. Ethical approval of the study had been taken from the ethical committee of the institute. As per the inclusion criteria of this study, people >100 years of age from both gender groups were included as the study subjects. As the proof of age of the participants, the birth certificate and/or national identification (NID) card were considered with priority. In the case of very aged 3-persons, information from relatives and participants' knowledge about ancient history were considered as proof of age. In the case of unconscious and severely ill most aged participants, the necessary information was recorded as per the opinions of the family members of the participants. So, as per the exclusion criteria, people without proper documents and/or not willing to participate in this study were excluded. A predesigned questionnaire was used in data collection. All data were collected, processed, and analyzed by using MS Office and SPSS version 23 programs as per need.

## **RESULTS**

About two-third of the participants (74%) were male (Figure-1). The mean ( $\pm$ SD) age of the participants was  $104.18 \pm 5.49$  years. In this study, the majority (64%) of participants were educated up to the primary level. Besides this, 10% and 2% were educated up to SSC and graduate/above levels respectively. Religious studies were taken by 2% and the rest 22% were illiterate (Table-1). Most of the participants (62%) were with the habit of using traditional Bengali dress in their daily life and the rest 38% were used to

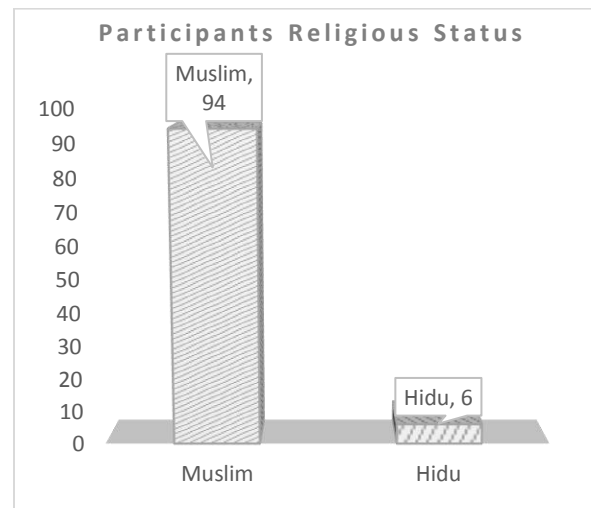
Islamic dress. On the other hand, the majority (64%) of participants lived in ‘tin-shaded’ houses and only 10% lived in buildings (Table-2). The majority of the participants (94%) were Muslim whereas the rest 6% were Hindu in religion (Figure-2). About three-fourth (72%) portion of the participants used ‘Paka’ latrines whereas the rest 28% used “Kacha” latrines (Figure-3). All most all of the participants (94%) used tube-well water in their regular uses. Only 6% of participants used pond water in their regular uses. Agriculture was the most common occupation which was found among 74% of participants. Besides this, 12%, 6%, and 8% of participants were engaged as non-government service holders’ government service holders, and businessmen respectively (Table-1). The majority of the participant (58%) in this study were from lower-middle-class families. Besides these, 4%, 20%, and 18% of participants were from rich, upper-middle-class, and poor families respectively (Table-1). 62% were using traditional Bengali dress in their daily life and 38% were using Islamic dress.



**Figure 1:** Gender distribution of the Participants (N=50)

**Table 1:** Educational, Occupational and economic status of participants (N=50)

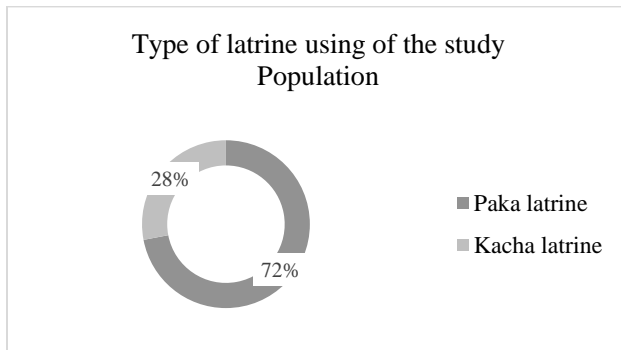
Variables	N	%
<b>Educational Status</b>		
Illiterate	11	22%
Primary	32	64%
SSC	5	10%
Graduate/Above	1	2%
Religious Study	1	2%
<b>Occupational Status</b>		
Agriculture	37	74%
Non Government service	6	12%
Government Service	3	6%
Businessman	4	8%
<b>Economic Status</b>		
Rich	2	4%
Upper Middle Class	10	20%
Lower Middle Class	29	58%
Poor	9	18%



**Figure 2:** Religious status of participants (N=50)

**Table 2:** Residence types of participants (N=50)

Type	n	%
Kacha ghar	7	14%
Tin-shaded house	32	64%
Tin shed building	6	12%
Building	5	10%



**Figure 3:** Type of latrine used by the Participants (N=50)

### DISCUSSION

In this study, the mean ( $\pm$ SD) age of the participants was  $104.18 \pm 5.49$  years with the range between 102 and 113 years. Centenarians had clothing that embodies their cultural heritage and personal taste.<sup>1</sup> About three-fourth of the participants (62%) were with the habit of using traditional Bengali dress in their daily life and the rest were using Islamic dress. Some studies reported that many centenarians continue to have goals and want to live that they may have particular personality profiles.<sup>11-13</sup> In our study, we have found that the dress habit is the reflection of that personality profiles. Most of the participants (94%) used tube-well water in their regular uses. Rest of the participants used pond water. This scenario reflects the personal hygiene and health concern of these senior citizens. In this study, the majority (64%) of participants were educated up to the primary level, religious studies were taken by 2% and the rest 22% were illiterate. The level of education has also considered to what extent psychological as well as social

wellbeing are present.<sup>14,15</sup> Poon and colleagues and Martin P & Martin M also offer theoretical models including a broader set of predictors like demographics, personality, life events, and social aspects to gain a more comprehensive understanding of factors associated with longevity, health as well as the quality of life.<sup>16,17</sup> Regarding the lifestyle and social aspects of the centenarians we found that the agriculture was the most common occupation which was the occupation of majority of the people in this part of Bangladesh during the younger phase of their life. So, they had good quality in these longer life as they had followed the traditional way of livelihood. Most of the participants (94%) were Muslim whereas the rest were Hindu. This reflects the scenario of Muslim predominated society.

### Limitation of the study:

Though it was a single-centered study with a small sample size, so the findings of this study may not reflect the exact scenario of the whole country.

### CONCLUSION

Mean age was 104 years ranging from 102 to 113 years. Most of them were Muslim and farmer in occupation.

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Case Report

## Anesthetic Management of Heterotopic Pregnancy for Emergency Exploratory Laparotomy

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### ABSTRACT

Heterotopic gestation is an uncommon entity with natural conception but has increased in recent years due to assisted reproduction techniques. Sometimes it causes maternal morbidity and occasional fetal mortality. It possess a great challenge for anesthetist to manage ruptured heterotopic gestation as both maternal and fetal safety are at risk. We are reporting a case of 25 years old G<sub>2</sub>P<sub>0</sub>A<sub>1</sub>L<sub>0</sub> who presented to us at 8 weeks of pregnancy with complain of persistent lower abdominal pain for 5 days. Subsequently her pain was increasing in intensity and spreading to whole abdomen. On admission ultrasound revealed single living intrauterine pregnancy with a heterogeneous mass on left adnexal region. Then she underwent diagnostic laparotomy and successfully managed with the left sided salpingectomy. In anticipation of hemorrhage, general anesthesia was administered with the use of multiple large bore intravenous accesses. The patient's condition remained stable throughout the procedure, with moderate blood loss effectively managed through the administration of crystalloid fluids, blood products, and tranexamic acid. As a result, the patient experienced an excellent recovery. She was extubated immediately in operating room and was discharged on post-operative day 4 with no issue. She delivered a healthy baby at 36 weeks of gestation via cesarean section without further complication.

**Key word:** Heterotopic pregnancy, Ectopic pregnancy, Ultrasonography, Obstetrics anesthesia.

### INTRODUCTION

Heterotopic pregnancy defined as simultaneous presence of intrauterine and ectopic pregnancy. It is rare condition in natural conception but due to the use of artificial reproductive technique the incidence is increasing. Most of extrauterine pregnancies are found in fallopian tubes but abdominal implantations have also been observed. The heterotopic pregnancy is reported incidence is 1 in 30000 pregnancies of natural conception. But the incidence of heterotopic pregnancy has been raised to approximately 1 in 100 to 1 in 500 pregnancies of using artificial reproductive technique.<sup>1</sup> Additional significant risk factors associated with the development of

heterotopic pregnancy include a family history of multiple pregnancies, elevated levels of fetal hormones, tubal disease, and a history of pelvic inflammatory disease.<sup>2</sup> The present case represents a rare instance of heterotopic pregnancy complicated by hemoperitoneum.

### CASE REPORT

A 25-year-old female with past medical history of hypothyroidism who was treated with thyroid hormone and became euthyroid during her pregnancy. It was her second pregnancy and she had a history of abortion during her first pregnancy. She was presented with lower abdominal pain for 5 days and she felt intense pain for last 12

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hours. At presentation, she stated that she was pregnant for 8 weeks, she took ovulation induction drug before her pregnancy. Her quantitative  $\beta$ -HCG level was 16696 mIU/mL confirming pregnancy. Initial ultrasonography finding showed single live intrauterine pregnancy of about 7 weeks and 6 days (Photograph 1), fetal heart rate was 170 beats/min, a heterogeneous mass isolated on left adnexal region, free fluid



Photograph 1: Ultrasonogram at 7 weeks 6 days of gestation

collection in hepatorenal angle and pelvic region. A presumed diagnosis was rupture heterotopic pregnancy. Patient was scheduled for emergency laparoscopy. On pre-anesthetic evaluation patient was clinically pale, blood pressure was 110/70

mm (Hg), heart rate 115 beats/min, hemoglobin was 9.7 g/dl, platelet was 12600/ $\mu$ L, hTSH was 1.31  $\mu$ IU/mL. The general anesthesia was planned for urgent diagnostic laparoscopy. Anesthesia was induced after premedication with glycopyrronium bromide 0.2mg and fentanyl 75  $\mu$ g. Patient was preoxygenated with 100% oxygen. Induction was carried out with propofol 2mg/kg and intubation was done with suxamethonium 1.5 mg/kg. The patient was intubated with 7mm size cuffed endotracheal tube. The anesthesia was maintained with Oxygen: air by 60: 40 ratio, 0.4 MAC isoflurane and remifentanyl infusion 100-200 $\mu$ g/hour according to patient's hemodynamic status. Muscle relaxation of the patient was maintained by vecuronium bromide.

During laparoscopy, a ruptured left fallopian tube was observed, accompanied by active bleeding. The surgical view was significantly obstructed due to the substantial amount of bleeding, prompting the obstetric team to convert to an open laparotomy. The ectopic pregnancy was successfully removed, and a left salpingectomy was performed, along with the evacuation of hemoperitoneum.

The patient was stable throughout course of surgery and postoperative period. Adequate volume resuscitation along with ephedrine was done. She was resuscitated with 2 unit of packed red blood cell, 1000ml Hartman solution and 500 ml 6% hexa ethyl starch during operation period. One-gram tranexamic acid was given to controlled active bleeding from surgical site. At the end of surgery neuromuscular blockade was reversed and patient was extubated successfully. Fetal monitoring was done though post-operative period by ultrasonography. Multimodal analgesia was maintained by intravenous paracetamol injection and intramuscular pathedine

injection during post-operative period according to patient's condition. During post-operative period fetal's parameters are well, and no fetal abnormality was found. At the 36 week of pregnancy patient gave birth a healthy baby by cesarean section. There was no abnormality found in neonate and vital signs were within normal limit. The APGAR score of the neonate at 1 and 5 minutes was 10.

## DISCUSSION

A ruptured heterotopic pregnancy requires careful consideration of maternal and fetal physiology, pharmacodynamic, pharmacokinetic in addition management of hypovolemic shock. In previous study showed that, on based on limited evidence the maternal and fetal outcome are no different in general and regional anesthesia.<sup>3</sup> But for exploratory laparotomy in ruptured heterotopic pregnancy neuroaxial anesthesia is less suitable than general anesthesia due to patient's hypovolemic state.<sup>3</sup>

The principal goals of anesthetic management were to maintain maternal hemodynamic stability, preserving maternal ventilation and oxygenation to prevent fetal asphyxia during intra and post-operative period. Given the first-trimester pregnancy in this case, a major concern was to ensure that any drugs or techniques utilized during surgery did not interfere with normal embryological development or pose a risk of teratogenicity to the fetus.<sup>4</sup> Our primary goal was to prioritize the safety and well-being of the developing fetus.

We prefer general anesthesia although regional anesthesia provide less fetal drug exposure, better airway security, lesser blood loss but it causes hypotension resulting from sympathetic nerve blockade,

which decrease uterine blood flow and perfusion to the fetus.<sup>5</sup>

Measures that were taken for maternal and fetal safety are discussed in the following section.

Aspiration prophylaxis and rapid sequence induction: As there was an increase the risk of regurgitation and aspiration due to decrease lower esophageal sphincter tone in pregnancy.<sup>6</sup> We used proton pump inhibitor and antisialagogue such as glycopyrolate in premedication. We used RSI protocol for this purpose.

Maternal blood pressure: Prolong maternal hypoxemia causes utero-placental vasoconstriction which can decrease utero placental perfusion that can result fetal hypoxemia, acidosis and death.<sup>7</sup> We used isotonic saline, colloid, Packed red cell along ionotropic agents to maintain normovolemia.

Maintaining normocapnia: Hypercapnia can cause uterine artery vasoconstriction and reduce uterine blood flow.<sup>8</sup> we maintained ETCO<sub>2</sub> level 30-35 mm (Hg). We did ABG in preoperative period and took adequate measure to maintain pH within physiological limit. We kept insufflation pressure of CO<sub>2</sub> within 8 to 10 mm (Hg) to produce pneumoperitoneum of the patient during laparoscopy.

Avoid teratogenic anesthetic agent: We avoided the use of N<sub>2</sub>O as it inhibits methionine synthetase which is necessary for DNA synthesis. Teratogenic effects are shown in animal studies after giving high concentration for long period.<sup>9</sup> We used air as carrier gas instead of nitrous oxide and low dose remifentanyl infusion as analgesic during intra operative period. We avoided NSAID and benzodiazepine as these drugs may produce cleft palate and cardiac anomaly specially in 1<sup>st</sup> trimester.

## CONCLUSION

This case was challenging for us as we were dealing with not one but two patients simultaneously. Our primary concern was maternal safety and our real success lay in an ongoing pregnancy and better fetal outcome. We ensured early diagnosis, early resuscitation, multidisciplinary team approach for better outcome of patient and fetus. So early diagnosis and timely management of heterotopic pregnancy may reduce the danger of life of mother as well as fetus.

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